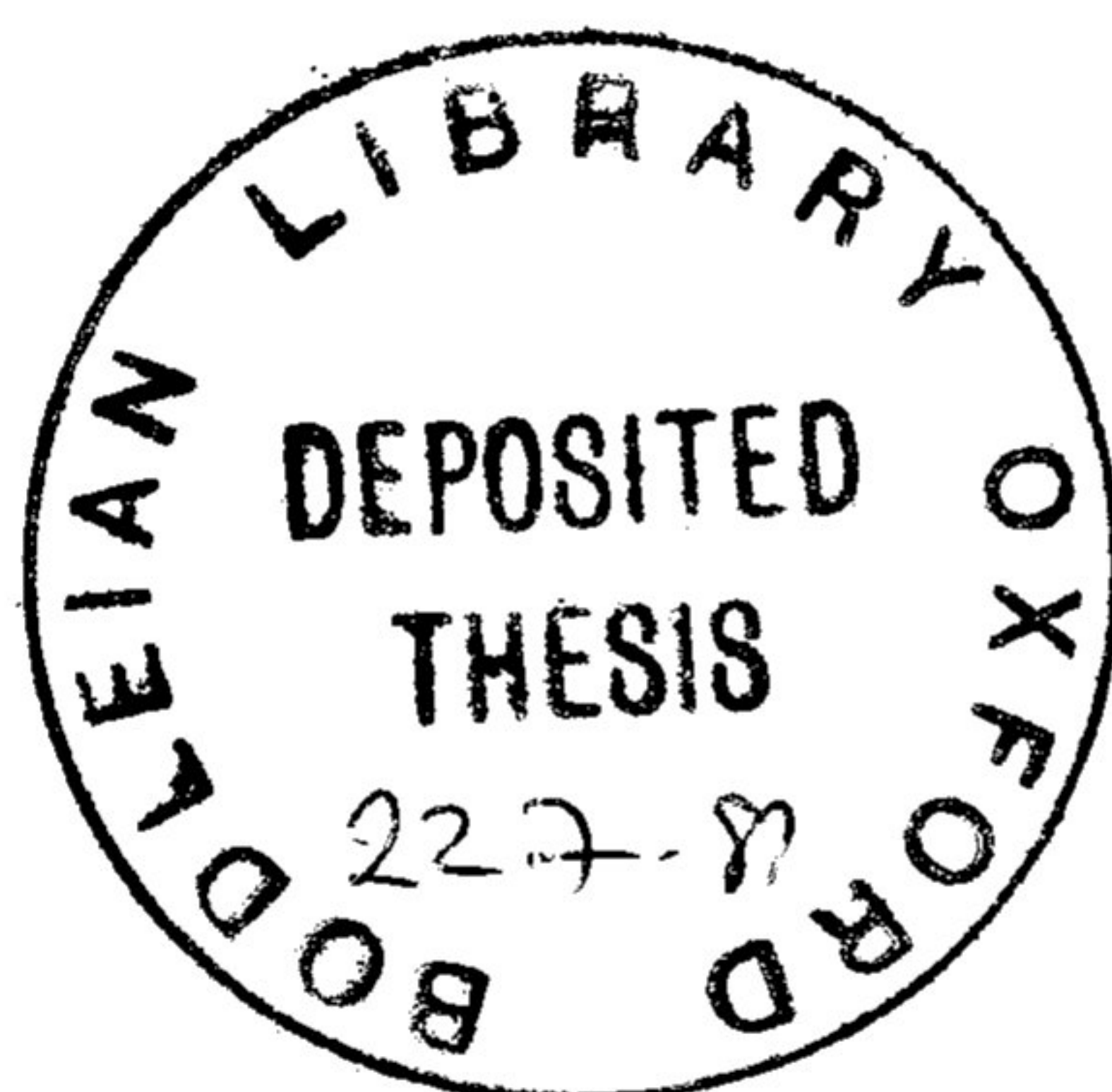


Aristotle's Account of Sense-Perception
in De Anima II.5, II.12, and III.2.



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ABSTRACT

Aristotle's Account of Sense-Perception in De Anima II.5, II.12, and III.2.

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The idea that Aristotle portrays perception as a kind of conceptual activity is supported by this thesis. This support is the result of a detailed consideration of Aristotle's formal characterizations of perception in De Anima II.5, II.12, and III.2.

The first chapter considers Aristotle's doctrine that actual sense and sense-object are 'the same, but different in being' (DA III.2). This doctrine may amount to the dispositional view that sense-qualities as sensed exist only when sensed, or to the trivial view that sensed sense-qualities so exist. Aristotle's treatment of his non-Democritean predecessors, and his positive account of the sense-qualities in DA and DS, cannot decide between these interpretations. His rejection of the Democritean dispositional theory on the basis of features shared by all dispositional theories, however, would seem to confirm the trivial interpretation of the unity-of-actuality doctrine.

The second chapter turns to Aristotle's doctrine that perception is a special kind of assimilation of the senser to the object of sense (DA II.5). A change in the senser's sense-organs is unlikely to be a case of the special kind of assimilation, whose distinctive feature is its status as an energeia. The senser's cognitive assimilation to the object of sense, on the other hand, might well be. The view that Aristotle's assimilation doctrine identifies such an assimilation, however, requires support from Aristotle's form-without-matter doctrine.

The doctrine that sense receives the sensible forms without the matter (DA II.12) is thus the subject of the third chapter. Physicalist and unity-of-actuality interpretations of this doctrine, antecedently implausible, are in fact unsatisfactory. An acceptable non-physicalist interpretation, however, may be based on the view that a form-without-matter is a universal. On this interpretation, Aristotle's form-without-matter doctrine (supplemented by his assimilation doctrine) states that perception is the reception of a particular sensible as a sensible. If this interpretation is right, Aristotle would indeed see perception as a kind of conceptual activity.

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INTRODUCTION*

Aristotle's formal characterizations of perception in De Anima II.5, II.12, and III.2 stand out in a work on perception often occupied by scientific matters. In these characterizations at least the philosopher may hope to find an interesting, philosophical theory of perception. And although some philosophers have felt constrained to surrender this hope, others, indeed, have been confident of its fulfillment. It is the contention of this thesis that Aristotle's three characterizations, however contradictory in their suggestions, do yield an interesting, if not wholly transparent, account of perception.

Aristotle's unity-of-actuality doctrine (DA III.2), on one of its interpretations, would amply confirm this contention. For on that interpretation, Aristotle's view that sense and sense-object, as actual, are *ἡ μὲν αὐτή... τὸ δ' εἶναι ἕτερον* amounts to the view that the special sensibles, as we know them in experience, are sense-dependent; apart from sensing, they are merely powers of physical objects. Hand-in-hand with such a distinction between potential and actual sense-qualities, however, would go a Lockean-style theory of perception. If Aristotle's unity-of-actuality doctrine, then, makes this distinction, it also supports a substantive, if controversial, account of perception.

The question of how to interpret the unity-of-actuality doctrine, however, is open, as will be seen

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in the first chapter of this thesis. For Aristotle's view might be nothing more substantial than this, that sensed sense-qualities depend on sensing; and this view does not support any particular theory of perception. Unfortunately, as will be argued, Aristotle's statement of his unity-of-actuality doctrine is indeterminate between these two interpretations; and while other texts might seem to support the stronger, they cannot, in the end, sustain it.

If Aristotle's unity-of-actuality doctrine must thus be deemed trivial, the interpreter must turn to his assimilation and form-without-matter doctrines. The assimilation doctrine (DA II.5), that sensing is a species of assimilation of senser to sense-object, has fuelled the rejection of Aristotle's theory as unphilosophical. For this doctrine might be interpreted to state the sense-organs' assimilation to the sense-objects. And Aristotle's form-without-matter doctrine, that sense is receptive of the sensible form without the matter, might then be interpreted in a similar way. But if this is right, Aristotle is formally characterizing perception as a change of a sense-organ; and this is clearly an inadequate view of the nature of perception.

Aristotle's assimilation and form-without-matter doctrines, however, are also subject to other interpretations. Indeed, in stating his assimilation doctrine, Aristotle introduces a refined concept of assimilation, of which perception is a case; and this sort of assimilation, as will be seen in the second chapter, is not likely to be a physical change. But

although one would like then to interpret the senser's assimilation to sense-objects as cognitive, this interpretation will be found difficult to confirm on the basis of Aristotle's statement of this doctrine.

Yet it might in the end be redeemable, for Aristotle glosses this doctrine by his form-without-matter doctrine - a doctrine arguably most suggestive of a non-physicalist view of perception.

The form-without-matter doctrine (DA II.12), then, will be the subject of the last chapter. This doctrine seems amenable to at least four interpretations: a physicalist interpretation, a unity-of-actuality-based interpretation, and two non-physicalist interpretations. The first two, antecedently implausible, will in fact be found wanting. The third will be seen to share the difficulty of the refined assimilation doctrine it is meant to explicate. The last, however, will be seen to have some promise. And if right, we must indeed understand perception as the senser's cognitive assimilation to the object of sense: his reception of the sense-quality as a sense-quality. In bringing the use of concepts into his account of perception, Aristotle (our investigation will thus suggest) clearly also views perception as something more than a physical change, even if his view is not as fully developed as one might have liked.

I. THE UNITY-OF-ACTUALITY DOCTRINE

Introduction

Aristotle's doctrine at De Anima III.2 (425b26 - 426a26) of the mutual dependence of actual sense and sense-object is of great interest. His view here, more precisely, is that the 'actuality of the sense-object and of the sense is the same and one, but their being is not the same' (425b26-27). His example of this doctrine throughout this passage is of actual sound and hearing, although he means it to hold at least of colour, flavour, and odour as well. And he concludes from this doctrine that it is necessary 'for hearing and sound, so understood' - i.e. as actual - 'and flavour and tasting, and the others likewise, to be simultaneously destroyed and preserved; but in the case of those called in accordance with potentiality, this is not necessary' (426a 17-19).

Aristotle's unity-of-actuality¹ doctrine is subject to two broad interpretations.² The difference between these interpretations turns on their understanding of the notion of an actual sense-quality: on the first, for a sense-quality to be actual is for it to be sensed; on the second, less trivially, for a sense-quality to be actual is for it to be brought into existence (other than as a power). Accordingly, the first interpretation takes Aristotle's claim to be that sound is actualized as hearable only insofar as we are hearing; the second, that sound is actualized as sound - as the item we are aware of when hearing - only insofar as we are hearing. Hence

the interpretations differ crucially on the question of whether an unheard sound is a sound or only the material conditions for a sound proper, i.e. as heard; for the stronger view asserts the latter and the weaker does not deny the former.³

This second view, if Aristotle's, would place him in a recognizable tradition in the theory of perception and its objects. In this tradition, the secondary or special sensible qualities are held to be mind-dependent; unperceived, they do not exist as such. Physical objects, of course, have powers for producing perception of the various secondary qualities, but these powers are based in actual qualities specifically or categorially different from the qualities we are aware of. The idea, then, that apart from perception the secondary qualities are merely dispositions of things, whatever their actual bases might be thought to be, is definitive of theories in this tradition, and hence we may conveniently refer to them as 'dispositional theories'.

The grounds for adopting a dispositional theory are various. Epistemological considerations may be paramount: the variability in our perceptions of the special sensibles suggests to some that there is nothing actually existing in physical objects which is faithfully represented by our percepts. Or again the motivation may come from a conviction, derived from science, of the superfluity of the actual existence of the secondary qualities in objects: they might not themselves be required for explanations of other phenomena and qualities,

and their actual bases might be sufficient to account for our perceptions of them. But if it is possible, for explanatory purposes, to do without these qualities, then it is desirable to do without them.

Aristotle, as is well known, is not drawn to epistemological issues. He does, however, give proper weight to scientific considerations, and might have been led to a dispositional view on their account. The particular details of a dispositional theory, of course, will depend on the scientific view the theorist subscribes to; for it is science that will tell him what qualities provide the actual bases for the secondary qualities as dispositions. So Aristotle, hotly rejecting the Democriteans' atomistic theories, also rejects their particular version of the dispositional theory, which bases the secondary qualities as dispositions in the figures, magnitudes, and motions of the atoms constituting the objects of everyday experience. If Aristotle is a dispositional theorist, his theory will look quite different from the Democritean; but then so, in this way, might a modern dispositional theory look different from, e.g., the Lockean.

If dispositionalists may differ in the physical details of their theories, they all share certain further views and tasks. The dispositional theorist, for example, must explain how our perceptual beliefs are ever justified, for his view commits him to the theory that perception is mediated by items numerically and often specifically different from the items we perceive.

The dispositional theorist must also account for the use of sense-quality terms on his view, for these terms will have two uses, a non-dispositional and a dispositional. They will be used, first, to refer to the contents of our perceptions - so it must be plausible for them to refer to such private entities. And, unless the dispositional theorist wishes to deny altogether that physical objects are sensibly qualified, they will also be used to refer to the dispositions of these objects for causing our perceptions. Hence the dispositional theorist is also committed to finding an adequate translation of statements attributing sense-qualities to objects. If Aristotle is a dispositional theorist, he, too, is committed to these further views, and to the resolution of these further problems.

Deciding which version of Aristotle's unity-of-actuality doctrine is correct, then, is not without importance. For if the stronger, dispositional interpretation is correct, then Aristotle's view of perception and its objects, though controversial, is also an interesting and full philosophical theory. If, on the other hand, the weaker interpretation is correct, then Aristotle's view here will be of no interest. For the view that heard sounds exist only insofar as we hear them is trivial, and, generalized, cannot rightly serve as a formula expressing the nature of perception and its objects.

The task of this chapter will be to decide between these interpretations. The concern of the first section (i) will be Aristotle's doctrine in DA III.2 itself.

The finding of this discussion will be that DAIII.2 is indeterminate between the stronger and weaker interpretations. Hence, other sources will be considered in the remaining sections: in the second (ii), Aristotle's assessment of his non-Democritean predecessors' theories of perception and its objects; in the third (iii), Aristotle's own account of the sense-objects in De Anima and its continuation De Sensu; and in the last (iv), Aristotle's criticisms of the Democritean theory. Although every effort will be made to establish the stronger, dispositional interpretation, it will be found necessary, in the end, to support the weaker.

(i) DA III.2 . 425b26 - 426a26

DA III.2 425b26 - 426a26. divides into a number of sections. In the first Aristotle states his doctrine and illustrates it by the case of sound (425b26-426a1). Next he establishes that the actual sense-object comes to be in the senser, applying a principle of his Physics first to sound (a2-8) and then to the other sense-objects (28-11). He then notes an asymmetry between sound and colour or flavour: the actuality of sound has a name, that of colour or flavour does not (a13-15). And he finally establishes the mutual dependence of actual sense and sense-object, chastising earlier theorists for their bald claim that there are no sense-objects without sensing; this is true only of actual sense-objects, not of potential sense-objects (a15-26).

Aristotle's principal claim in this passage is that actual sense and sense-objects are 'the same, but different in *εἶναι*'. This relation is applied to all manner of items in the psychological treatises: sense and sense-organ; primary sense-faculty and special faculties; that which can perceive and that which can pursue and avoid; perception and imagination; the sweet and the white.⁴ It is unclear, however, whether items the same but different in *εἶναι*, are in fact one item, given under different descriptions, or two items 'in a way the same' in sharing the same substratum.⁵ Is the path from A to B and B to A one path under different descriptions, or

are they two paths which are accidentally the same in sharing the same strip of land? Aristotle's formula has been read in both ways. But on either reading, the crucial point is that items so related depend on each other for their existence.

The central question for us, then, is what items are so related: sense and sense-object or sense and sensed sense-object? To answer this question we shall consider, first, Aristotle's usage of 'potentiality' and 'actuality'; next, the evidence of our passage itself; and finally, two arguments for the weaker view, the first based on Aristotle's application of his Physics principle to our case, the second on the nature of affection. It will emerge, however, that none of these considerations is decisive.

A reflection on Aristotle's usage of 'potentiality' and 'actuality' and their cognates in the rest of the corpus would seem fruitless for our purposes, for Aristotle's usage is not consistent. The 'ἐνέργεια' of a sense-quality', for instance, might be translated the 'actualization or activity of the sensible quality', and be used to refer to the sensible quality's being sensed. But it might also be translated 'the actuality of the sense-quality', and be used to refer to the sense-quality's coming into existence, i.e. being actually a sense-quality. In the same way, a sense-quality 'κατ' ἐνέργειαν' might be used of an actually sensed sense-quality, or it might be used of an actually existing sense-quality.⁶

Similarly unhelpful are Aristotle's discussions of qualities which have different stages of actuality. In Physics VIII.4, it is true, Aristotle seems to suggest

that there are different stages of actuality for properties such as lightness and being 2' by 2':⁷ something may be potentially light because it can be made actually light, or because it is light but is prevented from rising. But a light thing held to the earth is in a plain sense light, even though it may be further actualized.⁸ So one might try to assimilate e.g. taste to lightness; taste in potentiality may be in a plain sense a taste; it simply has a further stage of actuality: being a tasted taste.

But however true that there are models for the weaker interpretation of potential sense-qualities, there are also models for the stronger. Indeed, Aristotle most customarily makes his 'stages of actuality' point of what we would call dispositional properties: knowledge, the virtues, and so on.⁹ And perhaps rightly so: one might be most tempted to say that a property has two stages of potentiality if it can both potentially exist - a man, for example, can acquire virtue - and if its actual existence is as a power or disposition - a virtuous man is one who is disposed to acting virtuously. But if the sense-qualities are assimilated to this model, then the sense-qualities as (second) potentialities ought to be seen as powers to stimulate sense. Yet since models for both views exist, we are left with the question of which model the case of the sense-qualities follows.

General considerations such as these, then, cannot be invoked to solve our difficulty. But DA III.2 itself is indeterminate between the stronger and weaker views. The evidence for the stronger resides in Aristotle's illustration of his doctrine by the case of sound: the

'actuality of the sense-object and of the sense is the same and one, but their being is not the same; I mean, for example, actual sound and actual hearing: for it is possible for that which has hearing not to hear, and that which has sound does not always sound; but when that which is capable of hearing is in act, and that which is capable of sounding sounds, then the actual hearing comes to be at the same time as the actual sound, of which one might say the one is hearkening and the other sounding ' (425b26-426a1).

Aristotle, here, illustrates the notion of an actual sense-object by the case of an actual sound. More important, he gives the notion of an actual sound sense by contrasting it with potential sound¹⁰ - or the sound a thing can make, but is not now making. It would seem, then, that an actual sound is the sound a thing does make. This is also suggested by the fact that it is the sounding of that which is capable of sounding, so referred to by Aristotle in 425b30, that is to stand in the unity-of-actuality relation with hearing. But if this is right, then for a thing to make a sound is for it to be heard; for this is just what the unity-of-actuality relation asserts.

Hence, Aristotle's language here suggests that for sense-quality F to be actual is for it to be F (and sensible), and not for it to be sensed F. For if the latter were meant, surely Aristotle would have illustrated the idea of a potential sound by the case of a hearable, but unheard, sound; and, more important, he would have

illustrated the idea of an actual sense-object by the case of an actually heard sound, described as such.

Minor infelicities perhaps weaken this view. It is true, for example, that Aristotle's claim is that when someone is hearing when a sounding thing sounds, then actual sound, which stands in the unity-of-actuality relation with hearing, comes into being. But in fact it cannot be inferred from this that a thing can sound when no one is hearing, any more than it can be inferred from this that someone can hear when there is no sound to hear.

It is also true that a thing can emit air waves in the absence of perceivers, a case Aristotle seems to neglect. But these air waves, if Aristotle is a dispositional theorist, are only potential sound; they are not sound proper, i.e. as heard, unless received by the sense of hearing. Hence the case of, e.g., a clanging bell in the absence of perceivers, is, with the case of an unclanging bell, a case of a thing's only potentially making a sound proper. No doubt the former is closer to actuality than the latter. But so is an illuminated object closer to actually displaying a colour than an unilluminated. Yet since both are only potentially sensibly qualified in the relevant sense - viz. potentially displaying the quality we are aware of in experience - an explicit distinction between the two potential cases is not necessarily called for.

Indeed, Aristotle might have had good reason for ignoring the case of unheard sounds. For in one sense of the word 'sound', the unclanging bell is making a 'sound' even when no one is within earshot. But if at

this stage of his exposition Aristotle had introduced the case of unheard sounds, and called such potential sounds 'sounds', his readers might wrongly have concluded that such sounds were potential only in not being heard - not in not actually being sounds as we hear them.

DA III.2 supports the stronger interpretation of the unity-of-actuality doctrine, then, in its treatment of sound. Unfortunately, however, this passage also supports the weaker interpretation in its brief treatment of the other sense-qualities. For Aristotle claims at DA 426a13-15 that the actualities of colour and flavour are nameless; and this must be to say that, apart from perception, there are qualities called 'colour' and 'flavour' whose action on their corresponding senses is nameless. But if Aristotle's restriction of 'sound' to the quality we are aware of in experience is taken to suggest that sounds as we know them do not exist apart from experience, then Aristotle's application of 'colour' and 'flavour' to object-properties apart from experience must be taken to suggest that they exist as such apart from experience.

This conflict might, of course, be resolved under pressure, for Aristotle's language is in any case only suggestive, not binding. A proponent of the dispositional view, for example, might suggest that by 425a13-15 Aristotle is using the sense-quality words of the sense-qualities as dispositions. For just as one might say 'Socrates thinks', and mean 'Socrates can think', so one might say 'sugar has a sweet flavour' and mean 'sugar can produce perception of a sweet flavour'. Hence, the cases of flavour and colour would be assimilated to the case of

sound, as originally understood.

But though these manoeuvres may give this passage consistency, they cannot tell us which reading is to be preferred, for that is a prior question. We may now consider an argument, however, which purports to answer that question in favour of the weaker interpretation. This argument derives from Aristotle's application of his principle of Physics III.3 - that the actuality of an agent comes to be in the patient¹¹ - to the case of sense and sense-object.

Aristotle's argument for his principle is as follows. If the actuality of the agent came to be in the agent, that of the patient in the patient, then there would be movement in the mover, and all movers would be moved; for to say that the movement is in the mover is at least to say that the mover is moved (202a26-31). But if both actualities cannot come to be in the agent, as is obvious, then the actuality of the agent must come to be in the patient. Nor is there anything unreasonable about this, for the agent's potentiality is a potentiality for changing the patient, which is, at once, the patient's being changed; its actuality, then, is 'of this in this' (202b5-8).

The relationship between the actualities of the agent and patient is established in a further argument. These actualities could not be different, for if they were, the patient would suffer two actions to the same end, which is absurd (202a34-36). The acts, then, must be the same, though they must not be the same in *ἐἶναι*; for in that case they would share all predicates, and

it would be necessary for the teacher to learn everything, and the agent to be affected, Hence the acts must be the same, but different in $\epsilon\hat{\iota}\nu\alpha\iota$, as are the slope up and down and the interval from A to B and B to A (202b8-22).

Aristotle's Physics principle, then, is developed for the case of interacting entities: a's ϕ ing of b comes to be in b, and is the same as, but different in $\epsilon\hat{\iota}\nu\alpha\iota$ from, b's being ϕ -ed by a. But its application in DA thus suggests that an actual sense-object is a sense-object acting on sense, which would amount to its being sensed. Hence Aristotle's claim would be that a sense-object's being sensed comes to be in the senser. It would follow that the actualities of the sense-object and senser are the same, but different in $\epsilon\hat{\iota}\nu\alpha\iota$; for this was just the relation established to hold between an agent's action and a patient's affection in the Physics.

In short, the fact that Aristotle invokes his Physics principle to support the view that the actual sense-object comes to be in the senser suggests that 'actual sense-object' means 'actually sensed sense-object', and that actual sense and sense-object are asserted to stand in the unity-of-actuality relation for the same reasons as are all other action and affection.

But this case for the weaker interpretation of DA III.2 may be challenged. For let us suppose, for the sake of argument, that Aristotle's notion of an actual sense-object in III.2 is the stronger one: 'actual sound', then, means 'hearable sound', i.e. 'sound and hearable', and not 'heard sound'. Never-

theless actual sound, or hearable sound, exists only in being heard; hence, the actuality of the potential sound is at once the actuality of the sound's hearability. But this means that for sound to come to exist is for it to fulfil a role in an action-affection pair. And this in turn allows Aristotle to use his Physics principle to establish that the sound which is the same as, but different in *εἶναι* from, the hearing, since it is also the agent-term in an action-affection pair, takes place in the hearer. Aristotle's application of his Physics principle to our case, then, may be designed to make a further point about actual sense-objects; it need not be taken to be illustrating the meaning of 'actual sense-object'.

If this view is right, Aristotle will have independent reasons for asserting the dependence of sound on hearing; but these may be the reasons for which philosophers down through the ages have supported a dispositional theory. Moreover, the relation of sound and hearing will then be describable by the unity-of-actuality formula, which, as we have seen, is applied not exclusively to action and affection, but to any items the same, but conceptually distinct. But such are sound and hearing, on this view, for while sound is mind-dependent, it is different in *εἶναι* from hearing; the sound, but not the hearing, may be piercing, the hearing, and not the sound, may be painful.

The argument from Aristotle's application of his Physics principle to sense and sense-object fails, then, because his Physics principle does not require the action

of the F to be posterior to its existence as F. And this is to leave open the possibility that 'the actual F' means 'the actually existing F', although the F will also have to be acting for the Physics principle to go through.

An argument may now be made, however, which purports to show this possibility to be closed in the case of ordinary affection. The concept of affection is such that F must exist as such prior to acting; if the F, then, is an agent in ordinary affection, 'the actual F' must mean 'the actually acting F'.

Ordinary affection, for Aristotle, is, more fully, an assimilation of a patient to an agent: the potentially F is made actually F by an agent already actually F - the cold, or potentially hot, e.g., is made actually hot by the already hot.¹² But in these cases, Aristotle's claim that the actuality of the agent is the same as, but different in *εἶδος* from the actuality of the patient, must apply, not to the actuality of the agent's (ostensible) potentiality for being F, but merely to the actuality of its potentiality for changing the patient. The hot thing's heating of the cold thing depends on the cold thing's being heated; but it must be hot prior to its action on the cold, in order to assimilate the patient to itself in terms of heat.

Now the importance of this observation is that perception, for Aristotle, is a species of assimilation: 'And that which can perceive is potentially such as the object of perception already is actually, as has been said; it is affected, then, not being like it, but having been affected, it has been made like it and is such as

that is' (DA II.5 · 418a3-6).¹³ This must suggest, then, that Aristotle's claim that the actual sense-quality exists only in being sensed pertains to the sensed sense-quality - the tasted flavour - and not to the sense-quality as such - flavour as tasted; for clearly an object must already have a flavour for a perceiver to be assimilated to it in respect of this flavour.¹⁴ If Aristotle's unity-of-actuality doctrine is not to be in conflict with his assimilation doctrine, then, he must be taken to be asserting the weaker version of that doctrine.

But this argument is not altogether compelling. For even on the stronger reading of the unity-of-actuality doctrine, there is a way in which the senser may be made like the sense-object, and a reason why Aristotle may have supposed this assimilation to be necessary for perception.

On the dispositional theory, even though flavour (say) does not exist as tasted apart from perception, it will generally be held to exist in physical objects nonetheless; for physical objects will have the power, based in further actual qualities, of stimulating perception. Indeed, to say that a physical object is flavoured will mean roughly that it has a disposition, based in certain actual qualities, for producing certain characteristic effects on percipients.

But if this is right, then there is a clear sense in which percipients may be assimilated to sense-objects in perception. Suppose e.g. that the actual basis of an object's power to produce a sweet flavour is F-ness. Then Aristotle's view will be that for perception of a sweet flavour to occur, the percipient must be made F by the object. This is not to say that the intentional object

of perception is F-ness. But Aristotle may believe that for a perceptual state to be of an object's sweet flavour, the actual qualities of the object, on which its power to produce perception of the sweet flavour is based, must be transmitted, coded or uncoded, to the percipient. Such a causal chain between object and percipient must exist, Aristotle would be saying, for perceptual events to be cognitive.¹⁵ If this is right - and evidence that purely physical properties of sense-qualities are transmitted in perception will appear later - then the stronger, dispositional version of the unity-of-actuality doctrine is not in conflict with Aristotle's assimilation doctrine.

DA III.2, then, is subject to both a stronger and a weaker reading. For the doctrine of DA III.2 is expressed in terms which are used variously in the corpus as a whole. And the evidence in the passage itself pulls in both directions. Nor can an argument based on Aristotle's doctrine that the action is in the patient, or that perception is a form of assimilation, break this deadlock; these arguments are not decisively in favour of the weaker view.

A careful consideration of Aristotle's view of the sense-qualities thus seems called for: if Aristotle is a non-dispositional theorist, the weaker view of DA III.2 will be compelling; and if he is rather a dispositional theorist, the stronger will be supported. And while a determination of Aristotle's view cannot guarantee the correctness of one's interpretation of DA III.2 - Aristotle is not always consistent - the question of his view must have independent interest.

(ii) Aristotle's Predecessors: Met.IX.3, Met.IV.5, DA III.2

Aristotle discusses his predecessors' views of the sense-qualities in various places. The passages we shall now consider are representative of those of Aristotle's arguments not explicitly directed against the Democriteans; his anti-Democritean arguments will be considered later. In each of these passages, as will be shown, Aristotle is best seen as arguing from a dispositional theory. On the basis of these passages alone, then, it is tempting to conclude that Aristotle is a dispositional theorist. But deducing Aristotle's true position from his treatment of opponents is fraught with difficulty. So at this stage of our discussion, such a conclusion can only be provisional.

But let us turn to these passages. In Met.IX.3 Aristotle is arguing against the Megarian view that 'a thing is capable of acting only when it acts, and when it does not act it is not capable of acting' (1046b29-30). If this is true, Aristotle says, 'nothing will be either cold or hot or sweet or in general perceptible unless people are perceiving it; so that the proponents of this view will have to hold the Protagorean doctrine' (1047a4-7) - the doctrine, according to Aristotle in Met. IV, that 'everything thought or imagined is true' (1009a8).

Aristotle's argument here seems to suppose a dispositional theory of the sense-qualities. For his conclusion that nothing will be sweet unless tasted

if powers exist only when actual requires that sweetness exist only as a power apart from perception. If sweetness existed as such apart from perception, then the Megarian view would at most imply that sweetness would not exist as tasteable apart from being tasted. On a non-dispositional view, after all, the sense-qualities are actual as qualities apart from perception, and so do not fall within the scope of the Megarian's claim.

Aristotle would have drawn the proper conclusion, one must suppose, if he were a non-dispositional theorist: the perceptible qualities exist as perceptible only when perceived. That he is not merely speaking loosely, of the qualities as such instead of as perceptible, is confirmed by his imputation of the protagorean doctrine to the Megarians: for if an object were sweet, but not tasteably sweet when untasted, then the truth of one's perceptions would not be guaranteed, but would depend on the objective nature of the object; to render the sweet quality tasteable by tasting it is not to render it sweet.

Met. IX.3, then, is best understood as supposing a dispositional theory. It is true that other, more complicated views of the sense-qualities might equally support Aristotle's conclusion: sensibility, e.g., is essential for the existence of the sense-qualities as qualities. But Aristotle's argument moves straight from the Megarian claim to his conclusion, suggesting that he take sweetness to be a power in a straightforward way. The simplest and most satisfying hypothesis about Aristotle's view here, then, is that it is dispositional.

Further evidence for this interpretation is to be found in Metaphysics IV.5. Aristotle closes this chapter, a refutation of the Protagorean doctrine that what is imagined is true, in this way: 'In general, if in fact the perceptible alone exists, there would be nothing without the ensouled things; for there would not be perception. Now it is no doubt true that neither the sensibles nor the sense-impressions would exist (for these are affections of the perceiver); but that the substrata (*ὑποκείμενα*) which make the perception would not exist, even without perception, is impossible. For perception is certainly not itself of itself, but there is something also besides the perception, which is necessarily prior to the perception; for that which moves something is by nature prior to that which is moved, and even if they are called these things with reference to each other, this is no less so ' (1010b30-1011a2).

Aristotle, here, is making a familiar point about the dependence or not of objects of sense on sensing. Only here he uses language, which, unlike the language of DA III.2, is not ambiguous, and forcefully suggests the dispositional view. If 'potential *αἰσθητόν* ' may suggest a sensibly qualified object not actually sensed, as well as an object not actually sensibly qualified, '*ὑποκείμενον* ', when contrasted with '*αἰσθητόν* ', must suggest only the latter. And if 'actual *αἰσθητόν* ' may suggest an actually sensed sense-object, as well as an actually existing sense-object, '*αἰσθητόν* ' must suggest only the latter. This passage, then, supports the view that the sense-qualities themselves, for Aristotle, exist only in being sensed.

It might be objected, however, that Aristotle's language here could be misleading. 'ὑποκείμενον', after all, is a relative term, and might be used of an actually existing sense-object relative to the actually sensed sense-object. So, too, 'αἰσθητόν' might be used to mean 'sensed object' rather than 'sense-object'. But if these points are taken, then we can no more deduce Aristotle's position from this passage than from DA III.2.

But this objection is not persuasive. Surely Aristotle's language could not, without violence, be construed as this objection requires.¹⁶ But even if it could, the case for the dispositional reading of this passage does not rest on terminological considerations alone. For Aristotle's argument for the claim that, if the αἰσθητά do not exist without perception, the ὑποκείμενα at least do, is not justified if these ὑποκείμενα are understood as objects endowed with unperceived, but otherwise actual, sense-qualities. For if perception is not 'of itself', and therefore requires an external cause-object, this is not to say it requires a cause-object with qualities like the percepts presented to sense; it would be enough for the cause-object to be some external ὑποκείμενον whose nature could be correlated in some way with these percepts. Aristotle's argument, then, is best taken as resting on a dispositional view of the sense-qualities.

If this is right, Metaphysics IV.5 would seem to support the dispositional interpretation. It is true that Aristotle only argues against a Berkleian view of the sense-objects, not for a Lockean or dispositional. Yet

Aristotle has been attempting to undermine the sceptical reasoning of upholders of both Berkleian and Lockean views of perception in this chapter - Democritus, after all, is explicitly cited in the main passage reporting the argument from illusion (1009a38 - b12) - so if he had held a non-Lockean view of perception, there is no reason to think he would not have defended this view explicitly. It is perhaps unclear what he would have gained by doing so, but so is it unclear what he gains by denying the Berkleian view.¹⁷

There is another passage in which Aristotle deals with his predecessors' views - namely, our own in DA III.2. Here Aristotle uses his unity-of-actuality doctrine, as will be recalled, to correct the claim of his predecessors that there is 'nothing either white or black without sight, nor flavour without tasting' (426a21-22). This claim, Aristotle contends, is true only of actual sense-qualities, not of potential sense-qualities.

This passage, it seems clear, is best understood on the stronger version of the distinction between potential and actual sense-qualities. For then Aristotle's aim would be to correct the reasoning of those arguing from the dependence of tastes as we know them on tasting to the absence of tastes in physical objects.¹⁸ True, he would be saying, physical objects do not have tastes as we know them apart from tasting; but they do have various different powers, based in real differences of the things, to produce the range of tastes as we know them; and these, too, are entitled to be called 'tastes' - 'tastes in potentiality'. On the stronger reading of DA III.2, then, Aristotle's point would be perfectly just and

intelligible.

This cannot be said, however, of his point on the weaker reading of III.2. For if Aristotle means to be arguing for the plainly actual existence of unperceived sense-qualities, against those who assert their actual existence only as perceived, his argument lacks all force. For the dispositional theorist would simply deny that, in Aristotle's sense, potential sense-qualities exist; and he would not be impressed, nor mollified, by the concession that actually sensed sense-qualities depend on sensing.

Nor is it plausible to suppose that, by means of the distinction between potential and actual sense-qualities, so understood, Aristotle hopes to sort out the confused reasoning of dispositional theorists. For only if someone had initially argued from the observation that tasted tastes depend on tasting, to the conclusion that tastes, as we know them, so depend, would Aristotle's observation have any point. But can we seriously believe that anyone could have drawn such a controversial and substantive conclusion from such a trivial observation? If these points are taken, then the argument of DA III.2 itself is best understood on the stronger version of the distinction between potential and actual sense-qualities.

These passages, then, all suggest that Aristotle is a dispositional theorist. They are not, however, conclusive. For Aristotle might not be expressing his true position in Met. IX and IV: in the first he may simply be assuming the dispositional position in order more forcefully to expose the folly of the Megarian view;

in the second, in order to gain support against the Protagoreans - support that would not otherwise be forthcoming from, e.g., the Democriteans. Nor can we simply deny the possibility in DA III.2 that Aristotle's predecessors did draw an unjustified conclusion from the dependence of sensed sense-qualities on sensing - or were taken by Aristotle to have done so - and so seemed to require Aristotle to set them straight. If this is right then we must turn to other sources for Aristotle's true view.

(iii) De Anima and De Sensu

Aristotle's discussion of the sense-qualities in DA and its continuation DS holds out the most promise for the resolution of our issue. For here, at least, Aristotle is speaking in his own voice. And as Aristotle's topic, in central chapters of these works, is explicitly the nature of the special sense-qualities, we should hope to find some evidence of whether he holds a dispositional account of them.

Unfortunately, however, it is difficult to draw any firm conclusions from Aristotle's discussions. This will emerge as the discussions in question are seen as amenable now to a dispositional, now to a non-dispositional reading. Our first subject will be Aristotle's discussion of the individual special sensibles in DA II. 7-11. This discussion will be seen to be compatible with both dispositional and non-dispositional views. Next we shall consider a passage in DA II.12 where Aristotle seems to argue for the dispositional view. But Aristotle's argument here, it will be claimed, even if concerned to show the dependence of sense-qualities on sensing, does not clearly support the dispositional over the non-dispositional view of the sense-qualities. And in any case, it will be suggested, Aristotle's argument here is best seen to be concerned with a wholly different issue.

At this point we shall turn to DS 3-5. There is a good case for the dispositional view in these chapters, both in Aristotle's introductory comments and in his actual procedure. But having stated this case, we shall see that Aristotle's discussion is also subject to a non-dispositional reading. If both of these readings are plausible, then DA and DS must fail to present us with a clear picture of Aristotle's view.

De Anima II.7-11

In DA II.7-11 Aristotle treats the individual special sense-qualities in turn. The dispositional interpreter will not expect to find much evidence for his theory here, for Aristotle's concern, as he later points out in DS 3.439a7-19, is with the sense-qualities as acting and actual: with their modes of operation and their nature as revealed to sense.¹⁹ Hence, statements of or references to the dispositional position are few: the project e.g. of classifying the different smells we are aware of (421a7-16) does not involve one in a consideration of the nature of smell apart from smelling.

Nevertheless, there does seem to be some evidence of the dispositional view in these chapters. Consider, for example, Aristotle's definition of colour in DA II.7: 'It is clear', he says, 'that that which is seen in light is colour. And that is why it is not seen without light; for this was the being of colour itself, to be capable of moving the actual diaphanous; and the actuality of the diaphanous is light' (419a8-11).

Here, it is true, Aristotle does not explicitly define colour as a power to stimulate sight, but rather only as a power to set light in motion. But Aristotle, in fact, seems to have the latter in mind, as he conveys in the rest of his discussion: 'There is a clear indication of this; for if one places that which has colour upon the eye itself, one will not see it. In fact, the colour moves the diaphanous, e.g. the air, and the sense-organ is moved by this when it is continuous'

(419a 11-15). It cannot be denied, then, that Aristotle defines colour by reference to its stimulation of the organ of sight, and hence suggests the dispositional position.²⁰

Aristotle's discussion of sound in DA II.8, however, goes even further in this direction. At 420a 3-4 Aristotle says that 'it is, then, that which can move air which is one because continuous as far as the organ of hearing which can sound'. Now elsewhere in this chapter Aristotle speaks at greater length of a vibration of the air as a mass, produced by a certain kind of striking of smooth or hollow objects against one another, as sound.²¹ The reference at 420a 3-4 to the organ, however, suggests that this vibration of the air must be considered to be sound as power; it is only when this vibrating air affects a percipient that sound as we know it - 'actual sound' - is produced. Sound as we know it, that is, exists only insofar as we are hearing, though the vibrations of the air which produce sound exist in the absence of perceivers. Indeed, later in DS (4.440b 28-29) Aristotle will say that sound has been treated as both potential and actual in this chapter in DA. If this interpretation is right, the stronger view of the distinction between potential and actual sound is thus supported here.

The appearance of these dispositional sentiments, one may think, suggests that Aristotle is a dispositionalist. For it would be hard to account for Aristotle's statements of the dispositional position in these passages if he were a non-dispositionalist. And although Aristotle refers

to the sense-objects in DA II. 7-11 without making explicit reference to perception, such reference may be taken to be implicit. After all, it would be cumbersome - and hardly necessary - for a dispositionalist continually to state his position.

It might now be objected, however, that Aristotle does not unequivocally assert the dispositional position in these passages. Consider the passage on colour. To say that the power of stimulating the appropriate sense is essential to a sense-quality is not to say that the sense-quality is reducible to that power. To be able to cut, for instance, may be essential to being sharp, but this does not mean that being sharp is just having the power to cut. Just so, to be able to stimulate sight may be essential to being coloured; but since being coloured may be something more than having the power to stimulate sight, colour may well exist, just as we know it, quite independently of this stimulation.

The passage on sound, if less obviously, is also amenable to a weaker, non-dispositional interpretation. Aristotle claims, it will be recalled, that it is 'that which can move air which is one because continuous as far as the organ of hearing which can sound' (420a 3-4). Here, too, Aristotle's view may well be that air vibrating as a mass, in a plain sense, and apart from perception, is sound as we experience it, but that to be such is also to have the power of stimulating the organ of hearing - and hence to be able to reach it.

It might be objected, however, that to have the power of stimulating the organ of hearing is not necessarily actually to reach, and stimulate, the organ of hearing - which seems to be Aristotle's requirement here. But even if Aristotle is insisting that to be sound is to stimulate hearing, we are still not compelled to accept the stronger interpretation of the distinction between potential and actual sound. For Aristotle will then be using 'sound' for 'actual sound'; and it is the interpretation of 'actual sound' that is at issue. If actual sound is just heard sound, then Aristotle's claim will be quite right, and will in no way imply that sound does not exist as such when unheard.

If these points are taken, Aristotle's discussion in DA 11.7-11 is compatible with both the dispositional²² and the non-dispositional hypothesis. It does not unequivocally support either hypothesis.

De Anima II. 12

In DA II,12,Aristotle's final account of special perception, the dispositionalist may find an argument which appears to support his position: if smell produces anything, Aristotle argues, it produces smelling - and only smelling. Two dispositionalist interpretations of Aristotle's claim, understood as analytic, may be formulated, one taking smell as an object-property, the other as the object of experience. But these interpretations, as will be seen, are not entirely free of difficulties.

Indeed, even tentative support for the dispositional view on the basis of this passage may well be misplaced. For the progression of Aristotle's discussion - his eventual revision of his original claim - suggests that his concerns here are empirical. A completely different interpretation of this passage may thus be offered; and on this interpretation, Aristotle's concerns are irrelevant to our own.

Aristotle opens his discussion with a question: can insensate beings be affected by the sense-qualities? In response he argues as follows: 'if the object of smell is smell, then smell, if it produces anything, produces smelling; so that it is possible for none of the things unable to smell to be affected by smell (and the same account also applies in the case of the others)' (424b 5-8). Aristotle produces another ground for this conclusion a few lines later: 'for neither light and darkness nor

sound nor smell does anything to bodies, but the things which they are in, e.g. it is the air with a thunderbolt which splits the wood' (b10-12).

Unless taken analytically - as a stipulation, in effect, that smell be taken to produce only smelling - Aristotle's argument is not good. For although his initial claim is justified - since the object of smell, by his principles, is the cause of smelling,²³ this object, smell, must produce smelling - his conclusion is not justified: that smell produces smelling does not mean it produces only smelling.

Understood as analytic, however, Aristotle's argument may seem open to two, dispositionalist interpretations. The first takes Aristotle to ground his stipulation, applied to the sense-qualities as powers, on the dispositional position. He would then be reasoning thus: since smell, apart from smelling, is only a power for producing perception of smell, its effect could only be the production of smell. Furthermore, Aristotle would be continuing, if smell produces only smelling, what smell is in - the actual basis of smell as disposition - does affect other bodies; hence the physical transmission of smells may be accounted for as well.

This interpretation, however, is far from convincing. For a dispositional view of the sense-qualities, it seems clear, does not provide a good basis for Aristotle's stipulation. True, if smell, on the dispositional view, is only a power for causing smelling, then its effect must be only smelling: the effect of what can produce F, so described, must be F. But the dispositional view is that

smell is only a power - not only a power for producing smelling. Hence smell, on the dispositional view, might easily be regarded as a complex power with various standard effects - as it is regarded by common sense.

But if the dispositional view of the sense-qualities does not support Aristotle's stipulation, nor does his stipulation support the dispositional view. For a non-dispositionalist might as easily make this stipulation. It is true that he would need to find a description of smelly objects under which they cause other bodies to become smelly; but for that, the matter or vehicle of the smell could serve. Hence on this interpretation Aristotle would be making an unjustified stipulation - and one which would suppose neither the dispositional nor the non-dispositional view of the sense-qualities.

If this reading is implausible, however, there is another. For Aristotle's argument might be understood as follows: if the object of smell is smell - and smell exists, as such, only as an object of smell - then smell must produce (and be one and the same as the affection of) smelling. Aristotle, that is, may be using 'smell' for what is called 'actual smell' in DA III.2. Smell, in this sense, would produce only smelling²⁴ (e.g. as the formal or final cause of smelling), for it would not exist as such except as the object of experience. So understood, Aristotle's argument would seem to support a dispositional view of the sense-qualities, for by calling the quality dependent on experience 'smell', and by thus denying that things are caused to have smells by smells, Aristotle would be suggesting that only insofar as we experience smells do they exist as we experience them.

But this interpretation might be disputed. True, we may make Aristotle's argument sound by taking 'object of smell' and 'smell' to stand for what he elsewhere calls 'actual object of smell' and 'actual smell'; but we cannot justifiably suppose that the stronger, dispositional interpretation of 'actual sense-object' is at work here. Aristotle's use of 'smell' for the implied 'actual smell' is not decisive: if it entitles us to conclude that smell-as-we-know-it exists only in experience, then his use elsewhere of 'smell' for potential smell must entitle us to conclude that smell-as-we-know-it exists independently of experience. But on the trivial interpretation no less than the dispositional Aristotle's argument is sound. Hence this interpretation cannot be ruled out of court.

One must, then, confess that the weaker interpretation of Aristotle's claim is possible. But one may also insist that the dispositional interpretation is the preferable. It is more natural, in view of Aristotle's language. More important, it makes better sense of Aristotle's question: are insensate beings affected by the sense-qualities? For on the trivial reading, this question amounts to the question of whether sensed sense-qualities ever characterize insensate beings. On the dispositional interpretation, on the other hand, Aristotle's procedure may be obliquely to suggest the dispositional view of the sense-qualities, and to suggest what that means: 'Are insensate beings affected by smells? No, for smell exists only as an object of experience'. If this is right, the dispositional interpretation seems the better, though it is not compelled by the text.

Unfortunately, Aristotle's procedure in the rest of this chapter suggests an entirely different reading of his task. For by the end of the chapter, as has been pointed out, Aristotle rejects his conclusion that only sensate beings can be affected by sense-qualities. Tangible objects and flavours certainly affect other bodies, he says, and even sounds and odours affect indeterminate and inconstant bodies like air (424b12-18).

Now Aristotle's initial arguments in this passage, it is true, might lead one to believe that he is entertaining the idea that sense-qualities as we know them exist only in experience. But if this is right, then Aristotle's renewed questioning of the effects of sense-qualities on bodies, if his language is consistent, must be understood to be concerned with whether, in fact, inanimate bodies have experiences and hence are qualified in some way by sense-qualities as we know them.²⁵

But since this is most implausible, to preserve this line of interpretation one should have to say that Aristotle suddenly, and without comment, reverts to using the sense-quality terms of the sense-qualities in potentiality. And this, too, would be an unfortunate view of Aristotle's procedure.

Moreover, there is no need to see such inconsistency in this passage. For throughout this passage, Aristotle's concern might be whether any of the sense-qualities is what might be called a 'double-power': both cognizable and causal in other ways. This question, asked first of smell and colour, is not altogether farfetched: honey, after all, does not make the bee sweet or golden.

If this is right, Aristotle's initial assertion that smell causes only smelling - 'and the same for the others' - would amount to support for the single-power view of the sense-qualities. And his further questioning would then force him to reject it: surely tangible properties and flavours must affect other bodies, for what else could they be affected by (424b12-13)? Indeed, the single-power hypothesis is also inadequate to the sense-qualities which pervade the atmosphere: smells make the air smell, and sounds make confined air sound (b14-16). Even colour, Aristotle might have added, has an effect on mirrors. Hence the sense-qualities, he would conclude, do have causal effects apart from the production of perception.

Even if this precise interpretation is not accepted, however, some consistent interpretation of this passage must be possible. For Aristotle is clearly asking an empirical question at the end of this chapter: do physical entities affect each other in virtue of their sense-qualities? And this makes it reasonable to suppose that he is also asking this question at the beginning of the chapter. But this question is obviously irrelevant to the issue of whether the sense-qualities are to be given a dispositional or non-dispositional analysis: both analyses are compatible with Aristotle's answer to this question.

De Sensu 3-5

In DS 3-5, unlike DA II.7-11, Aristotle's concern is with the sense-qualities as potential, not as actual. The dispositional interpreter, then, may hope to find Aristotle stating and elaborating a dispositional theory here. And, indeed, Aristotle's principal aim in these chapters is to uncover the mixtures of tangible qualities to which the other special sensibles must be set down. But though his procedure is thus suggestive of the dispositional view, it is also, as will be seen, interpretable non-dispositionally. These chapters, then, do not conclusively support either the dispositional or the non-dispositional interpretation.

The positive case for the dispositional interpretation receives firm impetus from Aristotle's introductory statement to his main task in De Sensu. For he notes that in DA it has been stated 'what the work of each of the sense-qualities is and what the acting is with respect to each of the organs' (DS 3 439a9-11). He then goes on to say: 'What, then, it is necessary to say any one of them is, for example, what colour is, or what sound or what smell or what flavour, and likewise concerning touch, must be investigated, and first concerning colour. Each, then, is said in two ways, in one as in actuality, the other as in potentiality. How then the colour in actuality and the sound are the same as or different from the senses in accordance with actuality, for example seeing and hearing, has been said in the works concerning the soul; what each of them must be to make the perception and the actuality, let us now say' (439a11-19).

Aristotle's introductory comments would seem designed to launch an investigation into the nature of the sense-qualities independently of our experience of them. They thus nicely suggest a dispositional view of the sense-qualities - and of Aristotle's notions of actual and potential sense-qualities. For if actual sense-qualities are sense-qualities as we experience them, potential sense-qualities, powers of physical entities to cause such sensations, then Aristotle's project may be seen - most plausibly - as an investigation into the physical features of entities that empower them to stimulate the senses as they do - into the physical bases, that is, of the sense-qualities as we experience them.

Indeed, this passage is not easily interpretable on the basis of the weaker version of the distinction between potential and actual sensibles. For if an actual sense-quality is an experienced sense-quality, a potential sense-quality, that very item apart from experience, then Aristotle's task of discussing the nature of the sense-qualities independently of our experience of them would hardly have point: they would clearly be just as we find them in experience.

If Aristotle's introductory comments suggest the dispositional view, so do the subjects of his treatment: colour, flavour and odour. For along with sound, which has been sufficiently discussed in DA II.8 (see DS 3 . 440b28-29), these are the four sensibles of which we should expect a dispositional analysis. The common sensibles are never suggested to be sense-dependent, or subject to a distinction between potentiality and actuality. Nor are the tangibles, perhaps for scientific reasons: the

tangibles, for Aristotle, are the distinguishing properties of the elementary bodies, and the key to an explanatory science of physical processes and objects.²⁶ Indeed, they seem, as will be seen, to provide the physical ground of the special sensibles themselves.²⁷

This interpretation of Aristotle's programme for DS 3-5 seems to be well borne out by its execution. Aristotle's definitions of flavour and odour are especially clear on this. For unperceived flavour, he seems to say in DS 4, is nothing more than the percolation, in certain proportions, of the moist, by the aid of heat, through the dry and earthy (441b19-21). Likewise, unperceived odour seems to be nothing more than the percolation of air or liquid through a flavoured substance (DS 5, 443a8-9): insofar as air and water dissolve and absorb the flavoured dry (a1-2) they are objects of smell.

In these passages, one might think, Aristotle is best seen as identifying the physical correlates of the experienced qualities of flavour and odour. A thing which instantiates such mixtures of tangible qualities thereby has flavour and odour in potentiality - the powers to yield perception of taste and smell as we know them.

Indeed, as if to reinforce this suggestion, Aristotle immediately describes the qualities so analyzed as productive of the qualities given in experience: 'And this is flavour, that which comes to be by the aforesaid dry in the moist, an affection which is productive of the alteration of taste in accordance with potentiality into activity; for it leads that which can perceive into this

which belonged beforehand in potentiality; for perceiving corresponds not to learning but to contemplating' (441b22-26). So, more briefly, on odour: 'smell would be the nature the flavoured dry assumes in moisture, and the smellable is of such a kind' (443a8-9).²⁸

If this interpretation of Aristotle's definitions is right, Aristotle would indeed seem to hold a dispositional view of certain of the 'special sensibles. For at least odour and flavour as we know them would come into existence, as such, with our perception of them. For moisture percolated through the dry and earthy would not be flavour as we know it, but a certain mixture or qualification of tangible qualities; and the object of experience, taste, would be qualitatively different from this physical quality: though, when we perceive taste, we may be aware of certain tangible qualities, e.g. moistness, we do not say that we taste these qualities per se, and we are not aware of these qualities as constituting the taste. But if the actual and potential qualities were specifically the same, we should know, e.g., that the sweet consists of a high proportion of heat, and so on.²⁹

This view of Aristotle's analyses of the sense-qualities is reinforced by his procedure elsewhere. In GC II.12,³⁰ for example, Aristotle derives the fine, coarse, viscous, brittle, hard and soft from the moist and dry - acted on, as Joachim explains in his notes (p.208), by the hot and cold. But these derived qualities, for Aristotle, would seem to be species of the primary: brittleness, for example, would seem to be a kind of

dryness, viz. the completely dry (330a6-7). If Aristotle's procedure in DS is the same, then he is also setting flavour and odour down to kinds of tangible quality; and since flavour and odour, as experienced, are qualitatively different from any such tangible qualities, they must be understood as powers of an object, grounded in these tangibles, to produce perception. And this is precisely the dispositional view.

Unfortunately, however, if DS 3-5 is amenable to a dispositional reading, it is also amenable to a non-dispositional. Both Aristotle's introduction to his task and its execution are re-interpretable in a non-dispositional manner. And some additional evidence, as will be seen, further supports this re-interpretation.

Aristotle's introductory comments to DS(3.439a7-19) suggest as his task the investigation of sense-qualities as they exist apart from experience. But this task, it may seem, would have point even if the sense-qualities, unperceived, are just as they are when perceived; for they are also much else of interest to the scientist. Unheard sound, for example, may be sound as we hear it, and not just the material conditions for the existence of sound-as-sense-impression; yet it has material conditions itself which the scientist must wish to investigate. Such an investigation, in particular, would be of great help in the attempt to understand the mechanisms of the production of perception (439a18-19).

If this is right, Aristotle's introductory comments need not be taken to suppose a dispositional theory of the sense-qualities. For his aim may be to produce a causal

or scientific analysis of the sense-qualities, non-dispositionally understood. Nor, on a non-dispositional view, would his reference to the distinction between actual and potential sense-qualities (a15-19) be inapposite: the causal conditions of the sense-qualities, after all, are not part of the content of experience, and so belong to an investigation of the sense-qualities as potential.

But let us attempt to give this suggestion more substance. Aristotle's descriptions in DS 3-5, we may suppose, are descriptions not of the sense-qualities themselves, but of the conditions necessary for the sense-qualities, just as we find them in experience, to exist in objects. Aristotle may be claiming, that is, that when the moist, with the aid of heat, is percolated through the dry and earthy, then flavour, as we know it, comes to exist. Such a percolation, after all, is said to 'render the moist of a certain quality' (441b21); and we may suppose this quality to be flavour itself. In the same way, air or moisture percolated through the flavoured dry may be meant to acquire the quality we know as smell; this, we may suppose, is precisely the 'nature' the flavoured dry assumes in the moist (443a8-9).

Aristotle's definition of colour perhaps suggests this sort of analysis most strongly. For Aristotle defines colour as 'the limit of the diaphanous in a bounded body' (DS 3, 439b12-13). White and black are to be accounted for by the presence or absence of fire or some 'celestial body' therein (418b12-13, 439a21-22); and the intermediate colours by the mixture of white and black in certain proportions (440a34- 440b26).

Aristotle's definition of colour, it would seem, suggests that colour, as we know it, literally covers the surface of an object. The transparent element in the bounded body serves as the matter of the colour, and the effect of the presence of something like fire therein just is the colour. It is not, that is, that colour is some sort of determination of a tangible (like heat), but that it exists in the world just as we experience it. Aristotle, if this is right, would not be reducing colour to some more basic quality, but would be giving a causal account of it, citing its material and efficient causes.

It appears, then, that a non-dispositional interpretation of DS 3-5 is possible. This interpretation is further supported by Aristotle's treatment of his predecessors in DS 3-5.³¹ For Aristotle presents his own view as a correction of their views, and their views seem to be causal explanations of the genesis of the sense-qualities.

One theory of the flavours, for example, says that water is a matrix for the flavours, which exist potentially in different parts of it (441a7-9). But this can hardly be the hypothesis of a dispositionalist about what flavour must be apart from perception in order to yield our different perceptions of flavour. It must rather be the hypothesis of a scientist about how the different varieties of flavour came to be. Aristotle's own theory, then, as a correction of such a view, would seem also to be an attempt to give a causal analysis of flavour and its varieties.

Finally, external support for this view may be observed in De Anima. For here Aristotle seems to suggest that the sense-qualities are in the bodies cited in the De Sensu analyses as in matter. At DA II. 9.

422a6-7, e.g., Aristotle says that 'smell belongs to the dry, just as flavour does to the wet, and the organ which can perceive smell is potentially such'. And in the chapter on flavour, DA II.10, Aristotle says that 'the body in which flavour resides, the object of taste, has the moist as its matter' (422a10-11). This fact is later connected with the conditions for the production of the perception of flavour: 'Nothing makes the perception of flavour without moisture, but it has moisture actually or potentially, as for example salt' (422a17-19). And Aristotle points out further that 'since the tasteable is moist, it is necessary for its sense-organ to be neither actually moist, nor incapable of being moistened' (422a34-b2).

Now these passages of DA are important for two reasons. First, they reinforce the suggestion that Aristotle's analyses in DS are not of the sense-qualities into more basic qualities, but of the causal conditions of the sense-qualities - showing, as well, how such analyses are useful for explaining the production of perception (439a18-19). But, second, they also suggest that perception's objects are just such physical modifications of matter. For Aristotle's claim that the sense-organs must themselves be capable of instantiating the material conditions of the qualities might be thought to convey the view that the sense-organs take on physical replicas of the qualities themselves, which in turn serve as the immediate objects of

perception. In that case, of course, these modifications of matter, apart from perception, would be just as they are in perception.

But even if this view of the role of the affection of the organs is not right, the fact that Aristotle's analyses, on the evidence of DA, seem to be causal, suggests that the sense-qualities have an actual existence just as we know them apart from perception; and this clearly obviates the need for mental contents of perception, and overturns the idea that perception is immediately of qualities of a different category from those which they represent in the world.

DS 3-5, then, is readily adaptable to a non-dispositional interpretation. Nor is Aristotle's procedure on this interpretation without precedents elsewhere. For Aristotle sets down all manner of phenomena and entities to the interaction of the primary tangible bodies - life and death, nutrition, the genesis of the homoeomerous bodies ³² - without suggesting that they are therefore reducible to the primary tangibles. And just as life may have heat as a condition, without being a kind of heat, so flavour and odour may have tangible qualities as conditions, but may exist as we know them in bodies all the same. Aristotle's discussion of the sense-qualities in DS, then, may be given a clear and plausible interpretation on non-dispositional lines.

But the non-dispositional interpretation of DS 3-5, though plausible, is not compelled by our texts. For DS 3-5 itself, as we have seen, may readily be given a dispositional interpretation. And the additional evidence in favour of the non-dispositional

interpretation is merely suggestive, not conclusive. The fact that Aristotle's predecessors' theories would not seem to be dispositional, for example, does not guarantee that Aristotle's is not as well; his theory of the soul in De Anima, for example, is not obviously³³ of the same kind as his predecessors' (DA I).

Nor are Aristotle's references in DA to the tangibles as the matter of the other special sensibles decisive. The moist, e.g., might be so as the physical correlate of flavour understood as actual; or it might be so as the genus of flavour understood as potential.³⁴ Similarly, the tongue might need to become moist to enable the sense of taste to receive a physical property as a taste - not to receive a physical instance of taste itself.

But if this is right, then our consideration of DS 3-5 can yield no firm conclusion as to Aristotle's view of the sense-qualities. For these chapters may easily be understood on both the dispositional and the non-dispositional view.

(iv) Aristotle's Criticisms of the Democritean Theory

Aristotle, one may think, certainly has the materials and motives for a dispositional theory. For in DS 3-5 he seems to envisage the possibility of producing physical correlates for every species of the relevant special sense-qualities³⁵ correlates which could account for our perception of these qualities. And since there is no evidence that they could not also account for the other causal phenomena connected with the sense-qualities, Aristotle would seem to have scientific grounds for accepting the dispositional theory: the superfluity, for explanatory purposes, of the physical existence of the sense-qualities as we know them. Yet Aristotle does not clearly dispense with their physical existence, and, thus, as we have seen, DS 3-5 may be given a non-dispositional reading.

If Aristotle thinks a dispositional theory is scientifically possible, but has philosophical objections to one, we should expect to find his objections in his criticisms of the Democritean theory, a classic version of the dispositional view. The Democriteans hold that the secondary or special sense-qualities are based on the figures, sizes, and turning of the atoms constituting a thing.

As Aristotle puts it, they say that 'there is no colour - for by turning things get coloured' (GC I.2. 316a1-2). 'Sweet, bitter, hot, cold and colour', then, are *νόμῳ* or by convention, for the Democriteans, while 'in reality' there are only 'atoms and void'.³⁶

Aristotle, as is well known, hotly rejects all atomisms.³⁷ Hence, he will not accept the scientific underpinnings of the Democritean dispositional theory. As we have seen, his own theory, if dispositional, bases the sense-qualities as dispositions on mixtures of tangible qualities of things. In considering Aristotle's arguments against the Democriteans, then, we must be careful to distinguish their target: Democritean theories in particular or dispositional theories in general. For if Aristotle's theory is dispositional, it could survive criticisms of the Democritean theory in particular - but not of dispositional theories in general.

Two passages will be considered in this section, DS 6. 445b3 - 446a22 and DS 4. 442a31-b28. The first, containing an attack on the Democritean theory, seems to betray anti-dispositionalist sentiments in general. But this suggestion will be seen to be misguided; DS 6 may well be only anti-Democritean in particular.

The tendency of DS 4 towards anti-dispositionalism in general, on the other hand, is rather harder to combat. For three of Aristotle's four arguments against the Democriteans, though interpretable as having only the local target, are perhaps best understood as objecting to dispositional theories in general. If this is right, the view that Aristotle is a dispositionalist must be seriously shaken.

DS 6. 445b3 - 446a22

In DS 6 Aristotle's question is whether a body's sensible affections - 'e.g. colour, flavour, odour, sound, weight, cold, hot, light, hard and soft' - are divided with division of the body (445b3-6). Aristotle entertains, and rejects, both an unqualified affirmative and an unqualified negative answer to this question; with the latter answer he connects the Democritean theory. Thus, his own answer is affirmative, but qualified. Although Aristotle's answer, and in particular his criticisms of the negative response, are suggestive of a non-dispositional view, it will be seen that this suggestion is misleading.

But let us turn to Aristotle's argument. First Aristotle shows the difficulty attending the bald claim that the sensible qualities are divided with their substrata: 'For each of the sense-qualities is productive of perception; for they are all called what they are in that they are capable of moving sense. So that it will be necessary for perception to be divisible into infinity, and for all magnitude to be perceptible' (445b7-10). The problem with the affirmative answer, Aristotle seems to be saying, is that it requires that infinitely minute objects should be perceptible, and hence that there should be infinitely minute increments of perception. But this is plainly against the evidence of experience.

If the bare affirmative answer to this question is implausible, the bare negative is even worse: 'for if it were not so, it would be possible for there to be a

body having neither colour nor weight nor any other such affection. So that it would be wholly imperceptible; for these are the perceptibles. The perceptible, then, will be composed of imperceptibles. But it must be composed of perceptibles; it is certainly not composed of mathematical. Further, by what we will discriminate or know these? By νοῦς? But they are not intelligibles, nor does νοῦς think of external things, except with perception.

'At the same time, if things are so, it would seem to give support to those positing atomic magnitudes; for the difficulty could be solved in that way. But atomic magnitudes are impossible; we have discussed them in the accounts concerning motion' (445b11-21).

In light of these difficulties, Aristotle proposes a qualified affirmative answer to his question: a body's sensible qualities are per accidens divided with the body;³⁸ but when informing very minute particles, they are then perceptible only potentially, not actually.³⁹ Aristotle's answer may seem best taken: non-dispositionally: a minute particle may be plainly red, for example, but simply cannot be seen as such until it joins with a larger red object. In fact, Aristotle's arguments against the alternatives might be thought clearly to show that he is thinking of the sense-qualities in a non-dispositional way.

The argument against the baldly affirmative answer, it is true, is not of decisive importance. But it is compatible with a non-dispositional account, so long as perceptibility is central to the definition of the sense-

qualities. And it is clear how Aristotle's own answer removes the difficulty raised by the unqualified answer: we may say that small particles, though coloured (say), are only potentially perceptible; hence we can affirm that the sense-qualities are divided with their substrata without admitting that we actually perceive such minute objects.

But it is Aristotle's second argument, against the unqualified negative answer, that is of crucial importance. Aristotle's worry about the negative answer is not that it requires that objects we see should be composed of objects we do not (and cannot) see, but that it requires that a large red object, e.g., should be composed of constituents which are not red. For though Aristotle claims that it is impossible that perceptibles should be composed of imperceptibles, he must be taken, by this, to mean the latter; for his own view, as we have seen, is just the former.

But if this is right, we must ask, in turn, why it should be mysterious that a large red object should be composed of constituents which are not red. This could only be thought mysterious, it might be suggested, if one took redness as we know it to inhere in the objects. For unlike, e.g., roughness of texture, redness, as we know it, is a simple quality; one cannot imagine it to be derived, in the way roughness is, by a juxtaposition of smaller elements which are not themselves of this quality. If the actual quality inheres in the

larger object, then so must it in the smaller. For, though it might disappear in minute objects, it must nevertheless exist in them; how, otherwise, could we explain its existence in the objects composed of these minute objects?

If the non-dispositional view of the sense-qualities thus gives Aristotle's argument point, the dispositional view surely does not. For there can be no mystery at all in how a macro-object might have the power to produce a sensation of red that a micro-object lacked: the idea of a complex power deriving from the interaction of other elements with other causal properties is a perfectly ordinary one.

Indeed, Aristotle himself connects the negative answer to his question with atomistic theories: the atoms of which ordinary objects consist might be alleged not to be individually coloured - not individually to have the power to stimulate sight; the object they constitute, on the other hand, might be alleged to be coloured by virtue of the sizes, shapes and figures of these atoms; working in conjunction, they enable the macro-object to stimulate sight. That Aristotle takes his difficulty to be genuine, and therefore answers his initial question affirmatively, thus suggests that he accepts a non-dispositional view of the sense-qualities.

But it is time to evaluate this account of DS 6 more carefully. For this account, though not implausible, may seem to misconstrue the constraints Aristotle's argument places on interpretations of him: DS 6 would in fact appear to be

incompatible only with certain kinds of dispositional theory, not with dispositional theories in general.

For consider, once again, Aristotle's own answer to his question: the sense-qualities are divisible with their substrata, but when very minute, they are only potentially, and not actually, perceptible. Now there is nothing in this account which requires Aristotle to hold that the sense-qualities thus divided are in a plain sense actual apart from perception. He might easily be claiming, instead, that the redness of an object which is per accidens divided with that object is nothing but the power to produce perception of redness. In the finely divided object, to be sure, this power will only be potentially actualizable; but one might still say that the power - and so the colour - exists in the small object; it is just prevented, by the insufficient mass of its bearer, from being actualized. If this is right, then Aristotle's view in DS 6, though incompatible with Democritean dispositional views of the sense-qualities, is not incompatible with dispositional views per se.

But if we cannot conclude to Aristotle's non-dispositionalism from his answer to his question in DS, there remains a serious problem with this interpretation of his answer. Why, if a dispositional theorist, should Aristotle have wished to claim that the special sensibles are divided with their substrata? If, as we have seen, those qualities are plainly actual as we know them apart from perception, then there seems to be a case for saying that they are divided with their substrata. But once the constraint that the qualities should be and behave as they

appear to is removed, why should it be insisted that they nevertheless do so? Aristotle's own answer to his question, that is, suggests that he accepts the reasoning which led him to reject the negative answer; and his susceptibility to this reasoning, if he is a dispositional theorist, has yet to be explained.

At this point, however, one must notice that Aristotle's original question is framed in terms of all the special sensibles - tangibles as well as non-tangibles. But as we have seen, Aristotle is inclined to give the tangible qualities a special place in his view of the world: not only are they necessary for the existence of any body at all (GC II.2), but they are also in some manner responsible for the existence of more complex bodies and qualities.

Hence, Aristotle's rejection of the possibility that minute objects are not qualified by the special sensibles may have to do with his insistence that bodies of any size are inconceivable without the primary tangible qualities. Indeed, it will be recalled that he poses as the alternative to a body's being composed of αἰσθητά its being composed of μαθηματικά - presumably such purely mathematical determinations as figure and size. But this, according to Aristotle, would be absurd; for the common sensibles, for Aristotle, are dependent sensible qualities; they cannot be imagined alone to qualify a body. Indeed, as we have seen, to be a physical and hence perceptible body a thing must first of all have the primary tangible qualities.

But Aristotle, it will be pointed out, seems to insist that the special sensibles in general are divided with their substrata; yet the consideration raised above

explains only why he should have insisted on this for the tangibles. If, then, the non-tangible sense-qualities on a dispositional view need not behave on dissection as they would appear to, we still require an explanation of Aristotle's position.

But Aristotle's science may furnish this explanation. For it may tell him that the mixtures of tangible qualities grounding the special sensibles as powers are themselves, in fact, divided with their substrata. But if so, then the powers so grounded will also be divided with their substrata, and even minute objects will have flavours and odours. On this suggestion Aristotle's insistence that all the special sensibles are divided with their substrata, although not conceptually required, would have reasonable grounds, viz. the facts as revealed by science.

If this is plausible, then the view that Aristotle's discussion in DS 6 is anti-dispositional in general must be rejected; for Aristotle's own position here is compatible with a dispositional theory, though not with a Democritean theory; and it may be motivated by scientific considerations, not a belief in the physical existence of the relevant sense-qualities.⁴⁰ This is not to say that Aristotle's theory here is dispositional. It is only to say that his theory cannot be determined from this passage, since this passage is interpretable on both the dispositional and the non-dispositional view.

DS 4. 442a31 - b28

In DS 4, unlike DS 6, Aristotle is engaged in a direct refutation of the Democritean theory. If Aristotle, then, is truly anti-dispositionalist in his view of the sense-qualities, one may expect his refutation of this particular dispositional theory to contain criticisms of the dispositional view in general.

Aristotle presents four arguments against the Democritean view. First, this view makes all the sense-qualities objects of touch; but then all the senses would have to be a form of touch, which is impossible (442a31-34). Second, it treats the common sensibles as special sensibles, but magnitude, figure, etc. are common sensibles, perceptible, that is, by more than one special sense (b4-11). Third, it reduces the special sensibles to the common, e.g. flavours to geometrical figures; but then taste, if it falls to taste first of all to perceive these common sensibles, would have to be the finest discriminator of them (b11-19). And, finally, it makes genera in which contrariety exists depend on a genus - shape - which does not exhibit contrariety; and genera in which limited species exist depend on a genus with infinite species (b19-21).

Aristotle's arguments, variously interpretable, are of unequal weight. His fourth, which is hardly compelling, need not detain us, for its application is clearly limited. His other three arguments, however, though interpretable as anti-Democritean in particular, seem best understood as

anti-dispositional in general. And although his first and third arguments, which will be considered in turn, may lack force, his second argument, understood as generally anti-dispositional, may be thought to carry some weight.

Aristotle's first argument may apply only to Democritean dispositional theories. For he may be arguing that the Democritean theory makes all senses a kind of touch in subscribing to the view that all the sense-qualities, founded in tangible qualities, act on the senses by means of contact; for sensing, in the case of every sensory power, is then a kind of touching. But it is hardly a requirement of dispositional theories in general that the affection of percipients occur by means of contact. So if this is Aristotle's objection, it is limited to dispositional theories incorporating an efflux theory of perception.⁴¹

There are more straightforward readings of this argument, however: the Democriteans make the unperceived secondary qualities tangible qualities of things; but if the unperceived secondary qualities are species of tangible quality, then the senses corresponding to them will be species of the power to perceive tangible qualities, i.e. touch.

Aristotle's argument, here, may have a local target. And his argument will be good, if the Democriteans conceptually reduce the unperceived secondary qualities to tangible qualities. If 'a is red' means 'a has such and such tangible qualities', then redness will be a species of tangible quality, and sight a species of touch.

On this interpretation, then, Aristotle is drawing a legitimate conclusion against the Democriteans, however unclear its force may be.

Aristotle's argument, however, may have a more general target. For the 'Democriteans make the unperceived secondary qualities tangible qualities' might more generally mean 'they deny that the secondary qualities as we know them exist in objects, and base our perception of the secondary qualities in tangible qualities of things'. Indeed, we have no evidence that the Democriteans were more precise than this, and so this interpretation is perhaps the better. But so understood, Aristotle's argument is not directed against the Democriteans alone; for his premiss is based on the dispositional hypothesis.

But nor is his argument then good. For his conclusion to go through, he must argue from the dispositional hypothesis to the conceptual reduction of the unperceived secondary qualities to their tangible bases: for then the unperceived secondary qualities will be species of tangible qualities. But the dispositional hypothesis alone does not justify this reduction: it asserts only that the bases of the secondary qualities are (e.g.) tangible.

If Aristotle properly construes his premiss, however, he is not entitled to his conclusion. For if 'a is red' means (roughly) 'a has power, based on such and such tangible qualities, of causing perception of redness', then redness will no more be a species of tangible quality than

tea's power to soothe sore throats is a kind of heat. Sight, then, will not be a form of touch, for it will not be correlated with a species of tangible property, but will have its own special object. Aristotle's argument, then, if directed against the dispositional position in general, is not strong. If this is his argument, however, he is unlikely to be a dispositional theorist himself.

If we turn now to Aristotle's third argument, we shall find evidence of similar reasoning. Aristotle's argument here is the following: 'These thinkers bring the special sensibles back to the common, just as Democritus does the white and the black; for he says the one is rough and the other smooth, and he brings the flavours back to the figures. Although it falls to none or especially to sight to know the common sensibles. But if, then, it falls rather to taste, and if it falls to the most delicate sense to discriminate the finest differences in each genus, then it would be necessary for taste both especially to perceive the other common sensibles and to be discriminative of the figures' (442b11-19).

Now Aristotle's argument here is not altogether straightforward. It is not clear, for example, whether he means that on the Democritean view taste, since its intentional objects, flavours, are based on figures, would in fact be the best discriminator of figures - without however, discriminating them as figures; or that taste would be the best discriminator of figures as figures. If he means the first, we are left with the question of why he thinks this is problematical. If he means the second, there is of course a clear problem, for we

manifestly do not possess a fine discrimination of shapes by taste - and the shapes we discriminate by the tongue are of course not the shapes grounding flavour.

Nevertheless, this second interpretation raises an important problem: why should Aristotle think that the Democritean thesis implies that taste would be a good discriminator of figure as figure? There would seem to be at least two possibilities here. The first is that Aristotle is relying on an unstated consideration from his physical science: since a common sense works through every sense, it is physically impossible that figures, acting on a sense in the way figures ordinarily do - viz. by contact - should fail to be perceived as figures. Then Aristotle's objection would be that this view, absurdly, would make taste into a discriminator of figures - which in any case is manifestly false.

If this interpretation is right, Aristotle's argument has only a local target, for we have no reason to think his scientific view applies to any but the common sensibles. And so Aristotle's own theory, if dispositional, would be immune from this criticism, for his own theory does not ground the special sensibles in the common.

But this interpretation of Aristotle's argument is perhaps implausible. For Aristotle never mentions such a scientific view. And such a view could hardly be based on a general principle, e.g. that the common sensibles must have their standard effects in all

circumstances: a miniature saw, even of the usual sharpness, need not be able to cut wood. So Aristotle's view here would be a substantive, empirical hypothesis. And his silence about it must count against this interpretation.

This suggests, then, that Aristotle's argument is based, not on a scientific consideration, but rather on a (confused) conceptual principle: the quality which causes perception is, as such, the intentional object of perception. Hence if the special sensibles are reduced to the common (or different) sensibles, then the special senses perceive the common (or different) sensibles as such. Why Aristotle should have thought this principle compelling must be a mystery. But if this is his argument, it is clearly generalizable to any version of the dispositional view which bases the special sensibles in other sense-qualities - as Aristotle's view, if dispositional, does.

So far Aristotle's arguments are both weak and variously interpretable. His second argument, unfortunately, also suffers from the second problem. On perhaps the best interpretation, however, it does not suffer from the first; for on this interpretation Aristotle's argument is strong - and also decisively anti-dispositional.

Aristotle's argument is as follows: 'Further, they treat those common to all the senses as special objects; for magnitude and figure and the rough and the smooth, and further the sharp and the blunt in things, are common to the senses, if not to all, at least to sight and touch. And that is why, concerning these, perceivers make mistakes, but concerning the special, they do not

make mistakes, for example, sight concerning colour and hearing concerning sounds' (442b4-11).

There are at least two general views of Aristotle's argument here. The first is not anti-dispositional in general; but it seems to be the weaker reading of his argument. According to this view, Aristotle is merely continuing his first argument: as the special sensibles are reduced to the tangibles on the Democritean view, so are the common; but figure, e.g., is perceived not only by touch, but also by sight. Hence the Democritean view must be rejected.

But this interpretation suffers from various serious difficulties. Principally, it is hard to understand what sense to give to the claim that the Democriteans reduce the common sensibles to the tangibles. Since the Democriteans make the special sensibles depend on figure, magnitude, shape, etc. - indeed, the tangibles referred to in the first argument might be thought to be these qualities - it is hard to imagine them reducing the common to the other tangibles qualities by making them powers of tangibly qualified things to yield perception of shape, etc. And even if Aristotle is imputing this view to them, it is hard to see why the powers based on the tangible qualities of things could not be powers to affect a common sense possessed by more than one special sense.

But surely Aristotle could not be imputing this view to Democriteans. Perhaps, then, his argument is to be understood as follows: since all bodies must be tangible - hot, moist, etc. - then if only the common sensibles actually qualify bodies, the common sensibles must be

tangible.⁴² Hence, his claim that the Democriteans make the common sensibles tangibles is to be taken: 'they must make them tangibles'; and they would 'be' tangibles in the sense that they would somehow be instances of heat and moisture themselves.

But if this is Aristotle's argument, it is clearly weak. For the Democriteans would surely withdraw their claim that the common sensibles alone qualify bodies if persuaded of the need for other sensibles. But this claim is necessary for Aristotle's argument to go through. For Aristotle's assertion that bodies qualified by the common sensibles must also have tangible qualities does not itself show that the common sensibles themselves must be these tangible qualities. They could rather simply co-exist in bodies with these tangibles. But if shape and heat, say, are thus distinguishable properties, shape will not be confined to perception by touch; it will also be perceptible, e.g., by sight. Aristotle's argument, then, cannot fairly establish that the common sensibles would not be common on the Democritean view.

This reading of Aristotle's argument, in short, lacks plausibility, and if there is another, it is to be preferred. But there does seem to be another. For, it will have been noticed, Aristotle does not say in his argument that the Democriteans treat the common sensibles as tangibles. He says, rather, that they treat the common sensibles as special sensibles. But the Democriteans are not likely to be attributing the common sensibles to some other genus of special sensible. Hence, we would do well to take Aristotle at his word:

the Democriteans make the common sensibles special objects of the several different special senses at once.

So understood, Aristotle might be thought to have an interesting and forceful argument against the Democriteans - and any other dispositional theorists as well. For his point here will be that the Democriteans must make the special sensibles as we know them creatures of the senses - that is, they must subscribe to a representative theory of perception. But if the special sensibles are mental entities, and the common sensibles are perceived through the special sensibles⁴³ - being determinations of them, as it were - then the common sensibles will be mental entities as well. There will, then, be no truly common sensibles - there will rather be, e.g., shape-as-felt (special to touch) and shape-as-seen (special to sight). And sight and touch, on this view, would not both be directly perceiving the very same property - the shape in the object.

Indeed, Aristotle's reference to the fallibility of perception of the common sensibles, the infallibility of the special senses' perception of their special objects,⁴⁴ may fortify this interpretation. For if, as on the dispositional view, both the special and the common sensibles were immediately mental items, then perception of the common no less than the special sensibles would have the right to be called always 'true': one would be infallible about the shape-as-seen no less than about the colour-as-seen; and sight would be the final, incorrigible authority on shape-as-seen no less than on colour-as-seen.

But Aristotle's view is that perception of the special sensibles differs from perception of the common in respect of its 'truth'.⁴⁵ And his view would have point if he subscribed to a direct realism as his theory of perception. For since we directly perceive the shape of an object by various senses, one sense can correct another about the object's shape; but since we directly perceive the colour of an object only by sight, sight is the final arbiter on the matter of an object's colour, and is incorrigible by any other sense.⁴⁶ Hence, Aristotle's citation of this claimed asymmetry between perception of the special and of the common sensibles as an argument against the Democriteans suggests that he takes the Democritean view to require the common sensibles to be mental items - a position he cannot abide.

If this view is correct, Aristotle's argument here is both reasonable and strongly anti-dispositional. For Aristotle, thus understood, is rejecting the dispositional view on the grounds that it requires a particular theory of perception, viz. a representative theory. This, indeed, has been the major argument of anti-Lockeans throughout the centuries. It is unfortunate, however, that Aristotle does not argue against this theory of perception itself - e.g. by invoking the veil-of-perception problem. Instead, he claims that it falsifies the facts - that is to say, his version of the facts. If our interpretation is right, nevertheless, Aristotle's version of the facts - his belief in our direct access to the common sensibles - sets him firmly against the dispositional view.

Doubts, however, must remain. For it is noteworthy that Aristotle nowhere in the psychological treatises explicitly addresses the question of mediation in perception. It is hard to imagine him answering such a crucial question - or at least a question that we take to be crucial - in such an obscure passage, and in such an oblique way. Nor, as has been noted, does he actually give reasons for his answer here. Indeed, there is even evidence that Aristotle is tempted by, or holds, a representative theory himself.⁴⁷ It is possible, then, that in his eagerness to overturn the Democritean theory, he is taking a position that, on consideration, he would reject. It is perhaps even more possible, given these difficulties, that we have been too eager to find an argument which appeals to modern sensibilities here, and that Aristotle is in fact offering us one of the arguments mentioned earlier.⁴⁸

As a whole, nevertheless, Aristotle's only sustained polemic against the Democritean view would seem to have a larger target: dispositional views in general. For Aristotle's arguments, on perhaps the best interpretations, are directed against features of the Democritean view shared by all dispositional theories. And although two of those arguments are not very strong, Aristotle is not likely to be a dispositionalist himself if he gives them credence. And the remaining argument, if Aristotle's, is both good and clearly anti-dispositional in general. Nevertheless, the conclusion that Aristotle is anti-dispositional in general must be made cautiously, for Aristotle's arguments are at least open to different interpretations.

Conclusion

Our investigation of De Anima and De Sensu has been designed to help us answer the question of whether Aristotle is a dispositional theorist. For while Aristotle's distinction in DA III.2 between sense-qualities in potentiality and actuality suggests the dispositional position, it is also susceptible of a weaker, non-dispositional interpretation.

Unfortunately, the evidence in DA and DS would also appear to pull in both directions. In his discussions of the sense-qualities in DA II.7-12, for example, Aristotle might be read as asserting a dispositional view - and undertaking in DS 3-5 to uncover the real basis of the powers to produce perception of the special sensibles. On the other hand, as we have seen, Aristotle's discussions sometimes seem to suggest that the special sensibles are actual as we know them apart from perception - and his analysis in DS 3-5 might then be a causal analysis of those very qualities.

Similarly, when Aristotle assesses his predecessors' theories of perception, he appears now as a dispositional theorist, now not. He argues against the Megarians and sceptics, for example, from the position of a dispositional theorist; but when he comes to consider the Democritean theory, he seems to use arguments which could be turned against dispositional theories in general. True, the position Aristotle argues from in

refuting an analysis or theory may not be decisive, for that position may be only assumed for tactical or rhetorical purposes; but the position he argues against must surely not be his own. As we have seen, however, there remain doubts about whether Aristotle does wish to reject dispositional theories in general in DS 4, or only the Democritean view: for his arguments are subject to interpretative difficulties.

The idea that Aristotle is a dispositionalist himself is nevertheless unlikely. It is noteworthy, for example, that Aristotle does not take the precaution in his anti-Democritean passages of identifying a theory - his own - that is immune from his criticisms. Nor does he attempt to refute or at least minimize the appeal of the non-dispositional position. In fact, Aristotle nowhere makes a clear and simple statement of the controversial dispositional position - let alone a defence of it. These points, then, suggest that the basis for the dispositional interpretation of Aristotle's view is at least weak.

II. THE ASSIMILATION DOCTRINE

DA II.5 launches Aristotle's discussion of sense-perception. Here Aristotle's concern is to discuss perception in general (416b32). In DA II.6 Aristotle will discuss the objects of perception, and in DA II 7-11 each special sense individually; in DA II.12 he will return to a general characterization of sense-perception. DA II.5, then, along with DA II.12, would appear to give a formal, philosophical account of perception.

DA II.5 may be seen as a progressive refinement of the common view (416b33-35) that perception consists in the assimilation of the perceiver to the object of perception. At 417a2-14 Aristotle endorses - what his view implies - a causal theory of perception: since sense is first of all a power, it requires an external particular sensible to raise it to actuality; and this cause is the object of perception. And at 417a18 Aristotle more precisely characterizes the nature of causal interaction: it is an assimilation of a patient, unlike an agent before the change, to the agent (a17-20).

417a21-417b19 is the heart of this chapter. For here Aristotle aims, it seems, to characterize a kind of assimilation, distinct from ordinary physical change, to which perception conforms. He proceeds by distinguishing among kinds of potentiality and actuality - using knowledge as his example. In terms of this example he then identifies a kind of *πάσχειν* and *ἀλλοίωσις*, different from the ordinary, of which perception is a case. Aristotle's concept of the special kind of *πάσχειν* is clearly of crucial importance for understanding his assimilation doctrine.

If perception is a special kind of *πάσχειν*, however, it is still a *πάσχειν* or assimilation. Aristotle's summary of his chapter, following an account of the differences between perception and contemplation (b19-28), reaffirms this. For while he insists that we are driven to use '*πάσχειν*' and '*ἀλλοιοῦσθαι*' of such events as perception only because they have no special name (418a1-3), he nevertheless closes the chapter by stating the conformity of perception to at least certain features of ordinary affection: 'that which can perceive is potentially such as the object of perception already is actually, as has been said; it is affected, then, not being like it, but having been affected, it has been made like it, and is such as that is' (a3-6).

Our task in this chapter will be to attempt to understand what Aristotle's assimilation doctrine amounts to. For that it will be necessary, first (i), to consider in detail the passage in which Aristotle refines the concept of assimilation, and identifies a kind of which perception is a case. Having looked at this passage carefully, we shall then (ii) be able to entertain some views of what the assimilation doctrine tells us about perception. Unfortunately, it will be found, it is difficult to give the assimilation doctrine precise content: although the special *πάσχειν* of the perceiver would seem not to be physical, the view that it is cognitive lacks firm support. Linked with the assimilation doctrine, however, is Aristotle's form-without-matter doctrine; and this doctrine may provide the solution to the difficulties raised in this chapter.

(i) The Special Kind of Πάσχειν

DA II.5. 417a21-b19 divides into a number of sections. In the first (a21-b2) Aristotle distinguishes among different stages of potentiality and actuality: there is the knower in first potentiality who can acquire knowledge, the knower in second potentiality who has knowledge of grammar, and the knower in actuality who is contemplating or properly knowing this a.¹

In terms of this example Aristotle then embarks upon a classification of kinds of πάσχειν and ἀλλοιοῦσθαι (b5-16)². Having distinguished between ordinary πάσχειν, or 'a kind of destruction by the contrary', and special πάσχειν, or 'a preservation of that which is in potentiality by that which is in actuality', Aristotle cites the change of the second potential knower as an event which 'is not an alteration... or is a different genus of alteration'; 'for the development of the thing is into itself and actuality' (b5-7). Having elaborated on this point, however, Aristotle immediately claims that the change of the first potential knower also must not be said to be an affection, or we ought to say that 'there are two types of alteration, the change into the privative conditions and the change into the εἶς and nature' (b12-16). Finally Aristotle likens the perceptual power to knowledge in second potentiality, the perceptual act to contemplation (b16-19).

One's first intuitions about this passage must be that Aristotle's characterizations of both potential knowers' changes are to further his principal aim of

identifying a kind of *πάσχειν* distinct from the ordinary. On this view Aristotle's initial consideration of the different kinds of knower allows him to identify the different kinds of power whose *πάσχειν* is special (if also to establish one of the kinds as the model for the perceptual power). The persuasiveness of this view of the structure of DA 412a21-b19 - 'the parallel-structure view' - demands a consideration of the interpretations it yields, although these may prove to lack persuasiveness themselves.

Indeed, a different view of the structure of DA 417a21-b19 - the 'non-parallel-structure view' - may come to seem desirable. On this view, Aristotle's distinction between the two kinds of potential knower is in the service of his distinction between the two kinds of *πάσχειν* : for here the *πάσχειν* of the first kind of potentiality is ordinary, that of the second alone, special. This view, though not so intuitively plausible as the first, is nevertheless given some support by our text. More important, it may seem to make better sense of Aristotle's point in this passage.

Our procedure in this section will be to consider the interpretations yielded by the parallel and non-parallel-structure views in turn. The difference between these views may be summarized, more fully, as follows:

Parallel-Structure View

move from potentiality ₁ to potentiality ₂	one type of alteration, a special kind of <i>πάσχειν</i>
move from potentiality ₂ to actuality	a different genus of alteration, a special kind of <i>πάσχειν</i>

Non-Parallel-Structure View

move from potentiality ₁ to potentiality ₂	one type of alteration, <u>ordinary</u> <u>πάσχειν</u>
move from potentiality ₂ to actuality	a different genus of alteration, a <u>special</u> kind of <u>πάσχειν</u>

Let us turn at once, then, to the task of this section.

Aristotle's distinction between the two types of alteration (417b 14-16) is a convenient starting-point for interpretations based on the parallel-structure view of this passage. He characterizes the second, or special type of alteration as a change ἐπὶ τὰς ἑξέεις καὶ τὴν φύσιν. ἑξέεις are contrasted elsewhere in the corpus with both στέρησεις, lacks, and διαθέσεις, conditions³ - the two notions used to characterize the first type of alteration, a change ἐπὶ τὰς στέρητικὰς διαθέσεις. For 'ἑξέεις' may designate a possession, while 'στέρησις' designates a lack or privation. Hence ἑξέεις is contrasted with στέρησις as sight is with blindness. 'ἑξέεις', however, has further senses: in the Nicomachean Ethics, e.g., it is used of developed states such as knowledge and the virtues. And in Categories 8 Aristotle distinguishes ἑξέεις - used at least of the Ethics examples - from διαθέσεις: 'A state differs from a condition', Aristotle says, 'in being more stable and lasting longer' (8b27-28). States, such as knowledge and the virtues, are 'permanent and hard to change' (8b30), while conditions, such as hotness and chill or sickness and health, are 'easily changed and quickly changing' (8b35-36).

Aristotle's distinction between the two types of alteration, it seems, does not make use of both the $\acute{\epsilon}\xi\iota\varsigma$ - $\sigma\tau\acute{\epsilon}\rho\eta\sigma\iota\varsigma$ contrast and the $\acute{\epsilon}\xi\iota\varsigma$ - $\delta\iota\acute{\alpha}\theta\epsilon\sigma\iota\varsigma$ contrast. For not all privations are unstable and short-lived, and not all possessions stable and long-lived: a man may be blind for life; or he may regain his sight for a day. Nor, if the emphasis be placed on the $\acute{\epsilon}\xi\iota\varsigma$ - $\delta\iota\acute{\alpha}\theta\epsilon\sigma\iota\varsigma$ contrast, are all $\delta\iota\alpha\theta\acute{\epsilon}\sigma\epsilon\iota\varsigma$ privative and all $\acute{\epsilon}\acute{\epsilon}\iota\varsigma$ positive: a man may be in precarious health; but he may also be of a sickly constitution. Unless, then, we are prepared to understand Aristotle to be purposely excluding such cases - and for what distinction could that be required? - we must not attempt to find both of these contrasts at work here.

Two interpretations of Aristotle's distinction, then, are possible: the one depends on the contrast between $\acute{\epsilon}\xi\iota\varsigma$ and $\sigma\tau\acute{\epsilon}\rho\eta\sigma\iota\varsigma$,⁴ the other on the contrast between $\acute{\epsilon}\xi\iota\varsigma$ and $\delta\iota\acute{\alpha}\theta\epsilon\sigma\iota\varsigma$. We shall consider these interpretations - and the understanding they yield of our passage as a whole - in turn. The first will be seen to be weak, the second at least less so.

Aristotle's account of the two types of alteration, then, may depend on the distinction between a $\acute{\epsilon}\xi\iota\varsigma$ and a $\sigma\tau\acute{\epsilon}\rho\eta\sigma\iota\varsigma$; ' $\acute{\epsilon}\xi\iota\varsigma$ ' and ' $\delta\iota\acute{\alpha}\theta\epsilon\sigma\iota\varsigma$ ', after all, are not always opposed,⁵ so we may safely ignore their differences. The conjunction of ' $\phi\acute{\upsilon\sigma\iota\varsigma$ ' with ' $\acute{\epsilon}\xi\iota\varsigma$ ' to characterize the second type of alteration lends support to this possibility. For ' $\phi\acute{\upsilon\sigma\iota\varsigma$ ' may have the sense of 'form' or 'end'. Indeed, a change of a thing $\acute{\epsilon}\pi\iota\ \tau\acute{\eta}\nu\ \phi\acute{\upsilon\sigma\iota\nu$ is bound to be positive; nature, for Aristotle, is a

principle of good. To such a change, then, would be opposed a change that deprives a thing of a possession. The distinction between the two types of alteration, in short, would be similar to the distinction between changes *κατὰ* and *παρὰ φύσιν*.⁶

Aristotle's earlier characterization of the changes of the second potential knower - 'the special genus of alteration' - also seems interpretable along these lines. For a change described as a 'development of a thing into itself and actuality' (417b6-7) might be thought to be a change in the positive direction. 'Development' itself has connotations of progress⁷. So, more importantly, does the idea of a thing's becoming itself; for a thing's 'self', since nature is beneficent, must be good; hence the change of a thing into itself would be the advance of a thing into its best condition - surely a positive change.

Aristotle's concepts of the two special alterations, then, may be given a consistent reading. This reading, however, might quickly be found wanting. It suffers, first, from some minor interpretative difficulties. In his distinction between the two types of alteration, for example, Aristotle calls the first type a change *ἐπὶ τὰς στειρητικὰς διαθέσεις*, and not a change *ἐπὶ τὰς στερήσεις*. But '*στερήσεις*' is exactly the word wanted for this interpretation; Aristotle uses this word quite freely, and never uses '*στερητικὴ διάθεσις*' in its place.⁸ This seems to suggest that '*διάθεσις*' is not merely a place-filler here, and must be taken into account.

Moreover, the suggestion that the special genus of alteration is a positive change seems forced. A change of a thing into itself, it might be contended, is positive or negative depending on the thing's particular nature prior to the change; that man may be meant to be virtuous does not mean that a particular man may not be vicious, and hence, in acting viciously, may not then come into his own.

But even if these difficulties could be removed, a more serious problem afflicts this interpretation: it does not yield a plausible reading of Aristotle's distinction between the two kinds of *πάσχειν* (417b2-5). For on the basis of this interpretation, we shall have to understand ordinary *πάσχειν* to be a negative change, special, a positive.⁹

But this view is hardly convincing. It is true that Aristotle might have a motive for claiming only changes that debilitate or diminish a thing as proper cases of affection - namely, the negative connotations of '*πάσχειν*' (shared by the English 'suffer') which he himself notes in his glossary of terms (Met.V.21.1022b 19-21). But it is hard to imagine that he would have laboured so in our chapter to draw such an innocuous distinction. For Aristotle's aim here is finally to clarify the nature of perception, which has been called a '*πάσχειν*'. But his point then would amount to no more than this, that perception is not some evil that befalls us; it is not like being in a car accident.

If this interpretation is not plausible, however, another is available. For on the basis of Physics VII.3 we may understand a change ἐπὶ τὰς ἑξέεις καὶ τὴν φύσιν to be a perfection, and for that reason a special type of alteration. The argument of Physics VII.3 is as follows.

"Ἑξέεις of both the body and the soul are dispositions in virtue of which a thing is well or ill-disposed with reference to its proper affections: excellences or defects of a thing.¹⁰ But the acquisition of an excellence, Aristotle claims, is a perfection: 'for when a thing acquires its own excellence, then it is said to be perfect - for then it is especially in accordance with its nature' (246a13-15). And the acquisition of a defect is a 'destruction of or departure from this' (a16-17). But 'it is foolish ... if one says that the house, in receiving its coping and tiling, is altered but not perfected' (a18-20). Since the acquisitions of excellences and defects are perfections and departures we are entitled to conclude, according to Aristotle, that they are not alterations (b2-3).

Aristotle's characterization of the second type of alteration as a change ἐπὶ τὰς ἑξέεις καὶ τὴν φύσιν is perfectly in accord with this interpretation. For while in one sense a thing must always have a 'nature',¹¹ to be what it is, in another it only acquires its nature through the acquisition of ἑξέεις. For only thus does it fulfill its capacities, and hence both establish its peculiar nature and achieve the state 'especially in accordance with its nature' as a thing of its kind.¹²

Such changes, then, are flowerings or perfections of a thing, rather than mere undergoings. One might argue, moreover, that the first type of alteration comprises precisely the latter sort of change. In Cat. 8, it will be recalled, Aristotle characterizes *διαθέσεις* as what are 'easily changed and quickly changing': 'For a man is in a certain condition in virtue of these (hotness and chill, sickness and health, and the like), but he quickly changes from hot to cold and from being healthy to being sick' (Cat. 8.8b37-9a1). *Διαθέσεις*, then, are qualities short-lived and unstable; they are just the sorts of quality in virtue of which a thing is especially subject to the influence of external conditions.

Nor can they serve as the termini of perfections, even though, like the *σιάνθεις* of health, they might be desirable. For unlike *ἔξεις*, they are not properly excellences or defects. A man who changes frequently from health to illness and back has neither the virtue of good health - the resistance to bad and the susceptibility to good influences - nor the vice of poor health - the opposite liabilities. The virtue of good health and the defect of poor health, then, are by definition self-preservative states, and hence are relatively fixed and long-lasting. But the *διαθέσεις* of health and sickness are not so, and hence are not 'part of a man's nature and irremediable or very hard to change' (Cat. 8. 9a2-3). As such, the transition to a *σιάνθεις* is not a perfection, for, as we have seen, a perfection is the fulfillment or realization of a thing's nature.

This interpretation, however, seems to have a problem. For it requires that both types of alteration comprise both positive and negative changes; but the first type would seem to comprise only the latter ('στερητική'), the second only the former ('θύσι').

But this problem is not difficult of solution. First, a change to a negative ἔξις may perhaps count as a change ἐπὶ τὰς ἔξεις καὶ τὴν θύσιν : although for a man to become unjust is not a perfection of his nature as man, it may well be a perfection of his nature as this man.¹³ But even if this is implausible, Aristotle's omission of privative ἔξις may be understood as a mere oversight, for his example throughout this passage has been of a change to a positive ἔξις, viz. actual knowledge.

Nor does the characterization of the first type of alteration as a change ἐπὶ τὰς στερητικὰς διαθέσεις imply that it is a negative change. For while a ῥτέργσις in the technical sense is the privation of a positive quality ('form'), the term is also applied more generally to the denial of any quality, positive or negative. Any change, then, may be viewed as proceeding from a lack - of the quality eventually possessed - or as proceeding to a lack - of the quality originally possessed. As such, a change to a στερητικὴ διάθεσις may be understood as a change to a condition depriving a thing of its original condition, whether that condition was itself positive or negative.¹⁴ Indeed, διαθέσεις, as conditions unstable and short-lived, are just the sorts of quality likely to yield to deprivation.

If this is right, then Aristotle would seem to have an interesting distinction between ordinary and special alteration: while the first is a mere undergoing, the second is rather a perfection - whether in the positive or the negative direction. In suffering the first, then, a thing is merely batted back and forth between qualities of the same genus; while in suffering the second a thing progresses to a higher stage of actuality - and hence of being.

But does this interpretation of the two types of alteration yield an adequate understanding of Aristotle's further distinctions in DA 417a21-b19[?] It would, indeed, seem to provide an adequate understanding of the special genus of alteration of the second potential knower. For the description of a change as the development of a thing 'into itself and actuality' (b6-7) may then be taken to pick out an advance of a thing to a higher stage of being - as opposed to a change in the positive direction - and thus to accord with the notion of the second or special type of alteration.

Nor is this interpretation implausible: actuality is prior to potentiality in both formula and substance.¹⁵ And a change of a thing into itself may be seen as just a change - and hence an advance - into actuality: 'And it is possible for a thing which is in potentiality to be nearer to and farther from itself, just as the sleeping geometer is farther than the waking geometer, and this than the theorizing geometer' (GA II. 735a9-12). Aristotle's suggestion,

here, would seem to be that for a thing to be itself as an F is for it fully to realize its potentialities as F. A wit is not himself at a dull and formal meeting; but in the society of clever and amusing friends he comes into his own. Just so, a miser comes into his own in the company of his hoardings. The change of a thing 'into itself', then, may indeed be seen as development of a thing to a higher stage of being; such a change brings a thing into the condition most fully developed for its kind.

But the crucial test for the 'parallel-structure' view of this passage is whether Aristotle's distinction between ordinary and special alteration, so understood, can provide an interpretation of his distinction between ordinary and special $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$: 'a kind of destruction by the contrary' and 'a preservation of that which is in potentiality by that which is in actuality and like it thus as potentiality is to actuality' (417b2-5).

At first glance, this might well seem possible. For Aristotle's description of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ might then be understood to pick out such changes as the acquisition and use of knowledge, seen as perfections. Through all the knower's changes, after all, he remains a knower. The potential grammarian, for example, exploits and develops his aptitudes in becoming an actual grammarian, as an actual grammarian exploits and develops his knowledge when doing grammar.

But though in so doing he attains to a higher state of actuality, he remains a grammarian nevertheless: it is to a higher state of actuality as a grammarian that he attains. A cold thing which becomes hot does not in the same way remain cold. The special type and genus of alteration, then, in being perfections of a thing, seem also to be preservations of it. Perfection, after all, implies preservation: an improved house must surely remain a house.

A closer consideration of the concepts of special $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ and alteration, however, must remove the appeal of this interpretation. For one thing, to say a change preserves something is not to say it perfects it. But more important, to say a change perfects something cannot be to say it preserves it in the sense required for understanding the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$.

'Εξίς-acquisition and -use, then, cannot even be allowed to illustrate the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$. For if for an F to be made a more perfect F is for it to remain an F, for an F to be made (say) more F is also for it to remain an F: a warm thing is preserved as warm when it acquires a higher degree of warmth. In fact, any subject of a non- substantial change may be described in some way such that it is (in part) already what it becomes; everything, for example, is already of a quality generically like a quality it acquires.¹⁶ Hence, every such subject will be preserved under some description by its change, and if this is sufficient for a change to be a case of the special sort of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$, that category will embrace all manner of change - including, principally, cases of the ordinary kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$.

The concept of perfection, then, cannot help us to understand the notion of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$. In fact, perfections would seem rather to be cases of ordinary $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$; surely the ignorant man's acquisition of knowledge is a kind of destruction of his ignorance by the contrary, knowledge. Perfection is not incompatible with destruction; indeed, it requires the destruction of the imperfect; and $\epsilon'\xi\epsilon\iota\varsigma$ no less than $\pi\acute{\alpha}\theta\eta$ or $\delta\iota\alpha\theta\acute{\epsilon}\sigma\epsilon\iota\varsigma$ serve as contraries to the conditions they replace, even if $\epsilon'\xi\epsilon\iota\varsigma$ are sometimes of a higher order of being than those conditions.¹⁷

Our original intuitions about the structure and sense of DA II.5, 417a21-b19 have thus proved misleading. Aristotle's distinction between the two types of alteration seemed to match his distinction between the two kinds of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$; hence, at 417b12-16, Aristotle seemed to be citing $\epsilon'\xi\epsilon\iota\varsigma$ -acquisition, at 417b 5-12 $\epsilon'\xi\epsilon\iota\varsigma$ -use, as cases of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ - a view reinforced by his similar-sounding characterizations of these changes.

But this view must clearly be abandoned. For the acquisition of a $\xi\epsilon\iota\varsigma$ such as knowledge would seem to be a case of the first kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$, and not of the second. Hence, it is Aristotle's discussion of $\epsilon'\xi\epsilon\iota\varsigma$ -use alone that must elucidate the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$.

His distinction between the two types of alteration must apply within the class of ordinary $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$, and the similarities in his characterizations of $\acute{\epsilon}\xi\iota\varsigma$ -acquisition and -use must be seen as merely verbal, not substantive. If this is right, Aristotle's discussion of the different kinds of potentiality and actuality would have good point: the identification of the kind of power whose $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ is special, and hence a clarification of the distinction between the two kinds of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$.

Indeed, DA II.5, 417a21-b19 contains some suggestions strongly opposing the 'parallel-structure' view. Consider Aristotle's direct characterization of the acquisition and use of knowledge - the changes of the first and second potential knowers - at DA II.5, 417a30-b2: 'And both of these knowers, then, being knowers in potentiality, become knowers in actuality, but the one having been altered through learning and frequently changing from a contrary $\acute{\epsilon}\xi\iota\varsigma$, and the other in a different way, from having the arithmetical or the grammatical knowledge, and not being in act, into being in act'.

These characterizations, immediately followed by Aristotle's distinction between the two kinds of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$, are strongly suggestive of that distinction: the first potential knower, like the ordinary $\pi\acute{\alpha}\sigma\chi\omicron\nu$, changes from a contrary;¹⁸ while the second potential knower, like the special $\pi\acute{\alpha}\sigma\chi\omicron\nu$ and $\acute{\alpha}\lambda\lambda\omicron\iota\omicron\acute{\upsilon}\mu\epsilon\nu\omicron\nu$, changes into act ($\acute{\epsilon}\nu\acute{\epsilon}\rho\gamma\epsilon\iota\alpha$ or $\acute{\epsilon}\nu\tau\epsilon\lambda\acute{\epsilon}\chi\epsilon\iota\alpha$).¹⁹ On this basis, then, we should expect $\acute{\epsilon}\xi\iota\varsigma$ -use alone to illustrate the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ - and $\acute{\epsilon}\xi\iota\varsigma$ -acquisition to illustrate rather the ordinary.

The non-parallel-structure view of this passage has another justification. For one of the major reasons Aristotle introduces the two kinds of potentiality is to be able to specify the nature of the perceptive power: it is a potentiality of the second sort. As such, one would wish his discussion of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ to isolate a kind peculiar to things potential in the second way.

Nor is evidence lacking that Aristotle has something like this in mind. At DA II.5. 417b19, having noted that when that which perceives is born 'it already has perception in the way that it has knowledge ' (b18), Aristotle claims that 'actual perceiving is said similarly to contemplating'. DS 4 puts the same point in greater detail: flavour is that which 'can alter the taste in accordance with potentiality into activity; for it leads that which can perceive into this which belonged beforehand in potentiality; for perceiving corresponds not to learning but to contemplating' (441b23-26).

No doubt perception could be like contemplation, and not learning, even while both contemplation and learning were cases of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$. But DA II.5. 418a1-3 explicitly links the two sorts of potentiality with the question of kinds of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$: 'And since the difference between them (the two sorts of potentiality) is nameless, but it has been determined of them that they differ and how they differ, it is necessary to use being affected and being altered as the proper names'. Aristotle's point seems clearly to be that ' $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ ' and ' $\alpha\lambda\lambda\omicron\iota\sigma\theta\epsilon\alpha\iota$ ' must be used of the actualization of both sorts of potentiality, although they apply strictly only to that of the first.²⁰ Hence, the view that the

second kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ is illustrated peculiarly by the exercise of the second kind of potentiality receives further support.

This conception of the structure of DA II.5. 417a21-b19, if correct, frees us to focus exclusively on 417b2-12 for our understanding of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$. We may thus hope to arrive at a more interesting view of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ -one which may help us better to understand the nature of perception. For indeed, the most discouraging consequence of the alternative interpretation is its near uselessness for this purpose. For to say that perception, as a case of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$, is a perfection or heightening of actuality, when this formula applies to such diverse events as the improvement of a house and the growth of teeth, can hardly be to say much about perception.

We are required, then, to make a fresh start. And a promising new starting-point is perhaps suggested by Aristotle's puzzling preface to a brief consideration of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ in DA II.5 - a consideration which launches his elaborate discussion of potentiality and actuality and the two kinds of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$: 'First, then, let us speak as if being affected and being moved and being in act are the same thing; for, indeed, movement is a kind of activity, but incomplete, as has been said in other works.

And everything is affected and moved by that which can act and is in actuality. And that is why a thing is affected in one way as by like, in another as by unlike, just as we said; for the unlike is affected, but having been affected it is like' (417a14-20).

Aristotle's instruction to us to speak as if being affected, being moved, and being in act are the same might be thought to anticipate a conception of a kind of *πάσχειν* which is an *ἐνέργεια* - and fails, for precisely that reason, to be an ordinary *πάσχειν*. The pretence that these events are the same, then, allows Aristotle most easily to identify the features of an event that make it a *πάσχειν* (of some kind): its status as an assimilation to an agent which is in actuality what the patient is in potentiality, for example. And the pretence, though only a pretence, is both plausible and suggestive, one may think, because there is a kind of *πάσχειν*, later to be identified, whose distinguishing feature is its status as an *ἐνέργεια*.

This possibility seems to be confirmed by DA III.7: 'And it appears that the object of perception is that which makes that which can perceive, from being in potentiality, into activity; for it is not affected or altered. That is why this is a different form from movement; for movement is an activity of the incomplete, but activity proper is different, the activity of the completed' (431a4-7).

This passage clearly echoes our own. In DA II.5 Aristotle frequently characterizes changes in virtue of a

second potentiality, or cases of the special kind of *πάσχειν*, in a similar way: the thinker is led *ἐκ δυνάμει ὄντος ... εἰς ἐντελέχειαν* (417b10), the grammarian changes from having grammatical knowledge, *μή ἐνεργεῖν δέ, εἰς τὸ ἐνεργεῖν* (b1), and the theorizer changes *εἰς αὐτὸ ... καὶ εἰς ἐντελέχειαν* (b6-7). And Aristotle never characterizes changes in virtue of a first potentiality, or cases of ordinary *πάσχειν*, as changes into *ἐνέργεια* or *ἐντελέχεια*, even when he has said the change is of a thing *ἐκ δυνάμει ὄντος* (b12).

New to this passage, however, is a consideration of the perceiver's change in terms of the *ἐνέργεια-κίνησις* distinction. For if the change of that which can perceive is described here in language reserved in DA II.5 for the special kind of *πάσχειν*, it is also described as an *ἐνέργεια*, as distinct from a *κίνησις*. And if this change, denied to be a case of *πάσχειν* of the ordinary kind, as we must understand, is therefore also denied to be a *κίνησις*, then *πάσχειν* of the ordinary kind is clearly identified as a *κίνησις* here. But this is to say that an implicit connection appears in this passage between the special kind of *πάσχειν* and *ἐνέργεια*, the ordinary kind of *πάσχειν* and *κίνησις*.

If this is right, the *ἐνέργεια-κίνησις* distinction²¹ promises to shed light on the distinction between the two kinds of *πάσχειν*. A brief consideration of the former, then, would appear to be in order.

The distinction between *κίνησις* and *ἐνέπρεια* receives its most important treatment in Metaphysics IX.9. At the start of this passage Aristotle characterizes a *κίνησις* as an event which has a limit and is relative to an end, an *ἐνέπρεια* as an event which has the end present in it (1048b18-23). Aristotle then produces his famous, grammatical differentiation of *ἐνέπρεια* from *κίνησις* : 'For example, at the same time one is seeing and has seen, is understanding and has understood, is thinking and has thought, while it is not true that at the same time one is learning and has learned or is being cured and has been cured' (1048b23-25).

Aristotle's grammatical distinction between *κίνησις* and *ἐνέπρεια* is clearly related to his initial characterization of these events. Since the perfect tense of a verb is used to indicate that an activity has achieved its end, a *κίνησις* will clearly be described by a verb whose present and perfect tenses are incompatible, an *ἐνέπρεια* by a verb whose present tense entails its perfect tense.

NE X.4, emphasizing the completeness of *ἐνέπρεια* in contrast with *κίνησις*, brings this point home. For since a *κίνησις* takes time to complete and is relative to an end, Aristotle says, 'it is not possible to find a process at any time whatever complete in form' (1174a27-28); it is complete, rather, 'in the whole time' (a21), or 'when it makes that at which it aims' (a20-21). To undergo a cure, for example, is to pass through distinct stages of recovery until one's health has been restored. As long as the process is going on, some stage or stages

are yet to be completed; it is complete, then, only when completed. And so when one is being cured of something, one has not yet been cured of it; and when one has been cured of it, one is no longer being cured of it.

By contrast, an *ἐνέργεια*, as Aristotle says, is 'complete with respect to any time whatever; for it lacks nothing which coming into being later will complete its form' (a14-16). When one sees something, for example, one's capacity to see it is fully realized at every moment of the activity. There are no further stages of the activity which must be undergone to make the seeing complete, as there are further stages of a cure to be undergone to make the cure complete. An *ἐνέργεια* such as seeing, then, is complete throughout its duration, and as soon as it is true to say that one is seeing something, it is also true to say that one has seen it.

Aristotle's distinction has given rise to a measure of controversy. Some believe that his distinction applies to events-under-a-description. Aristotle's examples, unfortunately, do not then accord with his criteria: while it may not be possible to be walking and to have walked a mile at the same time, it is surely possible to be walking and to have walked at the same time. Likewise, while it may be possible to be seeing and to have seen at the same time, it is surely not possible to be seeing and to have seen a play at the same time. But according to this view, though Aristotle draws a perfectly good distinction, he simply fails to realize that the same action may be an *ἐνέργεια* or a *κίνησις* depending on its description.

Others, however, understand Aristotle's distinction to mark exclusive categories of event. They thus attempt to tie Aristotle's linguistic criterion more firmly to the nature of the events described. To build, for example, is always to build something - the base, the walls, or the roof of the house - as to walk is always to walk from somewhere to somewhere. Simply to say someone is building or walking is not completely to specify what he is doing. And once one specifies what one is building or where one is walking, Aristotle's linguistic point will go through; one cannot be walking to the Lyceum and have walked there at the same time. Conversely, one's seeing is always such as to require no time to be complete. While one may, indeed, see a light show, this 'activity' consists of individuable events - seeing this colour - which are themselves complete. A faithful description of an act, in short, will be such that it meets Aristotle's tense-criterion for the relevant kind of event.

Much could be said on this topic. One consideration in favour of the latter view is Aristotle's claim that ἐνέπρεια need not take place in time, and his connected point that adverbs of speed ('quickly', 'slowly') have no application to ἐνέπρεια. However we make out the notion of a description most faithful to an activity, or of an essential connection of a limit or end to some activities, but not to others, it seems that Aristotle, at least in some places, is primarily concerned to distinguish between activities that involve change and those that do not.²²

Indeed, Aristotle's examples of ordinary *πάσχειν* are clearly *κινήσεις*, so understood, his examples of special *πάσχειν ἐνέπρεια*.²³ To come to know the Pythagorean theorem is clearly to undergo a *κίνησις*, whose end - and stopping-point - is the possession of the knowledge. The process has heterogeneous phases, and it is not true that one is acquiring and has acquired that knowledge at the same time. On the other hand, to contemplate something one knows, say the Pythagorean theorem, is clearly to undergo an *ἐνέπρεια*. The end of the activity is the activity itself - the actual thought of the Pythagorean theorem - and this activity may continue indefinitely. The activity is whole in the whole and whole in the part, and hence it is true that one can be thinking and have thought of the Pythagorean theorem at the same time.

The activities of contemplation and perception, indeed, are Aristotle's favourite examples of *ἐνέπρεια*. Nor does Aristotle hesitate to characterize them in *ἐνέπρεια*-language in the psychological treatises. At DA I.3 407a32-33, e.g., he says that 'thinking would seem to be more like a kind of resting and halting than like a movement'. And in the premiss of an argument at DS 6. 446b3-5 he says that 'at the same time one hears and has heard and generally perceives and has perceived, and there is no coming to be of them, but they are without coming to be'. The technical sense of *ἐνέπρεια*, then, is not foreign to DA or PN.

While it may be interesting that Aristotle's examples of ordinary and special *πάσχειν* are, respectively, *κινήσεις* and *ἐνέπρεια*, are his characterizations of

the two kinds of *πάσχειν* such that their connection with *κινήσεις* and *ἐνέργειαι* may be seen? And do the concepts of *κίνησις* and *ἐνέργεια* shed any light on those characterizations? To answer this question we must now turn directly to Aristotle's distinction between the two kinds of *πάσχειν* : 'a kind of destruction by the contrary' and ... 'a preservation rather of that which is in potentiality by that which is in actuality and like it thus as potentiality is to actuality' (417b2-5).

Aristotle's characterization of the first kind of *πάσχειν* is plain enough, for it calls to mind his ordinary conception of *πάσχειν*. A *πάσχειν*, most generally, is a passive change, viz. one brought about by an external agent. But it is also, more particularly, an assimilation of a patient to an agent: the non-F, or potentially F, is made F by the actually F. Hence it is those things which 'involve a contrariety or are contraries' (GC I.323b30-31) which are such as to act and be affected.²⁴ And since the patient's assimilation to the agent involves its corruption - contraries, of course, are mutually exclusive - such a change might be fittingly described as a 'kind of destruction by the contrary'.²⁵

That the notions of ordinary *πάσχειν* and *κίνησις* should be connected is not surprising: ordinary *πάσχειν* is one of the three species of *κίνησις*.²⁶ And any change from state to state, whether these states be qualities, quantities, or places, will in fact meet the criteria for being a *κίνησις* as opposed to an *ἐνέργεια* : for the new state, as an end to be attained, sets a limit to the event.

In contrast to the first, the special concept of *πάσχειν* is peculiar to the psychological treatises, and hence does not admit of such easy elucidation by other texts. Aristotle says that the special kind of *πάσχειν* is a *σωτηρία μάλλον τοῦ δυνάμει ὄντος ὑπὸ τοῦ ἐντελεχείᾳ ὄντος, καὶ ὁμοίου οὕτως ὡς δύναμις ἔχει πρὸς ἐντελέχειαν* (b3-5).

A natural and straightforward interpretation of this formulation may at first seem possible: ϕ ing is a special kind of *πάσχειν* if, in ϕ ing, a patient does not lose the power of ϕ ing. The contemplation of *p*, for example, is an activity which preserves one's power of contemplating *p*; and this activity is 'like' the power in being the activity the power is correlated with.²⁷

But this interpretation may also seem to come to immediate grief. While it is no doubt true that certain powers are lost on their actualization - the soluble thing ceases being so upon dissolving - it is also true that most powers are not then lost. In particular, first potentialities for ordinary *πάσχειν* are preserved when in actuality: surely the warmable thing does not lose its capacity of being warmed on being warmed; and if the learner lost his power of learning on learning, we should all be doomed to ignorance. This interpretation of the special kind of *πάσχειν*, then, fails to distinguish it from the ordinary.

But this problem is easily accommodated. We have seen already that the process of, say, being warmed, is actually a process of acquiring some specific temperature, from having had some other temperature, and in a full description of this process the termini are included. Likewise, the capacity of being warmed is in fact a capacity of being warmed from some temperature T2 to some other T3; actuality, after all, is prior in formula to potentiality.

A capacity for a process, indeed, partly depends on the qualities a thing is potentially - for only these can serve as the ends of the process- and partly on the quality a thing is actually - for only this can serve as the starting-point of the process. Hence, anything T2 has a capacity of being changed in temperature only to those temperatures, if any, it is potentially, and only from that temperature it is actually, viz. T2. A full specification of a thing's capacity for a change at a certain time, then, must make reference to the qualities, initial and terminal, defining that change.

We are now in a position to see how an ordinary *πάσχειν* is not a *σωτηρία τοῦ δυνάμει ὄντος ὑπὸ τοῦ ἐντελεχεΐᾳ ὄντος*. When something is being warmed, it is being warmed from, say, T2 to T4. The activity of the capacity to be warmed from T2 to T4 initially involves the loss of the capacity to be warmed from T2 (and say the gain of the capacity to be warmed from T3); and it eventually involves the loss of the capacity to

be warmed to T4. In ordinary *πάσχειν*, in fact, capacities are continually lost and gained; they are not preserved.

The contrast with the special kind of *πάσχειν* is evident. Since a special *πάσχειν* is an *ἐνέργεια*, its activity is fully specified as a 'Ø-ing'; it simply is not an activity with termini. Hence the capacity for Ø-ing is fully specified as such, and the capacity is preserved on its exercise: contemplating the Pythagorean theorem does not deprive one of the capacity to contemplate it.

One might, however, object to this analysis of the loss or preservation of a power, and hence to this interpretation of the distinction between the two kinds of *πάσχειν*. For a thing warmed from T2 to T4, it might be argued, surely does not thus lose the power of being warmed to T4; it is simply not then in a position to exercise a power it still has. Similarly, a thing warmed from T2 to T4 surely does not thus gain the power of being warmed from T4; it is simply then in a position to exercise a power it already had. A change from T2 to T4, of course, might so enervate a thing that later warming it from T2 to T4 would destroy it; or it might so fortify it that it could later be warmed to temperatures which would before have destroyed it. And in these cases we would properly say that the *πάσχειν* lost or gained a power of being warmed from T_m to T_n as a result of its change. But such cases are also rare.

In short, if a thing can exist having a quality within a certain range of extremes, T2 to T4, then we rightly say it loses a power of undergoing any change between T2 and T4 only if that range is constricted, gains a power of being changed in Tness only if that range is increased. But on this showing, an ordinary *πάσχειν* must be allowed to preserve its power of undergoing its *πάσχειν* on so doing. For ordinary change from contrary to contrary does not, as such, deprive its subject of the potentiality of bearing those contraries, and hence of ever again changing between them; and any such deprivation would at best be incidental to the *πάσχειν*. So this interpretation of the distinction between ordinary and special *πάσχειν* cannot be allowed to stand; for the ordinary *πάσχειν* no less than the special preserves its power for a particular change as a result of that change.

But this objection is not compelling. No doubt one may legitimately distinguish between the changes a thing can undergo now, given its immediate condition, and the changes a thing can undergo at some time, given its constitution. But one may not legitimately deny - what is required to undermine this interpretation of the two kinds of *πάσχειν* - that the changes that a thing can undergo now are a matter of its powers - if only for undergoing those changes now.

Indeed, there is some reason to think that to have a power for ϕ -ing is most properly to be able to ϕ now - and not now to be able to ϕ at some later time.

Consider Aristotle's discussion in Met. IX.7 of when a thing is potentially F: 'If none of the things in this, i.e. its matter, prevents it from coming to be a house, and there is nothing which must be added or taken away or changed, this is in potentiality a house; and so also in the case of those other things whose source of coming into being is external' (1049a9-12). Here Aristotle seems to be suggesting that the immediate actualizability of a power is a condition of its present existence. Even a thing constitutionally capable of ϕ -ing, then, most properly has the power for ϕ -ing only if it can ϕ now without being changed; otherwise it is at best potentially potentially ϕ -ing.

In any case, so long as it is legitimate to identify powers on the basis of a thing's current condition - whether or not these powers must be specified more precisely as 'powers for ϕ -ing now' - it is also legitimate, indeed profitable, to distinguish between the effects of special and of ordinary $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ on a thing's powers. For while a thing does not lose the power of being made white ever again on being made white, it does lose the power of undergoing that event at that time. On seeing white, by contrast, a man does not lose the power of undergoing that activity at that time. A man can keep seeing white indefinitely, while a thing must stop being made white when white. And a man can immediately see white again on stopping, while a thing cannot immediately be made white again on stopping. These features of ordinary and special $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ are clearly related to their status as $\kappa\iota\nu\eta\sigma\epsilon\iota\varsigma$ and $\epsilon\nu\acute{\epsilon}\rho\pi\epsilon\iota\alpha\iota$.²⁸

If this is right, Aristotle would seem to have a good distinction between ordinary and special $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$: between changes which do and changes which do not deprive their bearers of the powers of undergoing those changes at the time of their completion. An ordinary $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$, as a kind of destruction by the contrary, is also a progressive actualization of the potentiality for that contrary. And the actuality of that potentiality deprives the thing of the power of acquiring it. In a special $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$, by contrast, the end of the activity and the activity itself are one. But since the activity thus lacks a limit, it is indefinitely continuable; and since it is its own reason for being, it is immediately repeatable.²⁹

We are now in a position to consider Aristotle's further characterization of cases of special $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$. He claims, it will be recalled, that when that which has knowledge comes to contemplate, it does not undergo an alteration, or undergoes a special genus of alteration, 'for the development of the thing is into itself and actuality' ($\epsilon\acute{\iota}\varsigma \alpha\upsilon\tau\acute{o} \dots \kappa\alpha\acute{\iota} \epsilon\acute{\iota}\varsigma \acute{\epsilon}\nu\tau\epsilon\lambda\acute{\epsilon}\chi\epsilon\iota\alpha\nu$ 417b6-7).

Aristotle's formulation of the special genus of alteration plays on the difference between a thing's changing into itself ($\epsilon\acute{\iota}\varsigma \alpha\upsilon\tau\acute{o}$) and its changing into an other ($\epsilon\acute{\iota}\varsigma \acute{\alpha}\lambda\lambda\omicron$, as in $\alpha\lambda\lambda\omicron\acute{\iota}\omega\sigma\iota\varsigma$). It also nicely captures cases of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ and excludes cases of the ordinary kind. For when a thing comes to be warmed from T2 to T4, though it doubtless changes into $\acute{\epsilon}\nu\tau\epsilon\lambda\acute{\epsilon}\chi\epsilon\iota\alpha$, it does not

change εἰς αὐτό ; for that, the act must coincide with the actuality or end. It rather changes εἰς ἄλλο - namely, into T4.³⁰ Hence ordinary πάσχειν or ἀλλοίωσις involves the loss of the power to change from T2 to T4; a thing does not have the power of immediately becoming an other which it has just become; and it cannot keep on becoming an other once it has become it.

On the other hand, when a thing comes actually to think a thought it develops both into itself and into actuality; for here the act and the actuality - the thinking and the thought - coincide; so the end of the act is not an other, but the act itself. Hence a man can immediately rethink a thought upon ceasing to think it: a thing does not lose itself, as such, on becoming itself. And he can keep on thinking the same thought: a thing can remain itself indefinitely.

If this is right, then Aristotle's characterizations of the special kind of πάσχειν and the special genus of alteration are clearly of a piece. And these characterizations also adequately identify a distinctive kind of πάσχειν or ἀλλοίωσις : one which is not a change. But so far the significance of Aristotle's concept of the special kind of πάσχειν or ἀλλοίωσις for our understanding of perception must be obscure. To that question, then, we must now turn.

(ii) The Refined Assimilation Doctrine

Aristotle's doctrine that perception is a case of the special kind of *πάσχειν* will be our concern in this section. Our first task will be to establish that the special kind of *πάσχειν* is, in fact, a special kind of assimilation. It will then be possible to consider two interpretations of Aristotle's refined assimilation doctrine. The first takes this doctrine to assert that perception is a special, though physical, assimilation of the sense-organ to the object of sense; the second, that perception is a special, cognitive assimilation of the senser to the object of sense.

But the first view, as will be seen, is open to serious criticism: a physical change, it seems, could not be a case of the special kind of *πάσχειν*; and even if some sort of unusual physical state could, there is no evidence in the corpus that such a state occurs in perception. The second view, although more plausible than the first, also seems to lack firm textual support. Nevertheless, the use of the refined assimilation doctrine in other connections at least recommends this interpretation, and its supplementation by the form-without-matter doctrine, suggested at DA III.4. 429a13-18, may in the end allow us to affirm it.

Our first question, however, is whether the special kind of *πάσχειν*, for Aristotle, is a special kind of assimilation; for it might simply be a *πάσχειν* in being an affection by an external agent, and not a *πάσχειν*, in the narrower sense of this term, in being a qualitative change.³¹ This question is not without

importance, for if the latter is the case, the special kind of *πάσχειν* must be understood simply as an event - of some unspecifiable kind - which preserves the subject's potentiality for undergoing that event - and not as an assimilation which does so. And to say that perception is the exercise of a capacity which is preserved therein is clearly not to say much about perception.

In his characterization of the special kind of *πάσχειν*, it is true, Aristotle says merely that the patient's potentiality is preserved in being brought to act - not that its potentiality for receiving some sensible quality is so preserved. Yet the emergence of the notion of the special kind of *πάσχειν* in a chapter in which '*πάσχειν*' is otherwise used in its narrow sense of 'change in quality'³² suggests that the latter is meant. And so does the progression of this chapter: for Aristotle's reiteration of the need to use '*πάσχειν*' effectively for the special kind of *πάσχειν* (418a1-3), it will be recalled, is immediately followed by the claim that in his *πάσχειν* - hence, surely, in his special *πάσχειν* - the perceiver, having been unlike the object of perception, is made like it (a4-6). Hence there is *prima facie* support for the view that the special kind of *πάσχειν* is a special kind of assimilation.

And this view would seem to be confirmed in an obscure passage at DS 2, 438b22-29. Here Aristotle is arguing that the organ of smell must in some way

be ascribed to fire; it is in the cold region of the brain, as we later learn, and so is potentially hot: 'for what the smelling is in actuality, this, in potentiality, is that which can smell; for the object of perception makes the sense into act, so that it must be what beforehand it was in potentiality' (438b22-25).

This passage strongly echoes Aristotle's language when he is characterizing the perceiver's change as the special kind of *πάσχειν*. At DA III.7, it will be recalled, Aristotle says that 'it appears that the object of perception is that which makes that which can perceive, from being in potentiality, into activity' (431a4-5). More impressively, at DS 4 he says that flavour is 'the affection which can alter the taste in accordance with potentiality into activity; for it leads that which can perceive into this which belonged beforehand in potentiality; for perceiving corresponds not to learning but to contemplating' (441b23-26).

In both these passages the link with the concept of the special kind of *πάσχειν* is clear. The first, as we have seen, amounts to a further characterization of the special kind of *πάσχειν* as an *ἐνέργεια*. And the second falls well into line with this: contemplating in contrast with learning, is the paradigm of both the special kind of *πάσχειν* and *ἐνέργεια*.

But if Aristotle, then, is attributing the special kind of *πάσχειν* to the smeller in DS 2, he is also unmistakably understanding that *πάσχειν* as the

assimilation of the smeller to the odour he smells. For as we have seen, Aristotle adduces the perceiver's affection as a justification for his view of the constitution of the organ of smell; and it could be a justification for this only if the smeller's affection is his assimilation to the object of smell.

If the special kind of *πάσχειν* is, then, a special kind of assimilation, what does the doctrine that perception is a case of the special kind of assimilation amount to? One's first thought must be that perception is a special physical change of the sense-organ; for throughout De Anima Aristotle seems to apply the assimilation formula to the sense-organ's changes.³³ If right, then, this view, whatever its other merits, also has the advantage of bringing Aristotle's applications of the assimilation formula to the sense-organs under the umbrella of his refined assimilation doctrine.

But can this view be made out? Clearly any ordinary change from contrary to contrary could not also be a case of the special kind of *πάσχειν*, for the concept of the latter receives its sense from its contrast with the former. When the non-F and potentially F becomes an F, that is, it is not only destroyed as a non-F, but it also loses its potentiality for being F; for the actualized F ceases to be an F in potentiality. Hence, the subject also loses its potentiality for undergoing this change; for this potentiality depends on the further - lost - potentiality of the subject for exhibiting the end of the change.

Once F, that is, a thing loses the potentiality of becoming F: it cannot keep becoming F, but must cease undergoing this change; and it cannot become F immediately again, for it already is F. But to be a case of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$, as we have seen, an event must preserve for the subject just this potentiality for undergoing the same event thereafter.

It might seem possible, however, for a physical reception of a quality, if not a destruction by the contrary, to meet the characterization of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$; and then Aristotle's assimilation doctrine could amount to the special assimilation of the sense-organs. If, say, the eye acquired redness, not by the corruption of its original state, but simply by the instantaneous supervention of redness on its translucent jelly, then this reception of redness might well be a case of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$. For the eye, if not corrupted, would in some sense remain translucent, and hence would preserve its original potentialities-in particular, the potentialities of so being red and thus of so becoming red. On having so become red, the eye could immediately become red again; and it could also keep becoming red. If this is right, then such a physical reception of a quality would indeed seem to be a case of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$.

An organ's reception of a sense-quality, so understood, would of course be curious. It is not clear, in fact, that it would be its assimilation to the sense-quality. For it is at least questionable whether a thing may properly be said to become F without losing its non-Fness. A mirror, it is true,

may receive a reflection of redness while in some sense remaining translucent; but to say the mirror becomes red must surely be to say, e.g., that it receives a red tint - and as such, it cannot remain translucent. If the sense-organs are to receive the sense-qualities in this special kind of way, then, they would not actually become physical bearers of them, one might suppose, but would stand to them in some other relation. If nothing else, then, this view is at least vague.

But even if the details of this view could be worked out, there seems to be no evidence for it in the corpus. Indeed, there is good evidence that the sense-organs, for Aristotle, are to be taken as ordinary physical bearers of the sense-qualities to which they are assimilated in the ordinary way.

Consider, for instance, Aristotle's repeated claim that the sense-organs, to be assimilated to the objects of sense, must be those objects in potentiality - and not in actuality. Clearly the rationale for this position is provided by the concept of ordinary assimilation, i.e. a kind of destruction by the contrary; for this would require the organ to exhibit a quality contrary to the one it acquires.³⁴ But if the organ's assimilation occurred without corruption, presumably its being F in the ordinary way would not prevent it from becoming F in the special.

Aristotle's lengthy discussions of the constitutions of the sense-organs argues for the same point; for there would be no need for an organ to be of the same genus as its sense-object, except to enable it to instantiate the different species of that sense-object. In fact, Aristotle's aim in attempting to correlate the matter of the sense-organs with that of their objects must be to establish that organ and object conform to the pattern required of ordinary patients and agents, viz. likeness in matter or genus, unlikeness in form or species.

There is further evidence of a different kind in Aristotle's ἀπορία at DA II.5, 417a2-6: why do the sense-organs not yield perception of themselves if they are constituted by the elements? For this would not be a genuine difficulty if the sense-qualities, when received in perception, were not borne in the ordinary way by the organs. But if they are, then they are also received in the ordinary way; for contraries are mutually exclusive.

If the change of the organ would seem to be an ordinary πάσχειν, it would also seem to be an ordinary change, i.e. a κίνησις. The changes of the media, except in the case of light, are explicitly asserted to be κινήσεις (446a22-447a12). The media are contiguous with the organs and, having been moved, move them in turn (DA II.7-11, DS passim). There is no suggestion that the change of the organs is, e.g., instantaneous. Indeed the movement of the organs, when excessive, is likened to a too-strong twanging of the strings of a musical instrument (424a30-32). In short,

the change of the organs seems to be of a piece with the change of the media - and not a case of the special kind of *πάσχειν* .

The view, then, that the sense-organs undergo a special assimilation to the objects of sense in perception is not supportable. This, indeed, might be thought to be a happy conclusion. For otherwise, according to Aristotle's refined assimilation doctrine, perception must be construed merely as a special change of the sense-organ which results in its mirroring the qualities of the world. But while a causal link between sense-object and sense, or a transmission of qualities from sense-object to senser, may be required for perception of those qualities to occur, this cannot be what perception in essence is.

Moreover, the proposed 'specialness' of this transmission must surely fail to correct this deficiency: if perception cannot be analyzed as the physical reception of the sense-qualities, nor can it be analyzed as the special physical reception of them; in either case, in principle, an inanimate entity could suffer such a change. Even if only sense-organs reproduced the sense-qualities in the special way, that is, surely this would be a contingent fact, and could not provide the basis for a conceptual or formal account of perception. But the refined assimilation doctrine, as we have reason to believe, is meant to be just such an account of perception.

If the special assimilation of the perceiver cannot be supposed to be physical, it seems natural to suppose that it is non-physical.³⁵ This supposition,

as will be seen, has the advantage over the physicalist of allowing us to understand Aristotle's assimilation doctrine as a conceptual account of perception. It also, of course, has the disadvantage of requiring some accommodation between Aristotle's refined assimilation doctrine and his doctrine of the ordinary assimilation of the sense-organs. But this problem is not unmanageable. More difficult is the lack of positive evidence for this view, although, amplified by Aristotle's form-without-matter doctrine, it may nonetheless prove deserving of support.

The view that the senses³⁶ - as opposed to the sense-organs - are assimilated to the objects of sense may be given a clear and intuitive reformulation: in perception we are cognitively assimilated to the objects of perception. A taster, for example, is assimilated to a sweet taste by, as it were, 'affecting' that taste, i.e. having it as the content or object of his awareness. A perceiver's becoming like ϕ , then, is his becoming aware of it. And the 'likenesses' he may be said in some sense to acquire would either be the object-properties he is aware of, or sense-impressions mediating his awareness of those object-properties.³⁷ But in either case, Aristotle's refined assimilation doctrine, so understood, expresses the view that to perceive is to become aware of a sense-object as such.

This interpretation of Aristotle's doctrine, it might be thought, is given some backing by the notion of a *πάσχειν* which is an *ἐνέργεια*. Aristotle's favourite examples of *ἐνέργεια*, as is well-known, are perception and contemplation. His refined assimilation doctrine itself, of course, is not that one can be seeing white and have seen white at the same time - even if we did not already know this or could learn from this what seeing white is. His refined assimilation doctrine is rather that the assimilation to a sense-quality of which perception consists is an *ἐνέργεια*. But since the models on which the concept of *ἐνέργεια* is based are the cognitive events of seeing and contemplating, and since the concept of *ἐνέργεια* is itself the key to explicating the notion of the special kind of *πάσχειν*, one might be justified in thinking that the refined assimilation doctrine is meant to assert a relation between the percipient or thinker and his cognitive objects, viz. his assimilation to them via awareness.

Clearly, in any case, under such an analysis perceptual events would conform to the desired pattern. For an event meets the criteria for being the special kind of *πάσχειν*, if it is, as it were, an assimilation which is immediately accomplished; the subject must have been assimilated to the item as soon as it is true that it is being assimilated to it. But this is precisely the case when the assimilation is cognitive: the sense-quality to which the perceiver is assimilated,

if the content or object of awareness, is not an end to be reached, but is immanent in the activity; object and act of awareness are simultaneous. As such, the subject does not lose the power of being assimilated in such a way on being so. Hence, for sense to acquire a sensible quality in this way is for it to undergo the special kind of *πάσχειν*.

The refined assimilation doctrine, so understood, would indeed seem to be a conceptual account of perception, and not just a physiological doctrine. Unfortunately, however, it seems difficult to find adequate support for it in the text. For to say that a perceiver's senses become like the sense-qualities is not, without further comment, to say that he takes these qualities as the contents of his mental acts. What would be required for this interpretation to be justified, then, is evidence that the likenesses (non-committally understood) which are acquired in perception serve as the contents or objects of awareness.

Unfortunately, however, there seems to be evidence neither for the likenesses serving as the contents of some act of awareness, nor, more importantly, for the existence of such an act of awareness. Aristotle, it is true, says such things as that that which perceives or understands, e.g. evil or blackness, 'must be its object potentially and ... the latter must be in it' (DA III.6.430b23-24). And so one might say that the perceiver perceives what he becomes actually. But while it is trivially true that the perceiver perceives what he becomes like (say Fness) - for his

likeness is a likeness of the object of perception - this is not to say that he perceives Fness by taking some likeness of Fness as the content of a mental act. And this cannot simply be assumed.

In the same way, Aristotle often adduces the inability of the organ to instance a sense-quality to explain the failure of the percipient to perceive: if the tongue is too full of bitter moisture, we cannot perceive sweetness (DA II.10. 422b5-10); if we are as hot as an object of touch, we cannot perceive its heat (II.11. 424a2-5); if we cannot be affected by whiteness and blackness simultaneously, nor can we perceive or discriminate them simultaneously (III.2. 427a5-9). And one might like to suggest here that the percipient cannot perceive Fness, if his organ cannot instantiate Fness, for he is not then presented with Fness as the content of some mental act - and hence cannot undergo the special kind of assimilation to Fness.

But this view, though it brings Aristotle's two assimilation doctrines together,³⁸ is clearly not justified. It is true, of course, that if the organ cannot become F, then perception of Fness cannot occur. But there is no evidence that this is because no likeness of Fness is delivered up to some more basic act of sensory awareness. The organ's assimilation to Fness, however construed, is at least a necessary condition of the perception of Fness, and so its failure will result in the failure of perception;

but this cannot tell us how to construe the organ's - still less the perceiver's - assimilation to Fness.³⁹

But the most serious shortcoming of this interpretation is that no concept of awareness appears in connection with this doctrine. For without a concept of awareness there is simply no reason to assume that the refined assimilation doctrine expresses something like the cognitive assimilation of percipient to object of perception, or his taking the sense-quality as the object of a mental act. Even if we can claim that the special assimilation of the percipient is non-physical, that is, we cannot claim that it is cognitive. Aristotle's view could be that there is some ghostly reproduction of the sense-qualities in the perceiver's soul; and this no more tells us what perception is than the view that there is a physical reproduction of the sense-qualities in the perceiver's sense-organs.

This view of the assimilation doctrine, then, though perhaps intuitively plausible, lacks firm grounding. Yet it is not without promise, for since it is less than specific, its final interpretation must rest on other features of Aristotle's philosophy of mind. One such feature is the application of the assimilation doctrine to the case of thought.⁴⁰ Here we find confirmation of the idea that the assimilation doctrine at least may have a non-physical application, as our investigation of the special kind of *πᾶσκειν* has required; for thought, of course, has no organ. We also receive further impetus for the cognitive-assimilation

view of this doctrine. For it is at least most natural to suppose that thought's affection by the object of thought consists in its reception of it as an intentional object.

Still, the strictures against loosely supported interpretations must apply in the case of thought no less than perception. Yet Aristotle perhaps provides the key to interpreting the refined assimilation doctrine in DA III.4, where he seems to suggest its explication in terms of the form-without-matter doctrine: 'Now if thinking is like perceiving, it would either be being affected in some way by the object of thought or something else of this kind. It must then be unaffected, but receptive of the form, and potentially such as this, but not this; and as that which can perceive is to the objects of perception, so must the intellect similarly be to the objects of thought' (429a13-18).

Thought and perception, then, are not strictly affections - of the ordinary kind, as we must understand. Instead, they are receptions of the forms of their objects. And this, we may suppose, is what constitutes them cases of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$. The form-without-matter doctrine, then, may enable us to arrive at an adequate interpretation of the assimilation of the perceiver and thinker, understood as non-physical. Perhaps it will entitle us to confirm the cognitive assimilation interpretation of the assimilation doctrine - or even, if we are fortunate, to arrive at a fuller understanding of what

such cognitive assimilation might be. But of most interest to us, of course, is whether the form-without-matter doctrine itself will provide an interesting and substantive account of perception.

III. THE FORM-WITHOUT-MATTER DOCTRINE

De Anima II.12 introduces Aristotle's famous form-without-matter doctrine: ἡ μὲν αἰσθησίς ἐστι τὸ δεκτικὸν τῶν αἰσθητῶν εἰδῶν ἄνευ τῆς ὕλης (424a17-19). This doctrine appears in varied contexts. Here Aristotle's professed aim is to give us an understanding καθόλου δὲ περὶ πάσης αἰσθήσεως (424a17). Later in this chapter the doctrine will be used to explain the inability of over-stimulated percipients and of plants to perceive, as it will again of the latter at 434a29. Elsewhere in DA the idea of receiving the form without the matter is put to use in discussions of νοῦς (429a15,b7), of perceiving that we perceive (425b22), of simultaneous perception of different sense-objects (427a8), and of the composition of the sense-organ of touch (435a22). DA II.12, in short, rounds off Aristotle's discussion of the special senses with an account of perception which, designed primarily to distinguish perception from ordinary alteration, figures centrally in the rest of this treatise.

But how are we to understand the form-without-matter doctrine? 'Form' and 'matter', the key terms of this doctrine, are put to wide use in the corpus. Their prime function is to furnish an analysis of substance and change.¹ Hence, form stands to matter, roughly, as property to substratum, determinate to indeterminate, actuality to potentiality.²

This basic contrast between form and matter allows one to speculate about the notion of a form without matter. This notion, for example, might be applied to any entity, like the prime mover (Met.1071b20-22), which exists as pure form, wholly without potentiality - in contrast with all ordinary physical and mathematical objects.³ But even among the objects of the ordinary world, some may be understood as forms essentially with matter, some as forms without matter: the snub is a case of the former, for it is essentially concavity-in-a-nose, while concavity is a case of the latter, for it does not involve matter in its definition.⁴ But finally any concept -snubness no less than concavity - might be characterized as a form without matter in contrast with its instances;⁵ for since matter is the principle of individuation,⁶ concepts, to be such, must be without matter.⁷

Naturally, not all these possibilities are relevant to our concerns, for sensing is confined to sense-objects, such as sweet and hot things. And the sensible forms of such sense-objects would seem to be their particular flavours and temperatures. These qualities cannot exist themselves without matter, as does the prime mover. But nor are they, like snubness, essentially enmattered.

Hence a sensible form without the matter might simply be an entity's sensible form alone, i.e. apart from any matter of the thing. And for sense to receive the sensible form without the matter might be

for it to receive the sensible form of a thing and nothing else - e.g. other forms borne by the thing's matter, or material particles transmitted from the thing.

But there are further possibilities here. For 'τὸ αἰσθητόν' may refer not only to the concrete sensible individual, as above, but also to the sense-quality itself. And then the form of τὸ αἰσθητόν without the matter may refer, not to the sensible quality of a thing, apart, roughly, from the thing, but rather to the form of the sense-quality itself - its actuality - as opposed to its potentiality. Accordingly, for sense to receive the form without the matter might be for it to receive the sense-quality as actual, and not as potential.

But finally, the idea of a form without matter may suggest, not a sensible form alone, nor the form of a sensible quality, but rather a sensible quality unborne by a material substratum. Hence, sense might be understood to receive a sensible form without bearing it as a material substratum would. Or again, sense might be understood to receive a sensible quality as-unborne-by-a-material-substratum - a sensible quality, then, as a sensible quality. For, since matter is the principle of individuation, a sensible quality so unborne would be a universal.

Four interpretations of Aristotle's form-without-matter ('FWM') doctrine are thus possible. The first (i), that the sense or sense-organ receives the form of

the sense-object without, roughly, receiving any matter from it, is basically a physicalist version of the FWM doctrine. The second (ii), that sense receives the sense-quality as actual, and not potential, is based on Aristotle's unity-of-actuality doctrine. Both physicalist and unity-of-actuality interpretations of Aristotle's theory of perception have been found wanting. Hence, it will come as no surprise that these interpretations are also inadequate to Aristotle's FWM doctrine.

The remaining, non-materialistic interpretations of the FWM doctrine, then, at least have a better chance of success. But the third interpretation of the FWM doctrine (iii), that sense receives the sensible form of an object without standing to it as substratum, will be seen to be somewhat undeveloped - indeed, to share the very problem afflicting Aristotle's refined assimilation doctrine, which it is meant to explain. The fourth interpretation (iv), that sense receives a sensible quality as such, is, by contrast, substantive, and so it supplements Aristotle's refined assimilation doctrine. Indeed, this interpretation, if it has some problems and wants fuller treatment, seems at least to show some promise.

(i) The Physicalist Interpretation

Let us turn, then, to the first view, looking at once at Aristotle's principal discussion of the FWM doctrine:

And in general we must take it with regard to each sense that the sense is that which is receptive of the sensible forms without the matter, as for example the wax receives the seal of the ring without the iron and the gold, and it takes the golden or the bronze seal, but not insofar as it is gold or bronze. Similarly too the sense of each is affected by that which has colour or flavour or sound, but not insofar as each of these is called what it is, but insofar as it is such, and in accordance with the λόγος (DA II.12.424a17-24).

This passage reads most smoothly if sensible forms are understood to be an object's sense-qualities: for sense to receive the sensible form, then, is for it to be affected by the sensible object insofar as it is such⁸ - sensible - or in accordance with its λόγος⁹ - its sensible form - just as for the wax to receive the seal of the ring is for it to take the seal not insofar as it is gold or bronze (material), but insofar as it is informed by a certain design. That 'sensible form' might refer to the quality itself is a possibility well-attested by the use of 'form' to refer to attributes¹⁰ as opposed to their substrata.

Unfortunately, however, the terminology of this characterization is strikingly appropriate for describing ordinary alteration¹¹. In ordinary alteration, a sensible quality is taken on by a patient as a result of the action of an agent already thus qualified; indeed, the patient might be said to be affected by the agent ἡ (ἐστὶ) τοιοῦδ᾽, and not insofar as it is constituted by a certain kind of matter. And since nothing but the quality is received by the patient, could it not be said to receive the form without the matter? Aristotle's example naturally strengthens such a view, for the way's taking τὸ χρυσοῦν ἢ τὸ χαλκοῦν σημεῖον, ἀλλ' οὐχ ἡ χρυσοῦς ἢ χαλκός seems to amount to its becoming identical in design to the seal of the ring, but not in other properties, notably, its material ones.

Aristotle, however, means his F&M doctrine to give the essence of perception, and thereby to provide the basis for the distinction of perception from ordinary alteration. But there is nothing in this account, it would seem, to distinguish perception from ordinary alteration.

Perhaps we are neglecting the phrase 'without the matter' in Aristotle's characterization. After all, the sensible quality, taken in itself, is by definition without matter, so if Aristotle meant to be saying merely that sense acquires the sensible form, he would have had no need of adding that it receives it without the matter. And indeed, that the phrase does have a further role is indicated by Aristotle's important account in DA II,12. of the reason plants, though they become hot and cold, do not perceive: 'they do

not have a mean, nor such a principle as to receive the forms of the sense-objects, but they are affected with the matter' (424b1-3).

Two interpretations suggest themselves here. Both are physicalist in their upshot, but they differ in their interpretation of the phrase 'without the matter'. The first is that the sense, or rather the sense-organ,¹² unlike the plant, is affected only by the sensible form correlated with it, not by any other forms the agent might possess. The plant, on the other hand, is affected by the form 'with the matter'; by the form and all the other sensible forms borne by its matter. In receiving the form of the sweet flavour, for example, the plant also receives the forms of wetness, heat, sweetness in odour, and so on. The sense-organ of taste, by contrast, receives the form of the sweet flavour alone.¹³

This view, however, is not all that attractive. For one, the physiological doctrine here asserted seems suspect. It is hard to imagine that Aristotle could have thought that the tongue, say, in acquiring the taste of the agent of perception, does not also acquire its temperature and smell. But even if we suppose the true organs of perception to be in all cases hidden from observation, we must also suppose it odd that Aristotle nowhere else in the psychological treatises implies that the physiological interaction between agent and patient so differs in the case of organs and of inanimate objects. Indeed, his preoccupation with the physiology of perception is such that his omission of this doctrine cannot be ignored - especially in view of its easy characterization.

This view, moreover, does not seem adequately to express Aristotle's words in II.12. If Aristotle had wished to stress the selectivity of sense in relation to sensible qualities, surely he would not have used such obscure language, but would simply have said that the sense is affected by its special object alone. And while to say that for a to be affected by b insofar as b is F, but not insofar as it is material, might be to say that a is affected by b not insofar as it has sensible qualities other than Fness, this does not seem to be its sense here. For Aristotle seems to be excluding the affection of sense in terms, not of the agent's other sensible qualities, but of its matter or substance: the wax receives the seal not insofar as it is gold or bronze, the sense is affected by the hot thing not insofar as it is, say, charcoal.¹⁴

The second version of this interpretation of the FWM doctrine also embraces the view that a distinctive kind of physical alteration is at issue here. But according to this view, to say that the sense is receptive of the sensible form without the matter is to say that the sense-organ can take on the colour, say, of the object of perception, without admitting any material particles from it. A plant does not have a principle for receiving the form without the matter, for, to become hot, it must admit material particles from the agent.¹⁵

This view avoids the interpretative difficulty of the first. For its reading of 'receiving the form

without the matter' is natural and straightforward. It also does not restrict the ways the patient may be affected by the agent when the material particles are transmitted, and so accommodates Aristotle's examples of the gold and the substance.

But this view also suffers from some serious difficulties.

First, its explanation of a plant's failure to perceive - its reception of the material particles with the form - is somewhat puzzling. For if the reception of the form without the matter may be perception, why would the reception of the form with the matter not then be perception and something else? Unless the material particles transmitted could be seen to play some disabling role in Aristotle's view, this interpretation would appear to be unsatisfactory.

More important still are the difficulties raised by the physiological doctrine contained in this view. For Aristotle's descriptions of the interaction between sense-object and organ, if they express or imply the absence of a transmission of material particles, often seem applicable, as well, to the interaction between two ordinary physical objects.¹⁶ Sound, for example, would seem to affect both a sound-box and the ear in the same way: the air contained within each is made to vibrate as does the sound (DA 420a3ff). We shall have to say, then, that at least certain sense-objects do not act on any objects at all by transmitting material particles. Hence, the failure to perceive,

on this view, is in certain cases explained by the transmission of the material particles,¹⁷ not the success by the lack of transmission.

But the idea that the sense-object may affect both insensate object and organ in the same way means that the FWM doctrine does not describe or give an account of the nature of perception; it gives a necessary condition of perception - and surely an unimportant one at that. But Aristotle's formulation of this doctrine strongly suggests that he means to be describing, not a condition of perception, but its distinguishing feature.

His claim, e.g., that sense is that which is receptive of the sensible form without the matter leads one to expect that whatever can receive the sensible form without the matter has or is a sense. And indeed, Aristotle characterizes a sense-organ as what has a power for receiving the sensible form without the matter (424a24-25) - but such a power, as the form of the sense-organ, would be sense, as in fact Aristotle later implies in this passage (a26-28). But if whatever can receive the sensible form without the matter has or is a sense, then the sound-box, which can receive the sound without material particles, will have to be said to have a sensory power. This view of the FWM doctrine, then, is not acceptable, since it either departs from Aristotle's intention to give an account of sense or it saddles him with an account that is manifestly false.

But even if all and only senses could receive the form without the matter, this view would hardly capture the essence of perception. For it amounts to the claim that the physical organ becomes sensibly qualified; but becoming hot, red, etc.- whatever the mechanism of the becoming - does not seem to be what perceiving is about.

Indeed, Aristotle's doctrine of the special kind of alteration in DA II.5 may encapsulate his recognition of this point, and so undermine even successful attempts to identify a kind of physical alteration peculiar to perception. For physical change, as we have seen, is simply incompatible with the sort of *πάσχειν*, painstakingly described, which is characteristic of perception. But then the FWM doctrine, on a physicalist interpretation, not only fails to elucidate Aristotle's refined assimilation doctrine - as is wanted; it does not even manage to accord with it. Preserving the coherence of Aristotle's formal account of perception, then, requires an interpretation of the FWM doctrine which is non-materialistic. We turn to three such interpretations now.

(ii) The Unity-of-Actuality Interpretation

The second interpretation of the FWM doctrine, based on Aristotle's unity-of-actuality doctrine, may take us somewhat further than the first. For sense to receive the form without the matter, on this view, is for it to take into itself the sense-quality as actual, and not as potential.¹⁸ Aristotle's unity-of-actuality doctrine, as we have seen, is subject to two broad interpretations, and so, then, must be this version of the FWM doctrine. Before considering the value of this interpretation of the FWM doctrine in its two guises, however, let us consider whether it is even adequate to our texts.

This interpretation of the FWM doctrine starts by rejecting the usual conception of a sensible form as a sense-quality inhering in a composite sensible substance. Instead of construing 'τὸ αἰσθητόν' as 'sensible substance', it construes it as 'sensible quality'.¹⁹ And instead of taking the form of the sense-object to be the sense-quality, the matter the underlying substratum, it takes the form to be the sense-quality in actuality, the matter the sense-quality in potentiality, thus relying on Aristotle's indifferent use of 'matter' and 'form', and of 'potentiality' and 'actuality', to mark the same distinctions.²⁰

Hence, this view takes sense's reception of the form without the matter to be its reception of

the sense-quality as actual, not as potential; and an insentient entity's affection 'with the matter' to be its reception of the sense-quality as potential, i.e. as a physical power of causing sensation. In the case of hearing, e.g., sense receives the actual sounding of an object, but not the power corresponding to the actual sound - it cannot itself in turn stimulate perception. An object which acquires a sound, on the other hand, receives just that power.

But is this view compatible with Aristotle's discussion of the FWM doctrine? At DA II.12, after all, it seems to be the form of the sensibly qualified object, not the form of the quality, that is received by the sense.²¹ For the FWM doctrine is illustrated by wax's taking the seal of the ring without the iron and bronze (424a19-21). And it is further explicated in terms of sense's affection by that which has (τὸ ἔχοντα) colour or flavour or sound, 'not insofar as each of these is called what it is, but insofar as it is such, and in accordance with the λόγος' (a23-24). It seems hard to avoid concluding from this that the αἰσθητόν whose form sense receives is 'that which has colour or flavour or sound', and that its form is its sensible quality.

But this objection is not insurmountable. For that sense's reception of the form without the matter is explicated in terms of its affection by a sensible thing does not mean that it is the thing's form that is thereby received. For though a material object is referentially the agent here, we might be meant to be considering the material object as actually sensibly

qualified and potentially sensibly qualified. Then Aristotle's point could be that in perception the sense becomes like the object in respect of the actual quality, in ordinary alteration the physical object becomes like the object in respect of the potential quality. This could then be re-written as the reception of actual and potential qualities. So it would not be the thing's form, but the form or actuality of its sense-quality, that is received in perception.²²

But if this view of the FWM doctrine is thus possible, it also receives some positive support from Aristotle's implicit linkage of the FWM and unity-of-actuality doctrines. Asking in DA III.4 how $\nu\theta\varsigma$ itself can be $\nu\eta\rho\acute{o}\nu$, for example, Aristotle observes that: 'in the case of those things having matter, each of the objects of thought is present in potentiality. So that $\nu\theta\varsigma$ will not belong to them (for $\nu\theta\varsigma$ is a potentiality for being such things without matter), but the thinkability will belong to $\nu\theta\varsigma$ ' (430a6-9).

If things 'having matter' - particulars, or the intelligible features of particulars - are potential objects of thought, such items 'without matter' would seem to be actual objects of thought. But these cannot be understood simply as the formal aspects of the things with matter, as such, for then the particulars of the world would have $\nu\theta\varsigma$ in them; they must rather be these forms in their formal aspect, i.e., as actual. If this is right, then we see here an implicit identification of 'forms of the $\nu\eta\rho\acute{o}\nu$ without the matter'²³ with 'actual $\nu\eta\rho\acute{o}\nu$ ', understood in the sense of that term appropriate to Aristotle's unity-of-actuality formula.

DA III.8. 431b20-432a1 is also relevant here.

It contains a rather long discussion of how thought and sense are in a way all things, the one the objects of thought, the other the objects of perception. After establishing that thought and sense, potential and actual, may be divided to correspond to their objects, potential and actual, Aristotle goes on to say that thought is potentially the objects of thought, sense the objects of perception. At this point Aristotle crucially brings the FWM doctrine into play: 'But it is necessary for them to be either these things themselves or the forms. Not these things themselves; for it is not the stone that is in the soul, but the form' (431b28-432a1).

Now one might think that Aristotle's question is designed to enable him further to specify how thought and sense are their objects. He has established, of course, that they are potentially their objects; he can now establish that they are potentially these objects as actual - the concept of actual objects having already been introduced. If this is right, then to say the form of the stone is in the soul is a way of saying that its sense-qualities as actual are there. Hence, the terminology of matter and form is again used to express a point about potential and actual αἰσθητά.²⁴

It might be argued, however, that Aristotle uses the FWM doctrine at DA III.2. 425b22-25 in a way incompatible with this interpretation:²⁵ 'And further that which sees

is in a way coloured; for each organ is receptive of the sense-object without the matter. And that is why, when the sense-objects go away, perceptions and imaginations remain in the organs'.

Some might argue, indeed, that this passage compels a materialist interpretation of the FWM doctrine. If the FWM doctrine is to explain the persistence of perceptions and imaginations in the organs, then for the organs to receive the forms without the matter must be for them to undergo ordinary physical alteration - to become bearers of those forms. For how could *φαντάσματα* remain in the perceiver after perception except as some sort of material modification of him? And indeed, in his major discussions of *φαντάσματα* in the PN, Aristotle talks as if *φαντάσματα* were pictures of sense-objects which pass through the blood, are broken up and dispersed, and so on.²⁶ And this most strongly suggests that they are physical.

But the materialist interpretation of the FWM doctrine does not seem to be forced on us by this passage. Indeed, this interpretation seems rather implausible, since Aristotle's claim is that that which sees is 'in a way coloured' (425b22-23); if the sense-organ literally took on colour, this locution would hardly be apposite. Aristotle seems here, rather, to be thinking of the colour as the content of the perceiver's consciousness - whether or not it is also some material modification of his sense-organs. Aristotle's central problem here, after all, is to explain how we can

perceive that we perceive, if perception is of perceptible objects (425b17-20). Surely his aim, then, is to show that the perception of perception is in some way a perception of perceptible objects - i.e. the objects we are immediately aware of.

Aristotle's use of the FWM doctrine to explain the persistence of perceptions and imaginations is in fact something of an afterthought. But here, too, his citation of the remaining 'perceptions' suggests that his concern is with events such as after-imaging. And in fact, Aristotle's discussions of *φαντάσματα* and *αἰσθήματα* are not limited to their fate as traces; he also has some quite extensive discussions of *φαντάσματα* and *αἰσθήματα* remaining as contents of consciousness when external objects depart.²⁷

But this said, it must still be admitted that this passage poses a problem for the unity-in-actuality reading of the FWM doctrine. For Aristotle is here adducing the presence in the organ of the *αἰσθητόν* without the matter to explain the persistence of perceptions and imaginations after the departure of an object of perception. But if it is the actual sense-quality which is received by the organ, it can hardly persist in the absence of the object having the power corresponding to it; and in any case, its persistence would amount to the existence of perception - not of after-imaging or imagining - since the actualities of the quality and of the sense are simultaneous (DA 426a15-19).

Certain considerations, however, may mitigate this difficulty. Consider, for example, that in

perception actual sense and its object are one. So Aristotle might easily have invoked the unity-in-actuality doctrine itself to explain why that which sees is in a way coloured. And the fact that perception thus has contents might in turn be used to explain the possibility of contents, without objects, of perception. Naturally, it will not be the sense-qualities as actual that serve as the contents of imagination and after-imaging; but they will be the progenitors of the latter's contents. The relationship between imagination and perception is no doubt obscure, but that Aristotle is wont to explain imagination by perception²⁸ leaves open the possibility, since perception is identical with its objects, that it is the unity-in-actuality conception of perception which helps us to understand imagination.

More important, one might argue that the problem which still afflicts this view - that the forms-without-matter, thus understood, could not be the images and after-images - would be common to any adequate interpretation of the FWM doctrine. If the FWM doctrine is meant, as we have seen, to give the essence of perception, then whatever its interpretation, it would seem to provide an over-determined explanation of the presence of after-images and images. For at the least the FWM doctrine must be understood in terms of an *αἰσθητικόν*'s affecting a sense in a certain way, and so, though on some views the effect of this action may remain in the absence of the object, this effect is arguably not

the form-without-matter; if it were, perception would be indistinguishable from after-imaging and imagining.

It is now time, however, to consider how satisfactory an account of perception, in distinction from ordinary alteration, is yielded by a unity-of-actuality interpretation of the FWM doctrine. The unity-of-actuality doctrine, as we have seen, is subject to two broad interpretations: that actual or sensed sense-qualities depend on sensing; or that actual or existing sense-qualities depend on sensing. Accordingly, the FWM doctrine will amount either to the view that sense is what can receive, e.g., heard sounds, rather than sounds capable of being heard; or to the view that sense is what can receive, e.g., vibrations as sounds, rather than as vibrations.

The first version of the unity-of-actuality doctrine, as we have seen, is the better supported. Yet this version does not yield an adequate account of the FWM doctrine, if that is meant to express the essence of perception. To receive the form of the sense-object without the matter, on this view, is to receive the sense-quality in actuality, i.e. as actually sensed. To undergo ordinary alteration, by contrast, is to receive the sense-quality in potentiality, i.e. as capable of being sensed.

Now this characterization of perception is accurate, and the distinction it yields with alteration will not fail, in the sense that every event that meets the first characterization will be a case of perception, the second, of alteration. But also accurate is a characterization of ball-catching as the reception of a

caught-ball, and also successful its distinction from e.g. being presented with a ball (as a gift), characterized as the reception of a presented-ball. But both have these virtues only at the expense of circularity. We must obviously understand the concept of catching to explicate the notion of a caught-ball, and the concept of being-presented-with to explicate the notion of a presented-ball.

In exactly the same way, this account of perception, and the distinction with alteration it yields, is entirely without explanatory value. For to say that sensing is the reception of a quality as actual, i.e. as sensed, is obviously helpful only if we already know what sensing is, for the concept of sensing must be grasped to explicate the notion of a sense-quality in actuality. Similarly, though we have an easily expressed distinction between perception and ordinary alteration here - the first is a reception of a sense-quality in actuality, the second, of a sense-quality in potentiality - this distinction presupposes a prior understanding of perception and ordinary alteration. The first version of the unity-in-actuality doctrine, then, does not furnish an acceptable reading of the FWM doctrine, since that doctrine is meant to formulate the nature of perception, and thus understood it presupposes this formulation.

The interpretation of the FWM doctrine based on the second version of the unity-in-actuality doctrine has a much better chance of success than the first. It is true on this view, as on the last, that anything which receives an actual sense-quality will sense -

we could hardly hope for anything less. But it is not true on this view, as on the last, that for sense to receive an actual sense-quality is for it to sense a sense-quality - thus leaving obscure what sensing is. It is rather that for sense to receive an actual sense-quality is for a sense-quality to come to exist in sense - a sense-quality which corresponds to - is the actuality of - a physical power of producing such sensory items. In other words, the FWM doctrine on the first version amounts to the claim that to sense an F is for an F to be sensed; while on the second version it amounts to the rather more interesting claim that to sense an F is for the actuality of F to exist in sense.

The significance of this difference is evident. For the notion of an actual sense-quality, on the second version, surely has features built into it which may explicate the concept of sensing, and not merely imply its existence. Consider, for instance, that these qualities are the actualities of physical powers, so sense is given a way of coming into cognitive contact with properties of physical objects. Moreover, these actual qualities will be non-trivially soul-dependent - so if we are aware of them, our beliefs about them would have to be right. But most important, it might be argued that we would have to be understood to be aware of them; such actual qualities in the soul would have to be taken to exist as the contents of consciousness, for surely the distinction between potential and actual sense-qualities here proposed is

one between inaccessible physical powers and the phenomenal objects of consciousness.

Here, then, we might be thought to have the materials for understanding perception. To sense F is for the actuality of F to exist in sense; but for this to occur is, e.g., for there to be consciousness of a sensory object in some manner representative of physical qualities of objects, and perhaps taken as such. In short, the concept of an actual quality of sense may provide at least the basis for an adequate account of perception.

This conclusion, indeed, is hardly surprising, since the stronger version of the unity-of-actuality doctrine, as we have seen, is essentially a dispositional theory of the special sense-qualities, and therefore implies, roughly, a representative theory of perception. But we have also had some reason to doubt the adequacy of the stronger version of the unity-of-actuality doctrine.²⁹ There seemed to be the slimmest of evidence in its favour; and there seemed to be arguments in the corpus directed against dispositional theories in general. If we therefore feel unable to affirm the stronger version of the unity-of-actuality doctrine, and yet are keen to keep a unity-of-actuality interpretation of the FVM doctrine, we are forced to saddle Aristotle with an account of perception which is circular.

This problem may temper one's enthusiasm for the unity-of-actuality interpretation of the FVM doctrine. Indeed, it may also raise suppressed doubts about the antecedent plausibility of this

interpretation as a gloss on the FWM locution. For to understand the reception of the form without the matter as the reception of the sense-quality as actual, and not potential, does not seem to follow the natural suggestion of Aristotle's words.

True, form and actuality, matter and potentiality, are often interchanged in the corpus. But they seem to be interchanged only when the items distinguished are properties or substances and their potentialities - not acts and their powers. One never hears Aristotle calling house-building the form of the house-builder's art - or his art the matter for his activity. Is it reasonable to suppose, then, that he would refer to a sense-quality in act as the 'form of the sensible' - or to a sense-quality as power as its 'matter'? In view of the difficulty of making out the unity-of-actuality interpretation of the FWM doctrine, indeed, one may prefer to affirm the most intuitively acceptable reading of 'sensible form' - an object's sense-qualities - and thus reject the starting-point of this interpretation of the FWM doctrine.

The unity-of-actuality interpretation of the FWM doctrine, in short, seems untenable. Indeed, it was evidence of this doctrine's lack of substance that prompted us to seek a different approach to perception in Aristotle's assimilation and FWM doctrines. A unity-of-actuality reading of the FWM doctrine then could hardly have been expected to help us in this

investigation - unless its weaker interpretation could somehow have been transformed in connection with the FWM doctrine. But this, as we have seen, is not the case.

Hence, we must return to the business of understanding the assimilation and FWM doctrines on their own account. Physicalist interpretations have proved inadequate to our texts - still more to the task of making sense of perception. Thus, we must now turn to two non-physicalist interpretations of the FWM doctrine.

(iii) Non-Physicalist Interpretation I

We turn, then, to our third interpretation of the FWM doctrine. This interpretation, in being non-physicalist, avoids the primary disadvantage of the first: it does not see the reception of the form without the matter as a species of the physical assimilation of the organ to the sense-quality. Indeed, it understands the FWM doctrine to characterize perception precisely so as to exclude the possibility that it is a material assimilation of perceiver to perceived. For on this view, for the perceiver to receive the sensible form without the matter is for him to receive the sensible form of the object - its colour, sound, etc., as on the first view - without standing to it as physical substratum.³⁰

But how is this interpretation to be grounded by the text? DA II.12, it will be recalled, says the following:

And in general we must take it with regard to each sense that the sense is that which is receptive of the sensible forms without the matter, as for example the wax receives the seal of the ring without the iron and the gold, and it takes the gold or the bronze seal, but not insofar as it is gold or bronze. Similarly too the sense of each is affected by that which has colour or flavour or sound, but not insofar as each of these is called what it is, but insofar as it is such, and in accordance with the $\lambda\acute{o}\gamma\omicron\varsigma$ (424a17-24).

This passage might well justify the view that sense, according to the FWM doctrine, receives the form of the sense-object without standing to it as substratum. For one might suggest that 'ἀνευ τῆς ὕλης' qualifies 'sense', and not 'the form', in Aristotle's statement of this doctrine. This suggestion, indeed, would seem to be supported by Aristotle's omission of 'ἀνευ τῆς ὕλης' when talking of νοῦς' reception of the forms (DA 429a15); for there would be no question of νοῦς being materially affected. More important is Aristotle's claim that plants are affected 'μετὰ τῆς ὕλης' (DA 424b3). For this seems strongly to suggest that the matter of the plants is affected.

But to be plausible, this reading of the FWM-locution requires 'ἀνευ τῆς ὕλης' and its equivalents to modify the patient-terms in Aristotle's explanatory affection-pairs in II.12. It is perhaps conceivable for the wax to be understood to take the seal of the gold or bronze ring without itself being gold or bronze - though this is not to say it takes it without its own matter at all.³¹ But it is surely inconceivable that sense's matter is being referred to in Aristotle's characterization of its affection. This gloss of the FWM-locution, then, must be abandoned.

Still, this is not the only way to justify this reading of the FWM doctrine. In fact, Aristotle's references to the agent's matter in his explication of the FWM-claim in terms of affection might provide just this justification. For an affection by something insofar as it is material surely cannot simply be an

affection in which a qualified material agent, and not a quality, acts, for that is true in all affection. It might, however, be an affection in which the patient is somehow materially assimilated to the agent. But what would this mean? We can hardly think, for example, that for a plant to have been successfully altered by a piece of hot charcoal it must have been turned to charcoal in its matter. But the plant is already like the charcoal in having the sort of matter which admits of heat and cold, so it is not altered in this respect when affected.

But in some sense the plant's reception of a new quality in alteration is its reception of a new matter - of the only kind it could get: the matter is different in being in virtue of the new quality (Phys. 217a22). But if an affection of a by b insofar as b is material may be thus understood, an affection of a by b not insofar as b is material may be given clear sense: in this kind of affection a does not so receive a new kind of matter in virtue of its new quality; and this is to say that it does not receive the new quality in its matter. So understood, Aristotle's explication of the FWM doctrine in terms of affection supports the view that this doctrine expresses sense's reception of the form without standing to it as substratum.

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Indeed, that it is sense - and not the sense-organ - which is said here to be receptive of the form without the matter further supports this view. For sense, as such, is 'not an extended thing' (424a27), and so could hardly be expected to receive the forms as would an extended thing. But DA II.12 is Aristotle's most deliberate statement of

the FWM doctrine - and a statement followed by a careful consideration of the relation between sense and sense-organ - so its application of the FWM doctrine to sense must be taken seriously.

But if this view can be textually justified, what does it amount to? To say that sense receives the sensible form of the sense-object without standing to it as substratum is at least to say that its reception of the form is not a creation of a new instance of it.³³ For sight to receive an object's red colour, e.g., is not for it itself to become red. But if it does not receive the object's sensible form into itself as substratum, it does receive the sensible form. It might be thought, moreover, that since no new instance of that form is created by sense, sense is meant to receive the particular form inhering in the object - i.e. to receive the form of that object as of that object.

This possibility is perhaps supported by Aristotle's use of the FWM doctrine to explain why plants do not perceive,

And it is evident from this... on account of what the plants do not ever perceive, although they have an ensouled part and are affected by the objects of touch; for certainly they are cooled and warmed; ... the reason is that they do not have a mean, nor such a principle as to receive the forms of the sense-objects, but they are affected with the matter (DA II.12.424a 32-b3).

Aristotle might be easily understood here to be saying that plants do not receive the forms of the sense-objects,

i.e. the particular forms inhering in those objects, but rather that they are affected with their own matter, i.e. they create new instances of those forms by reproducing them in their own matter. If this is right, it suggests that while sense receives the particular form of a sense-object without standing to it as matter, a plant reproduces that form - but does not receive it - in its own matter.

But is this view of the FWM doctrine adequate? One may think not. For while this view has the major advantage of according well with Aristotle's refined assimilation doctrine of DA II.5, it has the major disadvantage of taking us no farther than that doctrine. And since that doctrine could not be satisfactorily filled in, nor, then, can this one.

That this interpretation of the FWM doctrine is in accord with DA II.5 is clear. Indeed, Aristotle himself explicitly connects an absence of matter with the possibility of an item's coming to be without ordinary change³⁴ - as do the unit, point, and mathematical wholes of this kind; ἐνέργεια such as seeing and pleasure; and forms themselves: 'however many things are or are not without changing, of these there will not be matter' (Met VIII.5. 1044b28-29).³⁵

Aristotle's thought here would seem to be that things can be and not without change - i.e. come into and pass out of being instantaneously, not as a result of a process - only if they do not come to be in or with matter, i.e. if it is not material things which come to be or be something; for otherwise the

coming to be would have to proceed from an initial, opposite state, and would have to be a piecemeal, time-taking actualization of potentiality, i.e. a *κίνησις* or change. But something that is not in or with matter, an uncomplex unity, could come to be all at once: its coming to be would not be a case of gradually transforming recalcitrant matter into an opposite state, of converting potentiality into actuality against the resistance of matter.³⁶

An even more interesting discussion of this topic is to be found in GC I,7. For here Aristotle considers the conditions under which an agent does or does not reciprocally suffer in acting. These conditions, moreover, relate specifically to our concerns: form with and without matter: 'however many things, then, do not have the form (*μορφή*) in matter, these agents are unaffected, but however many have it in matter, these are affectable' (324b4-6).

Unlike a heating agent, for example, which loses its heat in acting, a doctor does not become sick in making his patients healthy. For the doctor does not stand as matter to the form of health in terms of which he works, although he may stand in that way to the art of healing, which includes a conception of health.³⁷ For to stand to the form of health as matter would be to create an instance of health; and the doctor hardly performs cures in virtue of being healthy. In short, an agent does not suffer in acting, on this view, if it does not stand itself as substratum to the form to which the patient is assimilated.

If this is right, GC I.7 amply confirms our earlier claim that for the FWM doctrine to be compatible with DA II.5, sense could not receive the sensible form of the sense-object in a material way; for it is precisely such material interaction which yields *παράκειν* proper. Moreover, the view that it is agents whose forms are not in matter which do not suffer in acting suggests that it will be patients receiving forms not in matter which will not suffer in being acted on. But most important is the idea of GC I.7 of what a form without matter must be if an interacting entity is not to suffer: a form, in terms of which the interaction occurs, to which the interacting entity does not stand as material substratum. By the lights of GC I.7, then, this interpretation of the FWM doctrine is in perfect harmony with Aristotle's refined assimilation doctrine.

But this view also has the same serious shortcoming which afflicts Aristotle's refined assimilation doctrine: though it does not seem altogether implausible as far as it goes, it does not go nearly far enough. For to say that sense receives the sensible form without standing to it as material substratum tells us nothing of how sense does stand to the form, what its reception of it consists in.

Aristotle elsewhere, it is true, focuses more closely on the relation between sense and its objects. In DA III.2, for example, he attempts to explain how in simultaneous perception of different sense-objects

sense is preserved as a unity (426b29-427a14). He denies that sense stands to its objects as matter to form - as we should wish - and suggests instead an analogy of sense to a point: as a single point serves as two in relation to the two lines it connects and divides, so a single sense may function as two in relation to two objects. By this analogy Aristotle seems to be trying to capture the directionality, as it were, of perception: sense is like a single source of light shining out on two objects. But the analogy is unfortunately inadequate to express the relation of sense to its objects, for one must practically import the notion of 'looking at' to see the point of the analogy.

Unless we have overlooked some further consideration, then, this interpretation of the FWM doctrine, like Aristotle's refined assimilation doctrine, is not sufficiently informative about the nature of perception to be acceptable. For to say that sense receives the forms without standing to them as substratum is not to say how it does receive the forms. And while one would like to say that if sense does not receive the forms in a physical way, it must receive them in a mental way - as objects of a mental act - this move is no more justified here than it was in our discussion of DA II.5.

We have not, however, exhausted the possibilities for interpreting the FWM doctrine. Indeed, the key to its interpretation may reside in Aristotle's example of the doctor, who works in virtue of a form of health not in matter. For we may speculate that this form of health

is not only not an instance of health, but is in fact a concept of health. So Aristotle's FWM doctrine, it seems promising to think, has something to say about perception as a conceptual activity.

(iv) Non-Physicalist Interpretation II

On the fourth view, then, the FWM doctrine focuses on form's role as the intelligible, and portrays perception as a distinctively cognitive event. Sense's receiving the sensible form of a thing without the matter is, roughly, its isolating the sensibly intelligible aspects of the thing, and subsuming it under them. To receive the sensible form of a thing without the matter, that is, would be to be aware of the thing as, say, red, sweet, sounding, and so on. To receive it with the matter, as plants must, is instead to fail to isolate and receive as form the formal aspects of the stimulus.³⁸

This interpretation of the FWM doctrine seems adequate to DA II.12: 'the sense of each', as Aristotle says, 'is affected by that which has colour or flavour or sound, but not insofar as each of these is called what it is, but insofar as it is such, and in accordance with the $\lambda\acute{o}\gamma\omicron\varsigma$ ' (424a22-24). Sense, one may suggest, receives the coloured, flavoured or sounding thing, not as a particular thing (e.g. the son of Cleon), but as coloured, flavoured or sounding. The formal aspects of the thing, since received by sense, are forms in the soul - one is reminded of Aristotle's claim that it is not the stone itself, but its form, that is in the soul (DA 431b29-432a1). But as such, these forms are concepts under which a particular is subsumed; thus sense may be understood to receive an object as an F or G.

The strength of this interpretation of the FWM doctrine derives primarily from the plausibility of understanding a form-without-matter as a concept. 'Form', as we have seen, is used most basically to refer to the properties of things, that is, to their essentially repeatable features.³⁹ Matter underlying a property creates an instance of it, for matter, as we have seen, is the principle of individuation.⁴⁰ Hence a form without matter would be a universal. But for Aristotle there are no self-subsistent universals;⁴¹ forms without matter, as universals, are therefore in the soul.⁴²

There is clear evidence for this view in the corpus. At Met.XII.3. 1070a13, for example, Aristotle qualifies his claim that 'in some cases the this does not exist apart from the composite substance, e.g. the form of the house apart from the house' (a13-14), by saying 'unless the art exists apart (nor is there generation and destruction of these, but it is in another way that the house without matter, and health, and all things in accordance with art, exist and do not exist)' (a14-17). Hence, the form may exist apart from the matter, if not in the physical world, in the artist's soul.

Indeed the notion of form plays a central role in Aristotle's conception of an art. At GA I.22.730b17, e.g., Aristotle claims that the artist imparts form to the materials on which he works by virtue of 'his soul, in which the form and knowledge reside'. The form

in the artist's soul, of course, is the form of the work to be produced, as is clear from Aristotle's discussions of the causes and their number. At Met. XII.4. 1070b30-34, e.g., he says that 'since that which moves in the case of physical things is, for man, for instance, man, and in the products of thought the form or its contrary, there would in one manner be three causes, in another four. For the medical art is in a way health, and the building art is the form of the house, and man begets man'. So, also, as an illustration of a product of art produced from 'a part of itself which shares its name' Aristotle mentions that 'the house is produced from a house, as produced by νοῦς ; for the art is the form' (Met. VII.9. 1034a23-24).

Now one might think that the medical art is only 'in a way' health because it is the form of health without matter; so the house is produced by something which only in part 'shares its name' because it is produced by the form of the house without the matter. Indeed, Aristotle quite explicitly calls the art, not just the form(of the product), but the form without the matter, on several occasions. At PA I.1. 640a32, for example, he says that 'the art is the λόγος of the work without the matter'. More fully, having explained at Met. VII.7 1032a32ff how 'from art proceed the things whose form is in the soul of the artist' (a32-b1), Aristotle concludes thus: 'So that it follows that in a certain way health comes from health and house from house, that which has matter from that without

matter; for the medical art and the building art are the form of health and the house, and I mean by substance without matter the τὸ τί ἦν εἶναι ' (b11-14).⁴³

In such passages, then, we find confirmation of the view that forms without matter exist in the soul - and only in the soul. And we are to surmise, moreover, that their existence, as such, is their existence as universals. For the artist must surely be understood to work by virtue of a conception of his product.⁴⁴ And in any case, a consideration of the notions of form and matter, as we have seen, yields the same result; for forms, as properties, are the formulable aspects of things; they allow the subsumption of things under concepts; with matter, they go to constitute particular things; without it they are pure concepts: 'There is a difference', as Aristotle says at Cael. 1.9. 278a8, ' between the being of circle and this particular circle, the one being form, the other form in matter, i.e. a particular ... (the one is) form and shape, (the other) form combined with matter; and any shape or form has, or may have, more than one particular instance' (a8-10, a14-16).

The plausibility of taking a form-without-matter as a concept strongly supports the 'conceptual activity' interpretation of the FWM doctrine. But it also raises an acute difficulty: if a form-without-matter is a concept, surely the reception of the form without the matter can only be the reception of a concept. But one can clearly receive a concept - a sensible concept - without perceiving: one can conjure up or imagine a red thing. And while receiving some present particular as an instance of a sensible concept

the red as red - may be to perceive, Aristotle's FWM doctrine does not seem to introduce particulars into the perceptual process. On the basis of our analysis of the notion of a form-without-matter, in short, the FWM doctrine supplies perception with a concept, but with no percept.

But our condemnation of the FWM doctrine is perhaps premature. For this doctrine may involve particulars in sensing by means other than the notion of a form-without-matter itself. The notion of 'reception', in fact, may have just this function. For to say that sense receives the sensible form without the matter surely has the implication that something sends it to sense. Indeed, first-stage or potential $\nu\hat{o}\hat{\nu}\varsigma$ ⁴⁵, which is exercised over particulars, is also said to receive the forms (429a15-16). Both sense and first-stage $\nu\hat{o}\hat{\nu}\varsigma$, then, may be meant to be sent forms by the particulars which are said to affect them. But if so, perhaps the gap left by our analysis of a form-without-matter as a concept is thus filled.

This conclusion, however, would seem to be optimistic. For so far, though we have brought in the idea of a particular in some way responsible for the reception of a concept, we have failed to bring it in as the subject of the predication involved in perceiving(or, here, thinking).

Are there, then, any other considerations which might overcome our problem? One might note that no conceptual activity, for Aristotle, deals entirely with

universals. Aristotle is quite insistent, for example, that thought cannot occur without a *φάντασμα* ;⁴⁶ thinking, that is, seems to involve a particular representation from which relevant features are somehow abstracted, irrelevant ones ignored. If this is right, perhaps one could argue that to receive the form without the matter is in fact to receive a particular form - different kinds for different mental activities - as a universal.

This view, however, lacks plausibility. For surely even if, in entertaining a concept, thought must have an image, it need not take that image to represent a particular which it then subsumes under the universal abstracted from it. One may, for instance, have an image of a man without its being an image of any particular man - even if it is an image of something 'with matter', i.e. of something which, if it existed, would be an individual. Moreover, though one can, in contemplating the concept of man, have an image of, say, Socrates, it does not follow that to contemplate the concept of man is to think that Socrates is a man.

Hence the fact that thought has particular representations when it contemplates surely does not mean that its thinking of universals is its subsuming these representations (or what they represent) under the universals. This fact, then, has to do with the mechanism of thinking, not with its essential nature. But to sensing, of course, received particulars are

essential; they are the subjects of sense's conceptual activity. Yet if the FWM view is to apply to both thought and perception, it cannot make reference to particulars as the subjects of a predication, for particulars are not so involved in thinking; so the FWM doctrine must fail adequately to express the nature of sense. The fact that particular representations are involved in both thought and perception, in short, cannot solve our problem, for it cannot enter into the concept of having a form-without-matter.

Unless we are overlooking a decisive consideration, then, we must acknowledge that the FWM doctrine, on this interpretation, neglects a most important feature of perception: the reception of particulars. Indeed, Aristotle seems to require sense to receive not just particulars, but particular forms. His official doctrine in DA II.6, after all, is that the special, per se objects of sense are the colours, flavours, odours, and so on, inhering in objects - and not those objects themselves. But then the particulars sense is confined to must be particular sense-qualities, and not the individuals having those qualities. For if sense received, not particular forms, but particular objects under universal characterizations, then, if the proper objects of sense are the properties as such, the proper objects of sense would, absurdly, be universals. If sense, then, must be understood to receive particular forms, surely an interpretation of the FWM doctrine on which it receives universal forms must be rejected.

Yet perhaps this reaction is too strong. If the FMM doctrine itself does not supply perception with a particular, then the FMM doctrine is not so complete an account of perception as one might like. But so long as this doctrine does not exclude sense's reception of a particular, it might be desirable to retain it: there is no reason to think, for example, that this doctrine must state that sense receives the particular forms or sense-qualities in sensing; and there is some reason to think, as we shall see, that, in conjunction with Aristotle's refined assimilation doctrine, this doctrine says something interesting and worthwhile about perception.

That the FMM locution does not exclude the reception of a particular is clear. At DA.III.4, 429a15-16, as will be recalled, Aristotle claims that potential $\nu\omicron\upsilon\varsigma$ - $\nu\omicron\upsilon\varsigma$ exercised over particulars - is 'receptive of the forms'. And his discussion at DA. III.4.430a2-9 of how thought is thinkable is also relevant: 'And it is itself thinkable just as the objects of thought are. For in the case of those things without matter, that which thinks and that which is thought are the same; for the theoretical knowledge and the thus known are the same... But in the case of those things having matter, each of the objects of thought is present in potentiality. So that $\nu\omicron\upsilon\varsigma$ will not belong to them (for $\nu\omicron\upsilon\varsigma$ is a potentiality for being such things without matter), but the thinkability will belong to $\nu\omicron\upsilon\varsigma$ ' (430a2-9).

Aristotle seems to be distinguishing here between pure concepts, which exist as objects of thought, and particulars, which are potential objects of thought. (The particulars themselves must surely be the potential objects of thought, or else the 'knowledge' and the 'known' will not differ in this case.) But of course a particular becomes an actual object of thought by being subsumed under a concept. And Aristotle, most importantly, seems to use the formula of thought's becoming an object without the matter to express its making the particular such an actual object of thought. These passages, then, would seem to provide adequate assurance that the FWM locution, if it most naturally applies to purely conceptual activity, does not exclude cognitive contact with particulars or concept-application.

If this is right, we are not forced to reject this interpretation of the FWM doctrine. We shall have to concede, however, that, so understood, this doctrine fails to give the essence of perception - one can, after all, think and imagine sensible concepts. But perhaps the FWM doctrine does not have such an ambitious aim; it may be intended only to identify an important characteristic of perception - and one which enables us to distinguish perception from ordinary alteration. At this task the FWM doctrine surely succeeds: if perception does involve concept-application, this is clearly an important feature of perception; and it is also a feature which establishes perception as a recognizably mental event. For this reason, and for the persuasiveness of

an analysis of a form-without-matter as a concept, we may wish to try to preserve this interpretation of the FWM doctrine.

This will be possible, however, only if other features of Aristotle's thought can supplement the FWM doctrine in the required way: by supplying sense with a percept. But we may now suggest that Aristotle's refined assimilation doctrine can do just that - even as the FWM doctrine helps us to establish its significance.

Aristotle's refined assimilation doctrine, as will be recalled, is that sense undergoes an assimilation to the object of sense which has the status of an *ἐνέργεια* and so does not deprive sense of the power to be so assimilated. Ordinary physical change, as we have seen, cannot be a case of this special kind of *πάσχειν*. But awareness of a sense-quality can: an object of awareness is immanent in the awareness; the sense-object is not an end to be attained, but is at once attained, and so awareness of the sense-object is both indefinitely continuable and immediately repeatable.

So much, indeed, was clear from our discussion of Aristotle's refined assimilation doctrine; we simply lacked justification for the view that sense's *πάσχειν* is special because cognitive. But Aristotle's FWM doctrine would seem to ease this difficulty, for that doctrine does make sensing a kind of conceptual activity - an activity which involves grasping a universal. In this light one may suggest that to take a particular sense - quality as the object of a mental act - and so to

undergo an event which is in fact a special kind of *πάσχειν* - is just to grasp it as a universal or become aware of it as a sense-quality of its kind: to receive a loud noise as the object of a mental act, that is, may be to take some item stimulating one's eardrums as a loud sound. Aristotle's FWM doctrine, then, would seem to justify and clarify the view that sensing is a cognitive assimilation of the sensor to the object of sense. And this makes it reasonable to suppose that his refined assimilation doctrine expresses just such an assimilation of the sensor.⁴⁷

For this view to be satisfactory, however, Aristotle's refined assimilation doctrine must be able to correct the deficiency of his FWM doctrine taken alone: it must establish that a percept is delivered up to sense. The notion of ordinary *πάσχειν*, as we have seen, itself implies that a particular agent acts on sense - though it implies only this. But the notion of special *πάσχειν*, it may now be seen, implies also that the particular is received by sense as the subject of its judgment. For if the special kind of *πάσχειν* is special as cognitive, it is a *πάσχειν* as an assimilation to a particular. But for sense to be cognitively assimilated to a particular, it must surely receive that particular as the subject of its judgment: it could become like a particular red thing in the special, cognitive way, only by becoming aware of that red thing as red. The notion of the special kind of *πάσχειν*, so understood, implies, then, not only that a particular

sense-object activates sense, but also that it is received by sense as the subject of its activity, viz. concept-application.⁴⁸

That the refined assimilation doctrine is aimed at activities with particular objects seems clear. In DA II.5, for example, Aristotle illustrates the activity of the second potential knower by knowing this a as a. And he is careful throughout this passage to suggest that the knower is 'led' or 'brought' to contemplate by an external particular. Similarly, in DA III.4 he restricts 'πάσχειν' to potential νοῦς, or νοῦς exercised over particulars. Indeed, the reason that actual νοῦς' awareness of a universal does not count as a case of special πάσχειν - even though one might wish to understand that object as an 'affection', as it were, of an act of mind - now also seems clear: for if, in an assimilation, a patient becomes like a particular agent, in a cognitive assimilation it becomes like a particular agent cognitively; and sense or νοῦς could not become like a particular red thing by contemplating redness.

If this is right, then Aristotle's refined assimilation doctrine would indeed seem to complete his FWM doctrine, even as the latter helps us to interpret the former. For if sense's special πάσχειν is interpretable as a cognitive assimilation on the basis of the FWM doctrine, it must surely be interpreted as such an assimilation to a particular on the basis of the refined assimilation doctrine. Hence, for sense to undergo the special kind of πάσχειν would be for it to take a particular as an instance of a universal - to take the

red as red. And for sense to receive the form without the matter would be for it to do the same: it would receive the concept of redness as a characterization of a red object.

Aristotle's view of perception, on this interpretation of his FWM and refined assimilation doctrines, might be thought to have some merit. But at this point one must ask whether this is, in fact, his view of perception: does perception, for Aristotle, necessarily involve the subsumption of particulars under concepts? To answer this question, then, we turn now to Aristotle's statements on perception elsewhere in the corpus.

Our first stopping-point must be De Anima itself. And here we may be drawn to Aristotle's view that sense is a κριτική faculty.⁴⁹ For a κριτική faculty would be a faculty of judgment or discrimination - although Aristotle generally seems to mean only the latter. But even discrimination, if it does not necessarily involve full-fledged concepts or judgments, would seem to involve some kind of identification or recognition. And so to call sense a 'κριτική faculty' would seem to suggest that to sense is to be aware of something as F - so long as we do not take that phrase in too intellectual a fashion. To be aware of the red as red, for example, may simply be to discriminate it in this respect from other items.

The important question, however, is not whether sense does, for Aristotle, judge or discriminate, but whether such an operation is a necessary condition of

perception. But this question, it might be thought, is not clearly answered. The fact, for example, that Aristotle cites perceptual judgments⁵⁰ is not decisive, since he may well conceive of perceptual judgments as a hybrid of thought and perception. And so, the fact that sense itself is said to discriminate⁵¹ items does not mean that it is conceived of as necessarily doing so: sensing may allow for discrimination without, necessarily, actually involving it. If this is right, then DA offers no firm support for our interpretation of the FWM doctrine.

This conclusion, however, perhaps relies too heavily on the fact that Aristotle does not state - as a modern philosopher would - that sense is necessarily κριτική. For he does state that sense is a κριτική faculty, and this may well be his way of making the same point. Nor is it an inadequate way: faculties, after all, are defined by their operations, so it would be curious to identify a faculty by an operation which was not essential to it: artistic ability may enable an artist to collect fees, but we would hardly call artistic ability a 'fee-collecting faculty'.

The concept of κρίνειν, moreover, is brought into central discussions of perception in De Anima. Aristotle, for example, defines a special object of sense in terms of κρίνειν: a special object is what is truly judged by its sense, not what is truly judged when it is judged (418a11ff). He also discusses e.g. the problem of simultaneous perception in terms of simultaneous discrimination or judgment, introducing the primary sensory power as what unifies perceptual judgments (426b8ff). These points, then, suggest an essential connection between sensing and κρίνειν.

If De Anima nevertheless fails to provide decisive evidence for our view, we must turn to De Sensu. Here, indeed, we find some statements which seem most supportive of this view. In the course of a discussion of co-instantaneous perception, for example, Aristotle observes that when people are deep in thought, or in a fright, or hearing a loud noise, 'they do not perceive what is brought before their eyes' (DS.7.447a16-17). And later Aristotle uses the inconceivability of a person's failing to notice (*λανθάνειν*) himself or anything else in a continuous time to undermine the notion of an imperceptible time (7.448a28-b1). Finally, in an attempt to undermine the view that the eye consists of fire, because, when pressed or moved, fire appears to issue from it, Aristotle says that 'unless it is possible for one, perceiving and seeing an object of sight, not to notice it (*λανθάνειν*), it is necessary for the eye to see itself on this theory' (2.437a29-31).

These passages, it would seem, do suggest that some form of cognition is a condition of perception. Unfortunately, however, they do not provide evidence so strong as one might like. For while in the first passage Aristotle seems to use 'perceive' to mean 'be perceptually aware of', this would be decisive only if we were willing to infer that 'perceive' must always be so used.⁵² And in the second two passages, it will have been noticed, the important claims appear in an 'if'-clause, and so may not be a fair statement of Aristotle's view. These claims, moreover, are stronger than Aristotle would appear to require - and so we may suspect him of haste. For the inconceivability of perceiving something without ever being able to be

aware of it would be enough for Aristotle's argument. But only the inconceivability of ever perceiving something without being aware of it would be enough for our interpretation of Aristotle's view.

These statements, then, though they provide tentative support for our interpretation, are not conclusive. For our purposes, moreover, they suffer from the defect of involving a concept itself in want of elucidation - *λανθάνειν* - as does Aristotle's view that sense is *κριτική*.

Unfortunately, a passage which does not suffer from this defect would also seem to undermine our interpretation. For at Met.XIII.1087a19-20 Aristotle says that 'sight sees the universal colour incidentally, for this colour which it sees is a colour', thus suggesting that the colour is not taken as a universal, but just happens to be one. But Aristotle's aim in this passage is to show how thought can be of particulars, so his point might be only that the external referent of perception (and actual thought) is a particular (which happens to be an instance of a universal), and not that there is no content of perception and thought. That is, Aristotle's claim does not exclude the possibility that perception and actual thought are of particulars in virtue of subsuming them under concepts- it merely stresses that they are of particulars. If this is right, then this passage does not provide conclusive evidence against our interpretation.

Favourable to our interpretation, on the other hand, are some passages in the Posterior Analytics - passages also free of unelucidated concepts of mental activity. At An. Post. I.31.87b28-30, for instance, Aristotle claims that 'even if perception is of what is such and such, and not of individuals, it is still necessary to perceive an individual at a place and a time'.

Aristotle is insisting here, as he does in DA, that when one perceives, one perceives an individual. But his insistence is motivated here by what he **seems** to state as an obvious fact: that 'perception is of what is such and such'. But by this, it seems clear, Aristotle must mean, not that the individual one perceives is in fact of some kind, but that one perceives it as of some kind. For otherwise, he could not claim that perception is not of an individual (though one perceives an individual): for referentially perception is as much of an individual as of an F. Aristotle's point, then, must be that the intentional object of perception is not an individual - one does not perceive Callias as Callias, but as, e.g., tall, pale, and softly-spoken.

This view would seem to be confirmed by Aristotle's later claim in the Posterior Analytics that 'though one perceives the particular, the perception is of the universal, e.g. of man but not of Callias the man' (II.19. 100a16-b1). Again, Aristotle must mean that one perceives this particular as a universal, as a man, and not as a particular, Callias the man; for obviously, referentially Callias is as much the object of perception

as the man. These passages, then, in suggesting a distinction between what might be called the 'referential' and the 'intentional' object of perception - between the object, however characterized, which causes perception, and what this object is perceived as - thus give strong support to our interpretation of the FWM doctrine: that to perceive is to receive an individual as of some kind.

It might be suggested, however, that this interpretation of these passages is misguided. For when Aristotle says that 'perception is of what is such and such, and not of individuals', he may merely be making the point, not that one's perceptions are of individuals as having certain qualities, but that one's perceptions are correlated with such qualities. On this interpretation, that is, when one sees a red object, it is not that one sees an object as red, but that one's sight is affected by the redness of the object.

Consider, for instance, that Aristotle might talk of alteration in the same kind of language, e.g.: 'alteration is by what is such and such, and not by an individual, still a thing is necessarily altered by an individual'. Aristotle's point here would be that the proper description of the cause of the alteration makes reference to the quality in terms of which the patient is altered: it is the radiator as hot, and not as this individual appliance, that is the properly described cause of the room's heat.

In the same way, Aristotle's point in the Posterior Analytics may be that one's perception is of what is such and such, when one perceives an individual, not in the sense that one perceives it as such and such, but in the sense that as such and such it is the cause - and hence properly the object - of perception. For

indeed, Aristotle identifies the cause and object of perception; but what, in turn, it is for something to be the object of perception, one might think, is not here conveyed: our referring to the cause-object of perception in an intentional way does not mean that perception must be construed to be an intentional process; one might perceive an F, but not perceive it as anything at all.

But this suggestion is not altogether convincing. For if an F is to be the object of perception in a way that an individual is not, surely - since such objects are either referential or intentional - it must be the intentional object of perception. The alternative is to claim that there are two kinds of referential object of perception: an individual under any description; and an individual under its causal, hence sensible description; for then an individual, as such, would not be the referential object of perception in the second sense. But this position is at best peculiar and arbitrary, and so it is implausible to attribute it to Aristotle.

Further support for the intentional object interpretation of this passage, indeed, is to be found in Aristotle's aim here: to establish that universals are implanted in the soul by perception. For while Aristotle might be claiming that they are so implanted because the cause-object of perception is, properly, a sensibly qualified object, it seems more probable that he is describing how they are implanted - viz. by the object's being perceived as sensible. If this is right, then these passages in the Posterior Analytics would

seem to favour the intentional object interpretation.

But not even these passages, though providing strong evidence, are decisive. For even if Aristotle is making a distinction here between the individual perceived and what it is perceived as, he need not be implying that whenever one perceives something, one necessarily also 'has a perception of something', i.e. perceives it as something. It would be enough that perception can implant a universal in the mind, for example, for Aristotle's story of how concepts are acquired in An. Post. II.19 to go through. The same is true of I.31: Aristotle's argument that perception is not demonstration would be justified if perception were sometimes, and not always, cognitive.

Finding conclusive evidence for this view, then, would appear to be a problem. But an even greater problem, perhaps, is posed by Aristotle's faculty psychology. For if one can be said to perceive a present particular as F, can one not also be said to think of it as F? But how can two distinct faculties have one and the same operation, for faculties are distinguished by their operations?⁵³

This problem may prompt two possible responses. In order to preserve the boundary between thought and perception, and to allow perception to use concepts, as this interpretation requires, one might deny that it is proper to say one can think of a as F; one must rewrite this, if one is to speak strictly, as the perception of

a as F. That is, one might insist that Aristotle reserves for the faculty of perception the subsumption of present particulars under at least perceptual predicates.

Indeed, Aristotle calls the perceptive power a *κριτική* faculty,⁵⁴ so even if, contrary to the conceptual activity interpretation, he does not think it is necessarily *κριτική*, perceptual *κρίνειν* will still be the work of this faculty. Moreover, there is some evidence that Aristotle's difficulty is how *νοῦς* can be of particulars,⁵⁵ not how perception can involve concept-use; for *νοῦς* at places seems restricted to universals, particulars the domain of at least incidental perception.⁵⁶

It must be confessed, however, that there are difficulties with this view. The same passages that seem to restrict *νοῦς* to universals would seem also to restrict perception to particulars.⁵⁷ And if Aristotle sometimes seems to imply that *νοῦς* is only of universals, in practice he cites examples of *νοῦς* being exercised over particulars.⁵⁸ More important, the above view seems extravagant: for it must be acknowledged that there can be abstract thought of perceptual concepts; hence, though the two faculties of *νοῦς* and perception will never both be said to be operating in the same activity (for on this view *νοῦς* cannot use its concepts over particulars, and the perceptive faculty cannot use its concepts purely), they will still be two faculties which do the same thing in that they deal with the sensible kinds.

But if this view seems unacceptable, we would seem to be faced with the necessity either of preserving a sharp distinction between the two faculties of νοῦς and perception, while abandoning the conceptual activity interpretation of the FWM doctrine, or of abandoning this distinction, while preserving this interpretation. On the first alternative we should be saying that concepts are the preserve only of νοῦς : to perceive a as F is actually to perceive a and to think of it as F: and one can perceive it without so thinking of it. This alternative requires us to give up our understanding of perception as an activity involving concept-use.

On the second view we should rather be saying that one can perceive a as F (as well as think of it as F), for perception is a complex activity which involves thought; but it is still perception, for some kind of rudimentary thinking, on this view, will be a necessary condition of perception. Concepts, then, will still, in one sense, be the preserve of νοῦς ; it is just that perception will have become a rationalized faculty (DA 432a30-31). This view, of course, requires us to abandon the sharp division between perception and thought. But as A.C. Lloyd points out, Aristotle himself, aware of the limitations of a faculty psychology, has his own doubts about its ultimate usefulness.⁵⁹

Aristotle's FWM doctrine, in fact, may express just his willingness to broach the boundaries established by his faculty psychology in order to understand perception in distinction from ordinary alteration. For if the

evidence that perception, for Aristotle, is necessarily $\kappa\rho\iota\tau\iota\kappa\acute{\eta}$ is not conclusive, it is nevertheless strong; nor is there any evidence at all denying this position. And in any case, that perception, for Aristotle, is the sort of event which fundamentally, if not invariably, involves $\kappa\rho\acute{\iota}\nu\epsilon\iota\nu$, cannot be doubted. So it may be possible, if necessary, to weaken the conditions for perception on this interpretation of the FWM doctrine⁶⁰ - sense, after all, is said to be what can receive the sensible forms - while retaining its central insight: that perception in some way involves the use of concepts.

CONCLUSION

Aristotle's three formal characterizations of perception, if not as finely wrought as one might have liked, seem in the end to contain some interesting and philosophical thoughts about the nature of perception. Aristotle does not portray perception merely as a physical change of a sense-organ, as our consideration of the refined assimilation and form-without-matter doctrines has seemed to show. But nor does he see perception as a representation of physical properties to perceivers by means of categorially different, mind-dependent qualities - as his unity-of-actuality doctrine might have stated. For that doctrine, as we have seen, instead seems to amount only to the trivial view that sensed sense-qualities depend on sensing; and this cannot tell us how to understand sensing.

Aristotle, however, does seem to offer us an alternative; that perception is a kind of conceptual activity. For his refined assimilation and form-without-matter doctrines would seem to portray perception as the reception of a particular sensible as a sensible. And although we have furnished neither a precise formulation nor an assessment of the view expressed by these doctrines, we may hope that these doctrines, if nothing else, provide at least the materials for an interesting and persuasive view of perception.

Notes to Chapter I.

1. This chapter owes much to A.C. Lloyd's treatment of Aristotle's view of the special sensibles in 'Was Aristotle's Theory of Perception Lockean?'. 'The unity-of-actuality doctrine' is Hartman's term for the doctrine of III.2. See Substance, Body, and Soul, p.195, for its introduction.
2. Those who seem to find the stronger view the more plausible include Hartman, pp.177-188, 193-196, D.W. Hamlyn (Aristotle's De Anima, Books II, III), pp. 123-126, and G.R.T. Ross (Aristotle De Sensu and De Memoria), p.8, pp.149-150. R.D. Hicks (Aristotle De Anima), p.438 and W.D. Ross (Aristotle De Anima), pp.275-277, are non-committal on this point. G. Rodier (Aristote Traité de L'Ame, vol.II), pp.373-374 and A.C. Lloyd, pp.135-138, support the weaker reading.
3. The weaker reading of this passage is not incompatible with a dispositional view of the sense-qualities; but it does fail to suggest or support one in any way. The stronger, on the other hand, is incompatible with a non-dispositional view, for it is a statement of the dispositional. For ease of exposition, then, the weaker reading has been aligned with the non-dispositional, the stronger with the dispositional.
4. See respectively, DA II.12. 424a25-26; III.2. 426b 29-427a9, 7. 431a17-4 31b1, and DS 7. 449a18-22; DA III.7. 431a12-14; 9. 432a31-b4; and 7.431a27-29 and DS 7. 449a15-18.
5. Proponents of the first reading include Ross (p.276; and see his Aristotle's Physics, pp.361-2, 540-1), Hamlyn (p.123), Hartman (e.g. pp.179-180), Hicks (p.438), and Rodier (pp.370-1).
D.O.M. Charles argues for the second reading in his dissertation Aristotle's Philosophy of Action. Note Appendix II pp.15-19 for his treatment of this expression in the psychological treatises.
For a different interpretation see G.E.M. Anscombe, Three Philosophers, pp.54-55 and C.J.F. Williams, 'Form and Sensation', p.151.
6. Lloyd (p.136) claims that the weaker use of this expression is the more usual, citing E.Buchanan, Aristotle's Theory of Being, p.51, in support of this claim. The weaker use of this expression, however, is not invariable, as Buchanan also notes on p.51, footnote 1, of that study.
7. For further examples see Phys. VIII. 4. and GC II.2.

8. Physics VIII.4, however, does not seem altogether reliable; consider Aristotle's mis-statement of his usual position on knowledge (255a30-b5). Consider also that his distinctions are subject to a different reading: the potentially₂ hot is prevented from giving off heat (not from heating something else), and hence is only potentially hot; the potentially₂ 4' x 4', when held in a place 3' x 3', is prevented from fully being 4' by 4' (and not simply from taking up a space 4' x 4'), and hence is only potentially 4' x 4'. But on the basis of this schema, the sense-qualities in second potentiality would be mere potentialities or dispositions, not actual sense-qualities potentially being sensed.
One might also note that even if the heating is meant to count as the second actuality of the hot - otherwise only in second potentiality - there is then a problem: why is coldness, as the actuality of a potentiality possessed in virtue of heat, also not the second actuality of heat?
9. See e.g. DA II.5, 417a21-29, 2, 412a 22-27; Met. IX.5, XIII.10, 1087a15-25; Phys. VIII.4, 255a30-256a3; An. Pr. II.21, 67b2-4; NE II.1.
10. See DA II.8, 419b4-9.
11. See further Met. V, 2, 1014a20-25, IX.8 1050a23-b2, and DA II.2, 414a11-12.
12. See all of DA II.5 (and, e.g. II.4, 415b24).
13. See the passages cited in Bonitz (Index Aristotelicus) 572a37 ff. (Hereafter all references to 'Bonitz' will be to passages in the Bonitz Index).
14. See G.R.T. Ross, p.8, pp.140-150; and Hartman, p.196.
15. The assimilation doctrine, as we shall see, may also express more than this, viz. the cognitive assimilation of perceiver to object of perception. But the dispositional view of the sense-qualities is compatible with this interpretation, so long as the actual objects of sense are taken as indicative of real differences in objects.
16. It seems fair to say, however, that one ought not to place too much weight on Aristotle's terminology. In Cat. 7, 7b15-8a12, for example, Aristotle makes his point about dependence in language suggestive of a non-dispositional theory: even though sense-object and sensing are relative terms, he claims, the sense-
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object is prior to sensing; hence, objects will be hot, sweet, bitter, etc., even if there is no sensing.

Here again Aristotle's point may be put in the language of DA III. 2: actual αἰσθητὰ do, but potential αἰσθητὰ do not, depend on sensing. Only here the suggestion is that potential αἰσθητὰ exist as αἰσθητὰ apart from perception. A dispositional theorist, then, will have to say that Aristotle is using 'sweet', 'white', etc., of the sense-qualities as powers: apart from perception, objects have powers, based on further actual qualities, of producing perception of sweetness, whiteness, etc. Ross (Aristotle's *Metaphysics*, Vol. I, p.278) suggests just this view of Aristotle's point here.

This passage, then, calls for the dispositional interpreter to give a more complex meaning to Aristotle's words than is apparent. It will be seen, nevertheless, that this interpretation of Aristotle's words at least does them no violence, unlike the non-dispositional interpretation of his words in *Met.* IV.5.

17. Neither of these views in itself invites the conclusion that our perceptions are always right (which, coupled with the claim that there are contrary perceptions of everything, yields a denial of the principle of non-contradiction in a strong form), so it is hard to see what Aristotle would have to gain by undermining either view.
18. See Ross (p.276), Rodier (p.374), Hicks (pp.439-440) and Hamlyn (p.124) on the question of who held the view Aristotle criticizes.

The Democriteans, in fact, did seem to draw this conclusion (GC I.2. 315b33-316a2). Nor can it be denied that this view is possible, although the relevant sensible qualities then rather implausibly have the status of pain. In making this argument, Aristotle is thus upholding our ordinary view that perception by the special senses may be a cognitive event.

19. Aristotle establishes certain points for all of the sense-objects in these chapters. The sense-objects, for example, all act through a medium (419a13-15, 419a17-20, 418a26-28, 418b34-35, 420a4-5, 421b9-13, 423b4-8, 423b17-20, 423b26). None of the sense-objects affects the senses when placed directly on the sense-organ (419a12-13, 419a28-30, 421b17-18, 423b20-26).

The sense-objects of any special sense all belong to the same genus, and hence range between two extremes (420a26-29, 421a26-421b3, 422b10-14, 422b23-34). Each genus of sense-object, and its denial, are in different ways the object of the relevant special sense (421b3-8, 422a20-34, 424a 10-15).

20. Indeed, the notion of the actually diaphanous itself implicitly brings in sight, for the actually diaphanous is the actually transparent or see-able through. See R. Sorabji, 'Aristotle on Demarcating the Five Senses', p.55, note 2. Sorabji, however, does not take the dispositional interpretation.
21. DA II.8, 419b9-27, b33-420a2, a19-26.
22. Although DA II.8, 420a 30-33 might be used to conclude that the vibrations of the air, for Aristotle, are the matter for sound as we experience it, which exists as such in this matter (see Rodier, pp.278-300), it is not in fact thus incompatible with the dispositional view. For to say that it is not the sharp which is fast, or the flat slow, but the movement, might be to say that the sound as we experience it is not fast or slow - that would be for it to last a short or a long time - but that the physical counterparts of the experienced qualities are.
23. This may be seen, e.g., from DA II.5. 417a2-9 and III.7. 431a4-5.
24. On this view, the sense-quality does not produce something in the ordinary sense of 'produce'. But perhaps that is why Aristotle says 'smell, if it produces anything, produces smelling' (424b6).
 And see Rodier (p.371) for the view that Aristotle suggests in DA III.2. 426a 2-6 that the sense-qualities are unmoved movers of the senses.
25. It might rather be argued, as Lloyd seems to argue (p.142), that Aristotle is using his terms consistently, but is re-evaluating his initial proposition, and concluding that the sense-qualities are in a plain sense actual apart from our experience of them. That is, in his renewed questioning, Aristotle is asking, not whether inanimate bodies perceive, but whether the sense-qualities, as we know them, exist in bodies apart from experience. If this is right, then this passage would be strong evidence for the view that Aristotle did not subscribe to a dispositional analysis of the sense-qualities, but, toying with the idea here, quickly rejected it.
 This interpretation, however, seems implausible. For Aristotle limits smells and sounds to the affection of inconstant and indeterminate bodies (424b15-16). But it would be most peculiar to think that only such bodies could be made to have smells and sounds, as we know them, independently of experience. Are we to think

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that solid bodies cannot? Aristotle's questioning, in fact, seems best taken as an attempt to discern what kinds of bodies are affectable by the various sensibles, however construed, not what kinds of bodies can support the sense-qualities, as we know them, apart from perception; for if any body can, then surely all can.

26. On the status and role of the hot, cold, moist and dry, see e.g. GC II.2, 3, 7, 8; Meteor. IV; PN passim.
27. Aristotle, as will be seen, seems to base the non-tangible special sense-qualities in the tangible. Yet it is unclear whether the tangible qualities are in fact to be given a non-dispositional account. For Aristotle identifies each of the primary tangible qualities with a certain function, so it is arguably only the tangibles as powers that must exist in bodies for scientific purposes; the tangible qualities as we know them, that is, might not be required so to exist. Aristotle, however, does not suggest any bases for the tangibles as powers, and so we have assumed that they are to be understood non-dispositionally. (And see A.C. Lloyd (p.140) for an argument otherwise justifying this position). But it would not affect any of the arguments in this paper if they are in fact to be understood dispositionally.
28. And note Aristotle's earlier reference to τὴν δύναμιν ἣν καλοῦμεν χυμὸν (DS4. 441a25).
29. See, e.g., DS 5, 444a24-27, 444a34-b2, and 4. 442a11-13.
30. For further examples see Meteor. IV, where one might note that the sensibles are said to be powers (8.385a1-4).
31. See DS 4, 441a4-33, 5.443a22-443b1-3.
32. See e.g. GC II.7-8, Meteor. IV, and PN passim.
33. Indeed, the earlier theory of odour Aristotle considers (DS 5, 443a22-443b1) might well be an attempt to give an account of odour in terms of more primitive qualities. If so, it is most amenable to a dispositional interpretation.
34. For matter as genus, see Bonitz 787a19-22. And for these uses of 'in', see e.g. Phys. IV.2, 210a17-18 and a 20-21.

35. Aristotle, for example, seems to think that specific proportions of the extreme qualities in a genus of sense-qualities would be correlated with the intermediate sense-qualities. He himself essays some correlations, suggesting, e.g., that the pleasurable tastes depend on mixtures in calculable proportions (DS 4. 442a17-18). See further 3. 440b19-22 and 4. 442a13-18.

36. See Sextus Empiricus, MVII 135. Aristotle also mentions the Democritean theory at e.g. GC I.2 315b6-15, 8. 325b34-326b6, DA I.2. 404a25-31, Met. IV.5. 1009b11-17.

37. See e.g. GC I.2, 8, Phys. VI.1. 231a21ff.

38. That the sense-qualities are divided with their bearers is clear from Aristotle's citation of this view to explain the finitude of the species of the sense-qualities (445b21-24); since the minute objects must be taken to be qualitatively the same as the larger, there cannot be more species than appear to us (445b24-446a2). This of course is not so much an explanation of the finite number of species as an assertion of it, for there might have been infinitely many species qualifying macro-objects.

39. Aristotle's positive answer (445b21-446a22) is admittedly difficult to follow in detail. But his view, more fully, seems to be that a minute object in a whole is potentially perceptible in itself. Separated from the whole, if it maintains its integrity, it is potentially perceptible in the whole. Hence the minute object is never actually perceived in itself - but neither is a line ever actually divided into infinity, yet it is still to be considered potentially so divided.
 Aristotle's notion of a potential perceptible here is clearly different from his notion in DA III.2, and so cannot shed light on the latter in a straightforward way.

40. The suggestion that Aristotle's discussion of the intermediate colours at DS 3. 439b19-440a26 supports the non-dispositional view may be dealt with in the same way: talk of the juxtaposition, superposition, and mixture of the colours need not imply that the colours exist as we know them in objects; and Aristotle's own view of their mixture may be motivated by a belief that the species of actual qualities grounding the colours as powers are themselves derived from an interpenetration of the extremes.

Indeed, Aristotle's objection to the other views seems to be the inconceivability of an intermediate appearance uniform from all distances arising out of two unmixed extreme appearances of the same kind; and these 'appearances' could depend on actual colours in the objects or irreducible powers in them.

41. The view that the sense-qualities act by effluxes is discussed by Aristotle at e.g. DS 3. 440a16-21, 5. 443b1-3, 2. 438a4- 5, 438a26-438b2. (And see G.R.T. Ross' note to 2.438a5- (p.138), where he describes the Democritean theory in this connection).
42. See G.R.T. Ross on this passage, pp.174-176, esp. p.175.
43. DA II.6. 418a24-25, III.1. 425b5-6, 3. 428b22-24.
44. For various different views of Aristotle's claim that perception by the special senses of their special sensibles is always true - qualified at DA III.3. 428b18-19 - see the commentators of DA and DS, especially Hamlyn. And see Hartman, p.175-188 and I. Block, 'Truth and Error in Aristotle's Theory of Sense Perception'. On Met. IV.5, where this doctrine is also asserted, see A.J.P. Kenny, 'The Argument from Illusion in Aristotle's Metaphysics' and M. Scholar 'Aristotle's Metaphysics 1010b1-3'. And for a review of the different interpretations see C. Kirwan (Aristotle's Metaphysics Books Γ , Δ , and E), p.111.
45. DA II.6. 418a11-16, III.3. 427b11-12, 428a11, 6.430b29-30, Met. V. 5. 1010b2-5, But cf. DA III.3. 428b18-19.
46. It might be objected, however, that the asymmetry in terms of incorrigibility is compatible with a representative view of perception. For though sight would be incorrigible about shape-as-seen, it would not be incorrigible about shape; but it is incorrigible about colour, no less than about colour-as-seen. In answer to this fair objection one might point out that Aristotle seems to wish to deny that there is any sense in which perception of the common sensibles is always 'true' - so this would suggest that he does not believe that there are sensory items which are shapes-as-seen.
47. In Aristotle's view, memory and dreaming clearly involve representations ($\varphi\alpha\upsilon\tau\acute{\alpha}\sigma\mu\alpha\tau\alpha$). (See DM e.g. 1.450a22-b1, 450b12-451a3, and Insom. e.g. 1.459a15-23, 3.461b22-25. And see M. Schofield's 'Aristotle on the Imagination'). His view of the role of $\alpha\iota\sigma\theta\eta\mu\alpha\tau\alpha$ in perception, however, is not similarly clear. But see e.g. Insom. 2 and 3 passim, for suggestions that the $\alpha\iota\sigma\theta\eta\mu\alpha\tau\alpha$ mediate perception of objects. Aristotle's likening of dreaming of Coriscus to perception of him is especially noteworthy: 'For when the person was perceiving that which controls and judges did not call it (the impression) Coriscus, but, on account of this, called that real one Coriscus' (Insom. 3. 461b25-27).

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See also, e.g., Aristotle's discussion of the primary faculty of perception at DA III.7, 431a17-b1, where his argument might best be taken to be positing an analogy between the relation of qualities in things and the relation of sense-impressions of the perceiver.

And consider that Aristotle's discussion of actual sense-objects in DS 6 seems to make them the intentional objects of consciousness: the small increment of sound, within the sound we hear, is not an actual perceptible in itself because we are not aware of it as such (there is no isolable increment of perception within the whole act of perception corresponding to this small increment of sound) (446a3-6; 446a11-15). (With this compare Aristotle's discussion of thought of the indivisibles in DA III.6, especially 430b6-20, where thoughts are divided with the acts of thinking. And see E. Berti's 'The Intellection of Indivisibles According to Aristotle De Anima III.6'.)

One might also mention the view Aristotle seems to be working with in Met. IV.5, in his arguments against scepticism. For he seems to make $\pi\acute{\alpha}\theta\eta$ of the perceiver the immediate objects of perception (For this interpretation, see M. Scholar, 'Aristotle's Metaphysics 1010b1-3').

48. Other arguments may also be at work here. Aristotle might be saying, for example, that figure is not common on the Democritean view, since the Democriteans allow touch to have direct access to figure, but require the other senses to receive it as a qualification of mental items. Then Aristotle might be insisting only on a common way of representing the common-objects - not on an absence of representation altogether - and so his argument would not be generally anti-dispositional.

Notes to Chapter II

1. Aristotle also discusses potential and actual knowledge and knowers at An.Pr. II.21.67b2-5; Phys. VII.3. 247b1-248a6, VIII. 4. 255a30-b5; Met. XIII.10, 1087a15-25; and DA I.1 412a9-11, 22-27.
2. Ἀλλοίωσις (GC I.4 319b4-320a9), like πάσχειν in its more technical sense (GC I.7-9), is a change in quality. See further Bonitz, 34a56-61.
3. For the ἑκείνῃς - στέργησις distinction, see Bonitz 699b43-48. For the ἑκείνῃς - διαθεσις distinction, see Cat. 8. 8b26-9a10.
4. For this view see Hicks, p.357, and Rodier, p.259.
5. 'ἑκείνῃς' and 'διαθεσις' are frequently conjoined; see Top. VI.6.145a34, 4.2.121b38; PA III.1.639a22; Phys. II.1.193a25. And 'διαθεσις' is sometimes used to include 'ἑκείνῃς' as a subclass; see Cat. 8.9a10-15. Finally, 'διαθεσις' is at times used where we should expect 'ἑκείνῃς' - to refer, e.g., to the virtues; see NE II.7.1107b16, 30, 1108a24, 8.1108b11.
6. For 'οὐσις' in the sense of 'form' or 'end', see Bonitz 839a16-43 and 836a51-56. For οὐσις as the principle of good, see Bonitz 836b28-837a9. And for the distinction between occurrences κατὰ and παρὰ οὐσιν, see Bonitz 837a 18-34 (and recall, in this connection, the glossary meaning of 'στέργησις' as 'ἡ βίαια ἐκάστου ἀφαιρέσις' (Met. V.22.1022b31)).
7. For 'ἐπίδοσις' in this sense, see e.g. Cat. 10. 13a25, 27, 29 and NE I.7.1098a24.
8. Indeed, Aristotle does not seem to substitute for 'στέργησις' any expression of the form 'στεργητική F' (where 'F' stands for one of his 'attribute'-words). 'στεργητική' seems to be used mostly in logical contexts (but cf. Phys. III.2.201b26 and Met. XI.9. 1066a15, which are to do with the privative column of the list of elements). See Bonitz 700a57-61.
9. The difference between a positive and a negative change does not clearly relate to the preservation or loss of a power. Still, a connection between them might be made out: a positive change is a fulfillment, and hence a preservation, of a thing's potentialities. And although a negative change

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might equally seem to be a fulfillment of a thing's potentialities - for it has the potentiality for that change - in some places Aristotle suggests that this is so only in a derivative sense. A thing has potentialities in the primary sense only for positive attributes and changes. See Phys. IV, 5.213a1-5 and Met. VIII.4. 1044b29-1045a6.

10. Phys. VII.3.246b8-10, 17-20, 247a 3-4.
11. See Bonitz 839a16-32
12. Aristotle conjoins 'ἐξίς' and 'ούς' a number of times in the Ethics:VI.12.1152b28, 1152b36, 13.1153b29. On these occasions Aristotle seems to be thinking of the particular constitutions and habits of people.
 And note that 'τελείωσις' is often applied to the development of the young of a species. See Bonitz 752a57-b1.
 And see Met. V.16.1021b14-23 for 'τέλειον' in the sense of 'perfect for its kind'.
13. One might argue, that is, that since 'natures' may differ from individual to individual, there may be corrupt natures. (See NE VI.12.1152b28 and 13.1153b29, and recall the 'complete thief' of Met. V.16.1021b14).
14. Aquinas (Aristotle's De Anima, trans. Foster and Humphries), p.243, seems to understand 'στερητική' to function in such a way. See Bonitz 700a16-30, for στέργσις in contrast with form (εἶδος); and Bonitz 700a9-11, for στέργσις as the denial of any quality. (And note e.g. Meteor. IV. 10.388b14 and 8.385a32, where Aristotle mentions the στέργσις not only of the hot, a positive quality, but also of the wet, a negative one.)
15. See Bonitz 208a9-12.
16. See GC I.7, and for the point in general, Bonitz 459a57-60.
17. This is implied e.g. by Met. X. 4. 1055b18-27. And see further Met. V.12.1019b15-19, 22.1022b32-1023a7, and IX.1.1046a31-34.
18. Aristotle, it is true, may be claiming only that the person who has positive misunderstanding acquires knowledge by changing from a contrary, not that all potential knowers do so. But if this is right,

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then Aristotle is claiming that learners frequently have misinformation; and he is introducing a condition of the first potential knower at best irrelevant to his status as such.

Perhaps Aristotle's claim, then, is that all knowers acquire knowledge of $\emptyset$ -ing by frequently $\emptyset$ -ing. For to $\emptyset$ is in some sense, as it were, to move away from ('change from') the tendency or threatened tendency to mis- $\emptyset$. See NE II.1-4, e.g. I.1103a31-b2, for Aristotle's view on the acquisition of ἐκείνῳ.

19. 'Ἐνέργεια' and 'ἐντελέχεια' are used interchangeably. See Bonitz 253b50-57.
20. Aristotle's point, no doubt, could be that 'πάσχειν' and 'ἀλλοιοῦσθαι' must be stretched to cover the actualization of these two sorts of potentiality, in addition to that of all other sorts. But it would be curious to cite the difference between these two sorts of potentiality, rather than their similarity, as a reason for the extension of these terms to cover both.
21. See esp. Met. IX.6. 1048b18-35, NE X.4. 1174a13-b14, and NE X.3. 1174a14-b14.
22. For this controversy, see J.L. Ackrill, 'Aristotle's Distinction between Energeia and Kinēsis' and T. Penner, 'Verbs and the Identity of Actions'.
This controversy, in effect, turns on whether the concepts of ἐνέργεια and κίνησις apply to events under any description, or to events under essential descriptions. Aristotle's tense-criterion, taken in itself, suggests the former, while his procedure in Met. IX.6, coupled with his emphasis on the 'form' of an event in NE X.4, suggests the latter.
This controversy, complicated, e.g., by the possibility of contingently identical events with irreducible, and conflicting, essential descriptions, cannot be fully dealt with here. But the position we have taken, if wrong, is at least adequate to Aristotle's point in our context. For even if Aristotle holds the weaker view, he would still seem to have the concept of an ἐνέργεια which is a κίνησις under no essential description (see NE X.4. 1174b7-9) - i.e. of an ἐνέργεια as understood by the stronger view. More important, he would seem to have this idea or kind of ἐνέργεια in mind in DA III.7: he both claims that the perceiver's change is an ἐνέργεια and denies that it is a κίνησις; and he is evidently referring to this change transparently. At worst, then, we shall have to substitute 'pure ἐνέργεια' for 'ἐνέργεια' in our discussion in order to conform to the weaker view.

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On this see C.C.W. Taylor's discussion of *κίνησις* and *ἐνέργεια* (to appear in a forthcoming study by J.C.B. Gosling and C.C.W. Taylor) and note his discussion of 'complete' and 'incomplete *ἐνέργεια*', which further supports our view of DA, III,7.

23. We need not understand Aristotle to be citing house-building, a paradigm case of *κίνησις*, as a case of the special kind of *πάσχειν* at DA II,5. 417b8-9. For he may be citing it only as an event which is not a case of the ordinary kind of affection or alteration.
24. Met. V,15. 1020b30 and 1021a15, e.g., state that action and affection are correlatives. But for *πάσχειν* in its narrow sense see Bonitz 572a37ff, e.g. 50-55.
25. '*θθορά*' most properly applies to the passing out of existence of a substance (see Bonitz 817b4-17), and hence such a change is a *θθορά* τῆς ὑπὸ τοῦ ἐναντίου.

For the view that contraries are mutually exclusive see Bonitz 246a36-38.

26. See Bonitz 391b32-37.
27. For examples of such epithets being applied to potentiality and actuality see e.g. NE II,1.1103b.21, 2. 1103b31, Met. IX,8 1049b18.
For a locution similar to the last clause of 417b2-5, see Phys. III,3.202b9-10.
28. To undergo a *κίνησις* is continually to lose (and gain) potentialities; the examples of losing the potentiality of repeating and continuing an activity have been chosen for convenience. (And these examples would not in fact apply e.g. to circular motion, although others would).
29. Interesting corroboration of this view may be found at DA III,4. 429a29-b5, where Aristotle cites the perceiver's loss of power when acted on by excessive objects of sense, and the thinker's retention of power when acted on by excessive objects of thought, as showing that the 'ways in which that which can perceive and that which can think are unaffected are not the same' (a29-30). For this is to say that in some cases the perceiver undergoes an ordinary affection just because he loses some perceptual power.

On excessive stimulation of the senses see DA II,10. 422a 20-34, II,11. 424a10-15, II,12 424a28-32, III,2. 426a27-b7, III, 4. 429a29-b5, III,13. 435b4-19.

30. In 'εἰς, αὐτὸ δὲ ἢ ἐπίδοσις καὶ εἰς ἐντελέχειαν, ἐντελέχειαν' may stand for the activity, 'αὐτό' or 'ἄλλο' for an end the same as or different from the activity. Or the 'καί' here may be explicative: the development is into ἐνέργεια or ἐντελέχεια proper, which is a thing's activity of staying itself, so to speak.
31. A πάσχειν is most generally a passive event, one usually picked out by the passive form of a verb whose active form picks out a ποιεῖν (though this is not always so; see Top. IX.22.178a10ff.). In this use, πάσχειν, with ποιεῖν, forms one of the ten categories of being (see Cat. 4.1b27, 2a3-4 9.11b1-8, Met. V. 7. 1017a26).
32. 416b33-417a2, 417a17-20, 418a3-6. Aristotle also explicitly uses 'ἁλλοίωσις' and its cognates in his distinction among kinds of change at 417b2-16.
33. See e.g. DA II.9 422a6-7, 10.422a34-b10, 422b15-16, 11. 423b30-424a2, a2-7, a7-10, III.6.430b23-24, DS 2.438b22-25.

That we are to understand the organs to be assimilated to their correlated sense-qualities seems clear. Although terms for the sense-organs and senses are often interchanged, the question, e.g., of how the organs must be constituted to be able to receive the sense-qualities cannot be rewritten to apply to the senses (see DS 2. and DA III. 1.424b22-425a13). And although the sense-qualities themselves are not always explicitly mentioned (422a6-7, 422a34-b10), they are surely implied, for the qualities mentioned instead (heat, moisture) are their ground or matter (see Chapter I).

Indeed, if this is wrong, then there is no impetus to the view that the special assimilation doctrine applies to the sense-organs - a view, as will emerge later, which has serious difficulties. (For physicalist interpretations of Aristotle's assimilation doctrine see R. Sorabji, 'Body and Soul in Aristotle', p.68 and p.72, note 22; Hartman pp.188-190; and T. Slakey, 'Aristotle on Sense-Perception'.)

34. The original quality of the organ, for Aristotle, must surely be a contrary, even if Aristotle often merely says that the organ must be potentially, and not actually, F (see note 33), and not that it must be actually of a different species than Fness. For even if we must thus assume that the organ must be, e.g., tasteless, the tastelessness of a physical

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body with the matter for flavours, unlike the tastelessness of a number, say, may be considered a neutral taste; or at least, as a proper lack, it may serve as a contrary to any taste.

In any case, the organs are sometimes expressly asserted to have opposite species of the qualities received; see 420a15-17, 422a34-b10, 438b27-29.

35. For non-physicalist interpretations of the assimilation doctrine see F. Brentano, The Psychology of Aristotle (trans. R. George), pp.154-5; J. Barnes, 'Aristotle's Concept of Mind', pp.108-9; and H. Robinson, 'Mind and Body in Aristotle', pp. 112-115, 123-4. (Robinson also believes that the physical assimilation of the organ is a part of this doctrine. See note 38).
36. In most of the passages cited in note 33 - the exceptions are 422a34-b10 and 423b30-424a2 - Aristotle applies the assimilation formula either to sense or to that which can perceive.
37. If the perceiver is meant to acquire copies of the sensibles - physical or mental 'sense-data' - then Aristotle's assimilation doctrine is something like a sense-impression account of perception: to perceive $\emptyset$ is to cognize $\emptyset$ by sensing a sense-datum of it.
Aristotle's doctrine, however, may be more non-committal: to perceive $\emptyset$ is to cognize it, whatever the mechanism of this may be. If this is so, then for the perceiver to be made like the sense-objects is for him to acquire likenesses of them only in the trivial sense of being aware of their properties.
38. On this view, more particularly, the special, cognitive assimilation of the perceiver is to be construed as his exercise of a faculty of awareness over a 'sense-impression' created by the organ. Hence the ordinary assimilation of the organ is understood to play a crucial role in the special assimilation of the perceiver. (See H. Robinson, 'Mind and Body in Aristotle', pp.112-115, 121, 123-124.)
39. But one might object that these passages do lend support to the cognitive assimilation view. For in at least the first two, what prevents perception of Fness is the percipient's assimilated state prior to the change: he cannot be assimilated to sweetness if he is too well-assimilated to bitterness, and he cannot be assimilated to heat if he is already assimilated to it. But the obstructing assimilations here amount to the percipient's current

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awareness of the relevant qualities: he cannot perceive sweetness when ill because he has a bitter taste in his mouth. But if the obstructing assimilations amount to the perceiver's awareness of some quality, then so must the assimilation obstructed.

But this argument makes the same kind of mistake as the original. For the presence of bitterness in the tongue may amount to the perception of bitterness - which may also obstruct the perception of sweetness - but this is not to analyze this perception as the immediate awareness of a sense-impression of bitterness created by the tongue. Hence, these passages do not support the cognitive assimilation view of the refined assimilation doctrine.

40. See DA III. 4. 429b22-26, b29-430a2. When Aristotle says that 'being affected in virtue of something common has been discussed before' (b29-30), might he be referring to DA II.5. 417b2-5? For the ordinary *πάσχειν* has the potentiality of being F, and of changing to Fness, by virtue of being actually non-F, while the special is characterized only as having a potentiality or power which is preserved as a result of its *πάσχειν*. And Aristotle's point in DA III.4 is that thought can be affected, although it has nothing in common with its objects, because it is potentially its objects.

Notes to Chapter III

1. See Met. VII and VIII, and Bonitz 545a18-27.
2. For the first contrast see e.g. Bonitz 785a61-b8, 786a9-15 and 219a12-24; for the second, Bonitz 785a25-45 and 219a29-37; and for the third, Bonitz 785b55-61 and 219a24-28.
3. See Met. XIII and XIV.
4. See Bonitz 786a15-22 and 219a7-10.
5. Consider e.g. the passages cited in Bonitz 218b51-53. And see further Bonitz 218b8-10.
6. See Bonitz 786a52-58.
7. For Aristotle's use of this and similar formulae elsewhere in DA, see I. 1.403a3ff, II.2. 413a3-10, and 414a19-28, where he discusses whether the various parts of the soul are separate from the body; III.4. 429b13 and 7.431b12, where he seems to be making a point similar to his Metaphysics point about snubness; III.4. 430a3 and 7. 431a17, where he seems to wish to characterize entities which actually exist apart from matter; and III.4.430a3, 430a6 and 6.430b30, where he seems to wish to pick out concepts. Further uses of this expression also occur at e.g. III.8. 432a3-6, 7. 431a14-15 and 4.429b14.
8. See Bonitz 765b6-14.
9. See Hicks, p.417. And see Bonitz 219a50-54 and 434b53-435a5.
10. See Bonitz 219a12-24.
11. See Bonitz 572a37ff.
12. See DA III.2.425b22 and 13.435a22. And for a physical application of the wax analogy, see DM 1. 450a29-b3.
13. See A.C. Lloyd, 'Was Aristotle's Theory of Perception Lockean?' pp.142-3. Lloyd also suggests other interpretations of this doctrine.
14. Indeed, since affection does generally refer to change in sensible qualities, while Aristotle cites gold and bronze - not sensible qualities - to illustrate the matter not received, his point would not seem to be that the affection of sense and the wax is selective.

15. See R. Sorabji, 'Body and Soul in Aristotle', p.74. Rodier (p.335) and Hicks (p.419) cite Themistius with approval.
16. See e.g. DA II.8.420a3ff, 9.422a6-7, 10.422a34-b9, and DS 2. None of these discussions implies that the interaction between organ and object and between two inanimate objects differs.
17. Aristotle may limit this explanation to the case of touch (see III.12. 434a29, as well as II.12. 424a32-b3) - but at least then it will apply in some case. Yet Aristotle's concern with this case may be due rather to the inconceivability of a plant's having any other sense. Indeed, one may note that the body seems to be the organ of touch at 434a29, which diminishes the plausibility of this interpretation: all bodies would be seen to be affected in the same way, but an internal organ might be thought to change without the particles.
18. For this view see J. Schiller, 'Aristotle and the Concept of Awareness in Sense-Perception'. See also Lloyd (pp.143-4) and Hartman (pp.193-6).
19. See e.g. DA II.6.
20. See Bonitz 786a15-22 and 219a7-10.
21. But see III.2. 427a8-9, where affection by 'the forms of black and white' is mentioned. Still, these may be the forms of black and white objects, or species of the colours.
22. We might understand that sense is affected by that having flavour not insofar as it is called flavoured, i.e. able to stimulate taste, but insofar as it is such, i.e. actually tasty. (The addition of 'καὶ κατὰ τὸν λόγον' (a4) perhaps supports this, in that the λόγος might express or be the actual, as opposed to the potential quality (Met. IX.8., 1049b12-17) since actuality is prior to potentiality in λόγος.

Aristotle's wax example may also conform to this view. For the gold or bronze seal may be seen as a quality in potentiality: a configuration of gold and bronze whose function, hence form and actuality, is to impress malleable items with designs. Then the wax may be seen as receiving the seal in actuality - a design somewhat different from the ring's which is a fulfillment of its function. And it does not receive it in potentiality: it cannot in turn impress other items with this design.

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Aristotle's contrast of sense with plants is also easily understood on this view. For his claim that plants 'do not have a **principle** such as to receive the forms of the sense-objects, but they are affected with the matter' (II.12.424b2-3) may be taken as saying that the plants receive the physical or material property corresponding to the actual sense-object, not the form or actual sense-object as well; the existence of the actual object, after all, depends at least in part on the presence of a perceiver.

23. That 'the νοητά without the matter' may be so rewritten seems clear. cf. DA III.2. 425b23.

24. In both passages it seems possible that the potential objects of the soul are, not particulars, but their qualities as potential. 'The things having matter' in III.4 may be the instantiated intelligible features of things; such items without matter, the intelligible features themselves as actual. And the 'αἰσθητά' of III.8. may be the sense-qualities, not the sensibly qualified objects. Aristotle's discussion involving the stone is then admittedly somewhat difficult. But perhaps the idea is that for sense to become identified with sense-qualities ('αὐτή' 431b28) as materially embodied in a stone would be for the stone, impossibly, to be in it; it is, then, the form of the sense-qualities - the sense-qualities as actual - with which sense is identified.
 But even if the potential objects are meant to be the particulars, the unity-of-actuality and FWM doctrines might still be being brought together in these passages. For Aristotle's persistently uncertain use of 'τὰ αἰσθητόν' and 'τὰ νοητόν' to refer sometimes to the material objects, sometimes to their qualities, might easily have caused him to state the unity-in-actuality doctrine in DA III.2 as pertaining to the qualities, and on occasion to apply it to qualified composite substances. (See I. Blocks's 'Aristotle and the Physical Object'.)

25. See Hartman, pp.195-196 and Schiller, p.479.

26. See e.g. Insom. 3 passim, DM 1.450b1-12, 2.453a10-11.

27. See e.g. DM 1. 450a26, 30-32, Insom. 2. 459a24, 460b2, 459b2 (on after-imaging).

28. See e.g. DA III.3. 428b10-17, DM 1.450a9-15, and Insom. 1.459a15-23.

29. One might note also that the stronger interpretation of DA III.2 is subject to significant variations. Even if a sense-quality exists only as a power when not actual - and so, as actual, is non-trivially mind-dependent - it would not seem to follow that as actual it is the phenomenal object of consciousness, so long as it in some way involves the phenomenal object of consciousness.

30. For this view see F. Brentano (The Psychology of Aristotle, trans. R. George), pp. 154-5; J. Barnes ('Aristotle's Concept of Mind'), pp. 109-110; and Aquinas (Aristotle's De Anima, trans. Foster and Humphries), pp. 339-343. Hicks (p. 419) cites Philop. 448,23 for this interpretation.

For matter as substratum see Bonitz 785a61-b8.

31. But one might note that the wax analogy provides less a case of ordinary alteration - repetition of the same quality in the same kind of matter - than might be supposed: the seal in the wax will be reversed, etc.

More important, Aristotle uses this sort of example to illustrate an immaterial $\psi\alpha\lambda\lambda\alpha\iota\sigma\iota\varsigma$ affection (III.4. 429b31-430a2); hence we might be meant to focus on the power of the wax to receive impressions and to ignore its materiality.

32. That the organ is on occasion said to receive the FWMs (III.2. 425b22, 13.435a22) is not a problem; it may do so just insofar as it underlies sense.

33. This view of the FWM doctrine, however, does not claim that the senser's sense-organs do not create instances of the sensible forms - only that to do so is not to receive the sensible forms without the matter, and hence is not to perceive.

34. For the connection between change and matter in general see Bonitz 785a3-16 and 59-61.

35. See, e.g. Cael. I.11.280b27, Met. VII. 15.1039b26, VIII.5. 1044b21, 3. 1043b15, NE 1174b9-14, and similarly, Met. XII.6. 1071b20-22.

36. This view does not conflict with the idea of the 'special material change' discussed in the last chapter. For in some sense, as we have seen, such a change is not a material change: the eye stands in a relation to the redness it acquires other than that of an ordinary material substratum; it does not strictly come to be a red eye.

37. This may explain Aristotle's seemingly different principle that it is things which do not have the same matter which do not suffer in acting (GC I.7. 324a34-35). The doctor's art is in matter, and a different matter, at that, from the patient's. But the form in terms of which he acts and the patient is affected - health - is not strictly in matter at all, though, as part of the doctor's art, it may be considered, loosely, to be so indirectly. For for a form properly to be in matter is for it to be in its proper matter (Phys. II.2. 194b9, Met. VIII.2. 1043a13); so health in matter would be an instance of health. Hence Aristotle's seemingly different principles actually come to the same thing.
38. This chapter owes much to A.C. Lloyd's 'Was Aristotle's Theory of Perception Lockean?', pp.144-147.
For similar readings see H. Robinson, 'Mind and Body in Aristotle', pp.122-123; and Hartman, p.197.
39. See Bonitz 219a12-24.
40. See Bonitz 786a52-58.
41. See Met. VII.13 and Bonitz 357a24-28.
42. See DA. II.5. 417b23-24. This may also be deduced from e.g. the passages cited at Bonitz 218b51-53.
43. See further e.g. Met. XII.9. 1075a1-2, and GC I.7. 324b4-5.
44. See Met. VII.7. 1032b1ff and IX.2.
45. On the distinction between potential and actual $\nu\omicron\sigma$ see DA III.4. and Met XII. 7,9.
And see Richard Norman's 'Aristotle's Philosopher-God'.
46. See e.g. DA III.7. 431a14-17, 431b2, 8.432a7-14.
47. One might also like to suggest that sense, on this view, is not entirely passive: although it requires an external cause, it in turn 'acts on' this cause by subsuming it under a concept. Perhaps, then, its $\pi\alpha\sigma\chi\epsilon\iota\nu$ is special in the sense of thus involving activity. (See Lloyd, p.146.)

As evidence for this view one might point to Aristotle's likening in DA II.5 of perceptual powers to knowledge in first actuality, illustrated by grammatical knowledge, whose activity is knowing this a as a. For this is a hybrid case of

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'potential' and 'actual' $\nu\omicron\theta\varsigma$, as discussed in DA III.4; it is potential in requiring an external cause; actual in already having become the concept it uses. But potential-actual or passive-active powers, of which perception will then be a case, are meant to underlie the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$, which may thus be understood as a $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ in requiring a particular external cause, and as special in involving concept-use. The notion of the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ would then indicate both aspects of sensing: its contact with particulars and its use of concepts.

But this interpretation is called into doubt by Aristotle's claim that potential $\nu\omicron\theta\varsigma$ does not strictly suffer, but 'is receptive of the forms' (III.4. 429a15-16). It is true that two changes of potential $\nu\omicron\theta\varsigma$ might be distinguished, its change to actual $\nu\omicron\theta\varsigma$ and its thinking of a particular; and that the first, as required by our interpretation, might be a case of ordinary $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$, the second, as required by III.4, a case of special $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$. Still, in at least one of its guises, potential $\nu\omicron\theta\varsigma$ will have an act theoretically restricted to active-passive powers. So this interpretation must not be pressed.

48. Recall also Aristotle's view in Metaphysics XIII.10 that potential knowledge, as general, is of the universal, actual knowledge, as a 'this', of the particular. (1087a15-25). Might the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$, then, be understood as a 'preservation of that which is in potentiality' - thought or perception's universal - 'by that which is in actuality' - the particular responsible for the soul's application of this universal - and by that which is 'like it thus' as a particular is to a universal?

This suggestion would seem to take 'potential' and 'actual', words with a wide variety of meanings, in too narrow a sense. It is nevertheless of interest to note the connection of repeatability with both the special kind of $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ and universals or concepts.

(Recall also Phys. VII.3. 247b4-7, where Aristotle's claim that the exercise of knowledge is not a $\pi\acute{\alpha}\sigma\chi\epsilon\iota\nu$ is connected with the involvement of universals in knowing.)

49. See DA II.11.424a5, 6; III.2. 426b10, 14; 3.427a20, 428a3; 4. 429b13; 9.432a16; and elsewhere e.g. MA 6. 700b21.
50. Aristotle implies that there are perceptual judgements when he speaks of the truth and falsehood of perception; see e.g. DA II.6.418a14-16, III.3. 428a11, 428b17-30, 6.430b 29-30. He also mentions specific judgements at e.g. DA III.425a21-2. 425a30-b4, and 7.431b5-6, although he does not necessarily use ' $\kappa\rho\acute{\iota}\nu\epsilon\iota\nu$ ' in these passages.

51. See e.g. DA II.6.418a14-16, 11.424a5-7, III.2. 426b 8-427a16, 4.429b15, and 7.431a17-b1.
52. And that Aristotle's claim here appears in the development of the *ἀπορία* of co-instantaneous perception suggests that such an inference would be risky.
53. See I. 1, 402b10-16, and note Aristotle's procedure in DA II and III. And see e.g. Met. IX.8 for Aristotle's general position.
54. See notes 49 and 51 and especially III.3. 427a19-21, 428a3-5, and III.9. 432a16.
55. For this general problem see Met. 999b24-1000a4, 1003a5-17, XIII.10, and e.g. 999b2, 1060b20. And see An. Post. passim. In DA see e.g. 429b10-21 and 417b23-24. Aristotle's view that *νοῦς* is of the forms could also be read as asserting that it is exercised over universals.
56. See note 50.
57. See e.g. III.4. 429a27-29, 5. 430b5-6; and see elsewhere e.g. An. Post. I.31.87b37 and Met. III. 4. 999b2.
58. See e.g. DA II.5.417b26-28, III.4. 430a6-9, 6. 430b 25, 430b1-6, and DA III.9-11 passim (on practical *νοῦς*).
59. See e.g. DA III.9. 432a22-b7 and 4.429b10-21.
60. Sensing, for example, might be understood to be a reception of a particular form which can be, or generally is, taken as an instance of that form.

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