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## THE ASSIMILATION OF SENSE TO SENSE-OBJECT IN ARISTOTLE

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### 1. Introduction

ARISTOTLE holds that acts of sense-perception crucially involve some kind of assimilation of the perceiver to the relevant sense-object—say, a red flag, or a fragrant lavender bush. It has for some time been highly controversial how he conceives of this kind of assimilation. According to some scholars, what he has in mind is an alteration or change in quality whereby the perceiver's sense-organ in a straightforward way takes on the perceptible quality of the object that is being perceived.<sup>1</sup> According to others, such assimilation just is becoming aware of the perceptible quality in question.<sup>2</sup> On this view, the likeness between perceiver and sense-object in the act of perception depends on the fact that the perceptible form of the sense-object has in a certain way come to be present in the perceiver's sense-organ. However, the relevant notion of presence

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<sup>1</sup> Different interpretations of this kind are on display, for instance, in T. Slakey, 'Aristotle on Sense Perception', *Philosophical Review*, 70 (1961), 470–84; R. Sorabji, 'Body and Soul in Aristotle', *Philosophy*, 49 (1974), 63–89; S. Everson, *Aristotle on Perception* (Oxford, 1997). Useful distinctions among different versions of this kind of interpretation are drawn in V. Caston, 'The Spirit and the Letter: Aristotle on Perception', in R. Salles (ed.), *Metaphysics, Soul, and Ethics in Ancient Thought: Themes from the Work of Richard Sorabji* (Oxford, 2005), 245–320 at 248–54.

<sup>2</sup> The protagonist of this kind of interpretation is M. Burnyeat. His main contributions to the topic are 'Is an Aristotelian Philosophy of Mind Still Credible? (A Draft)', in M. Nussbaum and A. Rorty (eds.), *Essays on Aristotle's De anima* (Oxford, 1992), 15–26; 'How Much Happens When Aristotle Sees Red and Hears Middle C? Remarks on *De anima* 2. 7–8', in Nussbaum and Rorty (eds.), *Essays on Aristotle's De anima*, paperback edn. (Oxford, 1995), 421–34; and 'De anima II 5', *Phronesis*, 47 (2002), 28–90. Another statement of this kind of interpretation is T. Johansen, *Aristotle on the Sense-Organs* (Cambridge, 1998). Supporters also include S. Broadie, 'Aristotle's Perceptual Realism', in J. Ellis (ed.), *Ancient Minds (Southern Journal of Philosophy)*, 31, suppl.; 1993), 137–59; and D. Murphy, 'Aristotle on Why Plants Cannot Perceive', *Oxford Studies in Ancient Philosophy*, 29 (2005), 295–339.

is a technical one. It is the notion of presence of perceptible form without matter, and such presence, at any rate in a sense-organ, is taken to come to no more and no less than perceptual awareness of the quality in question.<sup>3</sup> The two competing views that I have sketched are central, respectively, to one or the other of the two most prominent and influential interpretations of Aristotle's theory of perception. Those are known as 'literalism' and 'spiritualism'. I am convinced that neither of those interpretations is sustainable. Each disregards significant details of Aristotle's intricate discussion of perception in *De anima* 2. 5–3. 2, and in the related chapters of *De sensu*. Each fails to do justice to the complexity of Aristotle's theory of perception. Together they have stood in the way of a proper philosophical reconstruction and appreciation of that theory.

On the view for which I shall argue in what follows, Aristotle's mature theory of perception in *De anima* assigns prominent explanatory roles both to a technical notion of assimilation of sense to sense-object, according to which such assimilation is perceiving, or perceiving considered in a certain way, and to assimilation of a more ordinary kind, in which one thing comes to be like another by taking on one of its features in a straightforward way. The chief task that I want to accomplish in the present paper is to show in some detail that Aristotle's theory of perception does prominently employ a tolerably clear, though rather technical, conception of the likeness of some sensory power to the sense-object in the act of perception. I shall also call attention to at least some of the textual evidence, in the *De anima* and elsewhere, that shows it to be part of Aristotle's theory that one thing that happens when a perceiver encounters a sense-object in suitable circumstances is that the sense-object assimilates the relevant sense-organ to itself by causing it to undergo an ordinary change—for instance, a change whereby the sense-organ loses one attribute and gains another from the same range delimited by contrary qualities. However, I shall leave detailed engagement with that evidence, and with the questions it raises, for another occasion. My focus, for now, is on the assimilation of sense to sense-object.<sup>4</sup>

<sup>3</sup> Cf. M. Burnyeat, 'Aquinas on "Spiritual Change" in Perception', in D. Perler (ed.), *Ancient and Medieval Theories of Intentionality* (Leiden, 2001), 129–53 at 141.

<sup>4</sup> In effect, the present paper's main target is literalism. While I shall in what follows mount a serious challenge to spiritualism as well (see n. 73, together with Section 4, pp. 212–14), I propose to leave direct and full-scale confrontation with spiritualism for another occasion.

## 2. Non-destructive alteration in *DA* 2. 5

At the end of *DA* 2. 5 Aristotle says:

τὸ δ' αἰσθητικὸν δυνάμει ἐστὶν οἶον τὸ αἰσθητὸν ἤδη ἐντελεχεία, καθάπερ εἴρηται. πάσχει μὲν οὖν οὐχ ὁμοίον δὲ, πεπονθὸς δ' ὁμοίωται καὶ ἐστὶν οἶον ἐκεῖνο.

What perceives [τὸ αἰσθητικόν] is potentially such as the sense-object is already in actuality, as has been said. Not being like [sc. the sense-object], it is affected. Having been affected, it has been likened and is such as it. (*DA* 2. 5, 418<sup>a</sup>3–6)

Aristotle takes care to indicate that in characterizing the kind of assimilation he has in mind, he is using the language of being affected (πάσχειν) in a non-standard way. He has just said that since there is no terminology to mark a relevant distinction between two ways of being potentially something or other, 'it is necessary to use the terms "being affected" and "being altered" as if they were the proper terms' (417<sup>b</sup>33–418<sup>a</sup>3). This somewhat telegraphic remark relies on two related distinctions made earlier on in the chapter: a distinction between two ways of being potentially something or other, illustrated, first, by someone who is potentially a knower in virtue of being human and thereby endowed with the faculty of reason and, secondly, by someone who is potentially a knower in virtue of having mastered a body of knowledge (417<sup>a</sup>21–<sup>b</sup>2); and in addition a distinction, made on the basis of that earlier distinction, between two corresponding ways of being affected. The first of these is illustrated by being taught, so as to acquire mastery of a body of knowledge; the second way is illustrated by passing from merely having knowledge to exercising it, as one contemplates, say, a geometrical proof. This second way of being affected is presented as being either no alteration at all or an alteration of a different kind (417<sup>b</sup>6–7)—different in kind, I take it, from ordinary alterations. For reasons that are not immediately clear, Aristotle regards this second way of being affected as somewhat extraordinary.

He takes perceiving to be a matter of being somehow affected by, and assimilated to, a suitable sense-object. There is a question about what precisely it is that he claims, in *DA* 2. 5, to have been likened to the sense-object in the act of perception. The expression he uses in referring to what undergoes the relevant kind of affection, and which I translate as 'what perceives', might be meant to denote

the animal in question ('the perceiver'), or that animal's power to perceive ('the sense').<sup>5</sup> For the moment I remain neutral about these possibilities, since for the purposes of the present section nothing hangs on the issue. In Section 3 I shall offer some reasons for favouring the second alternative. Something that does matter for present purposes is that Aristotle takes the assimilation of what perceives to the sense-object to be a case of being affected that is like the transition from merely having knowledge to exercising it. As we shall see, this places a significant constraint on how we are to interpret the assimilation of what perceives to the sense-object, never mind what precisely Aristotle might mean by 'what perceives'.

In rough outline, the conception that emerges by the end of the chapter is this. Prior to the act of perception, what perceives has already risen to a developed state of preparedness for perceptual activity, which is analogous to mastery of a body of knowledge. When a perceiver encounters a sense-object in suitable circumstances, the sense-object brings about a transition whereby that developed state of preparedness is put to use. What results is perceptual awareness of the sense-object. In some way or other, the transition also involves the assimilation of what perceives to the sense-object. This kind of assimilation, Aristotle holds, is a somewhat extraordinary case of being affected. Why?

One might think, and some have thought, that Aristotle's reason is that for a perceiver to be assimilated to a sense-object in the requisite way is a change that involves the exercise and preservation of the perceiver's capacity for perception.<sup>6</sup> After all, it is a change that can accurately be described as 'the preservation of what is potentially' (417<sup>b</sup>3-4), and as a transition whereby the perceiver 'rises into itself and into actuality' (417<sup>b</sup>6-7). If that is Aristotle's

<sup>5</sup> The former is Burnyeat's preferred alternative: '*De anima* II 5', 44 n. 41. (The word is clearly used in this way at *DA* 2. 3, 415<sup>a</sup>6-7.) The latter is adopted by R. D. Hicks, *Aristotle: De anima* (Cambridge, 1907); by W. D. Ross in his paraphrase in *Aristotle: De anima* (Oxford, 1961); and by E. Barbotin in his translation, *Aristote: De l'âme* (Paris, 1966). In using the expression 'what perceives', I mean to leave open the possibility that the item so referred to is one of the perceiver's senses, or the sense in general.

<sup>6</sup> A view of this kind is held, for instance, by Caston, 'The Spirit and the Letter', 268-9. Similarly Everson, *Aristotle on Perception*, 92: 'the second type of alteration is the realization of a capacity, where the capacity will be defined by reference to its realization'; the definition of the second type of alteration 'is such that the actualization of any capacity will fall under it' (93). Cf. J. Sisko, 'Alteration and Quasi-Alteration', *Oxford Studies in Ancient Philosophy*, 16 (1998), 331-52 at 335-6.

reason, then his insistence that the kind of assimilation he has in mind is a somewhat extraordinary case of being affected plainly allows him to accept that such assimilation consists in an alteration whereby a sense-organ loses, for instance, an intermediate degree of warmth and becomes somewhat cold, thus being assimilated to the ice cube on the perceiver's hand. On this view, Aristotle is merely insisting that such assimilation is also a change that exercises and preserves a perceptual capacity.

It is, however, clear that Aristotle does not think that the relevant kind of assimilation, as he conceives of it here at the end of *DA* 2. 5, consists in the loss of one quality and acquisition of another by whatever it may be that he takes to be assimilated to the sense-object. Crucially, it is part of his conception of this particular kind of assimilation that being affected in this way is not a matter of suffering the loss of a given quality by having it replaced with another quality from the same range.

To see this, one must first of all notice that the chapter offers not only one distinction between different ways of being affected, but in fact two such distinctions.<sup>7</sup> Aristotle first distinguishes between one way of being affected which is 'destruction of a sort by the agency of something contrary' (417<sup>b</sup>2-4), and another way which is 'rather a preservation of what is potentially by the agency of what is in actuality, and of what is like it the way a potentiality is in relation to the actuality in question' (417<sup>b</sup>3-5). The first of those two ways seems clear enough. When something or other is affected in this way, one of its attributes is destroyed or lost. If the change in question is an alteration, the thing that is changed suffers the loss of some quality.<sup>8</sup> It passes from being *F*, for some quality *F*-ness, to being not *F*. Being *F* is the starting-point of the change, and to undergo the change is in part to suffer the loss of *F*-ness (cf. *Phys.* 7. 1, 242<sup>a</sup>69-<sup>b</sup>42). Take, for instance, learning. Ignorance, being a disposition, is a quality (cf. *Cat.* 8, 9<sup>a</sup>4-10). When a process of learning is complete, the result is a completed alteration. Ignorance has been replaced with knowledge, and this has come about by the

<sup>7</sup> This is shown in great detail in Burnyeat, '*De anima* II 5', 53-67. It was clearly understood already by Philoponus (*In DA* 304. 29-305. 2 Hayduck).

<sup>8</sup> Cf. *GC* 1. 4, 319<sup>b</sup>11-16: 'alteration occurs when what underlies, which is perceptible, persists, but there is a change in its attributes [sc. in its qualities, 319<sup>b</sup>34], which are contraries or intermediates; for example, the body is healthy and then again sick, though it persists in being the same body, and the bronze is spherical and then again angular, remaining the same bronze.'

agency of a teacher or alternatively, and more perspicuously, by the agency of a teacher's knowledge.

The other one of the two ways of being affected that are initially pinpointed may seem somewhat obscure, especially given its characterization in terms of preservation. It may seem difficult to see how being affected in this second way amounts to being changed by being affected. Affecting something or other in this particular way is clearly not meant to be only a matter of preserving a potentiality. We should set aside as irrelevant an idea that one might think is suggested by Aristotle's characterization.<sup>9</sup> It is not part of his conception of this second way of being affected that the potentiality that is preserved is preserved or sustained specifically by being affected in this particular way, which crucially involves the exercise of the potentiality in question. Aristotle will go on to treat the activation of, for instance, sight by colour as an example of this second way of being affected. Now, such activation does preserve the sensory power in that it leaves it fully intact. But Aristotle does not think that a perceiver's capacity for colour perception is sustained specifically by being exercised. He takes that capacity to be in place right away from birth (*DA* 2. 5, 417<sup>b</sup>16–18),<sup>10</sup> and he also takes it to be an essential characteristic of the relevant sense-organs, the eyes (*DA* 2. 1, 412<sup>b</sup>20–2). Since it falls to the nutritive faculty to maintain the animal's organism and its parts, it must be Aristotle's view that, after an animal's birth, its nutritive faculty takes care of sustaining its capacity for colour perception, by maintaining its sense-organs, which requires maintaining them in a state of preparedness for operation. Being affected in this second way, then, crucially involves the preservation of a potentiality in the sense that the potentiality in question is left fully intact, and it also involves being brought into operation or actuality. In explaining why this way of being affected is either no alteration at all or at least no ordinary alteration, Aristotle adds that in being affected in this way, the thing that is so affected 'rises into itself' (417<sup>b</sup>6–7). By this he must mean that in being affected in this way, what is so affected achieves a way of being active or actual that contributes to the completion of its nature.

<sup>9</sup> Pace Burnyeat, *De anima* II 5', 55.

<sup>10</sup> Cf. *NE* 2. 1, 1103<sup>a</sup>26–31, where Aristotle uses the senses as an example of features that we have by nature, having claimed just before (at 1103<sup>a</sup>19–23) that habituation has no impact on such features, any more than one can habituate a rock into moving upwards rather than downwards.

Having distinguished between these two ways of being affected, Aristotle adds a further distinction between different ways or manners of being altered, saying that

that which from being potentially [sc. knowledgeable] learns and acquires knowledge by the agency of what is in actuality [sc. knowledgeable] and what is capable of teaching should either not be said to be affected,<sup>11</sup> or one should say that there are two manners of alteration [*δύο τρόπους . . . ἀλλοιώσεως*], on the one hand change into privative dispositions, and on the other hand change into states [*ἕξεις*] and into a thing's nature. (*DA* 2. 5, 417<sup>b</sup>12–16)

This is a distinction within the category of destructive alteration.<sup>12</sup> Aristotle is proposing to distinguish such alterations into ones which consist in transitions from being *F*, for some quality *F*-ness, to being not *F*,<sup>13</sup> and ones that are distinctive in that they lead to states which contribute to the altered thing's completion of its nature. Now it should be clear that every case of destructive alteration can correctly be described as a transition from being *F*, for some quality *F*-ness, to being not *F*. After all, such alterations are changes whereby one quality is lost and replaced with another from the same range. Thus it seems best to interpret Aristotle as

<sup>11</sup> Some of our manuscripts have the words *ὡσπερ εἴρηται* after *φατέον* at 417<sup>b</sup>14. On that reading of the text, Aristotle is implying that the acquisition of knowledge has been said not to be a case of being affected. But clearly no such thing has been said. Rather, learning has been characterized as a transition from one contrary state to another, and so it would seem that we have been given at least some reason for thinking that, so far from being no case of being affected, it is in fact a standard case! There is then good reason not to adopt the reading *ὡσπερ εἴρηται*. Moreover, several manuscripts do not include those words. Philoponus seems not to have read it either. At any rate, his interpretation is incompatible with thinking that the acquisition of knowledge has in what precedes been said not to be a case of being affected. He clearly recognizes (304. 29–305. 2 Hayduck) that the distinction between two manners of alteration at 417<sup>b</sup>12–16 is a fresh distinction, and one which distinguishes within the category of transition from one contrary quality to another, which in the initial distinction at 417<sup>b</sup>2–5 is contrasted with the preservative kind of alteration.

<sup>12</sup> This point is missed by Everson, *Aristotle on Perception*, 91. He thinks that Aristotle here 'makes explicit the difference between' the two types of alteration distinguished at 417<sup>b</sup>2–7. It should be obvious, however, that what now exemplifies 'change into states' in the initial distinction exemplifies 'destruction of a sort'. There is, moreover, no reason at all to think that it is characteristic of the preservative kind of alteration pinpointed at 417<sup>b</sup>3–5 that what is altered in that particular way changes into a new state (*ἕξις*). An Aristotelian *ἕξις* is a settled disposition. To do a bit of contemplating is not to acquire such a thing.

<sup>13</sup> As is pointed out by Burnyeat, *De anima* II 5', 62 n. 88, the adjective *σπερητικός* is used at 417<sup>b</sup>15 in its standard logical sense, in which it means 'to do with negation', 'of negative character'.

meaning to pinpoint a distinctive kind of destructive alteration: alterations of this particular kind consist not only in the loss of one quality and its replacement with another, but also, and crucially, in the acquisition of a quality that contributes to the altered thing's completion of its nature. When a person acquires some body of knowledge, that is an alteration that contributes to the completion of his or her rational nature. By contrast, when Socrates catches a suntan and thereby loses his paleness, that alteration is neither here nor there so far as the completion of his nature is concerned.

Thus the chapter pinpoints three, and not just two, distinct kinds of alteration or quasi-alteration. Two of these kinds are destructive in that they consist, at least partly, in the loss by what is altered of some quality or other. One of the destructive kinds is exemplified by a transition that involves not only the exercise and preservation of a potentiality, namely the learner's potentiality for knowledge that comes with his or her humanity; it also involves the acquisition by what is altered of a state which contributes to the completion of its nature. In that transition, too, what is altered 'rises into itself and into actuality'. Why, then, is learning not an example of the preservative form of being affected that is pinpointed at 417<sup>b</sup>3-5?<sup>14</sup> The reason can only be that learning is a matter of losing a certain quality by having it replaced with another. This makes clear what the flow of the discussion suggests in any case, which is that Aristotle conceives of the preservative kind of alteration or quasi-alteration pinpointed at 417<sup>b</sup>3-5 as non-destructive in the sense that being altered in this particular way is not a matter of losing a given quality by having it replaced with another. The second, and special, way of being affected that is introduced at 417<sup>b</sup>3-5 is not only conceived of in terms of the exercise and preservation of a

<sup>14</sup> According to Caston, 'The Spirit and the Letter', what is distinctive of the preservative kind of alteration is that 'in exercising a particular capacity C, I do not alter *with respect to C* in a way that destroys *that capacity*. On the contrary, exercising C generally preserves or even reinforces it' (269, emphasis original). This is inadequate, since learning is also a case of both exercising and preserving a capacity, namely the capacity for knowing that comes with being a rational animal. Besides, it is evidently Aristotle's view that the builder, in exercising his art, is not altered (period), not merely that he is not altered with regard to his art, in that the art remains intact (*DA* 2. 5, 417<sup>b</sup>8-9). Note also *DA* 2. 4, 416<sup>b</sup>1-3: οὐδ' ὁ τέκτων [sc. πάσχει] ὑπὸ τῆς ὕλης, ἀλλ' ὑπ' ἐκείνου αὐτῆ· ὁ δὲ τέκτων μεταβάλλει μόνον εἰς ἐνέργειαν ἐξ ἀργίας ('nor is the carpenter affected by the matter, but it is affected by him; the carpenter only changes from inactivity to active operation'); note the word μόνον ('only'). This clearly is a remarkable claim for Aristotle to make. It is explained in S. Waterlow, *Nature, Change, and Agency in Aristotle's Physics* (Oxford, 1982), 195-9.

potentiality. It is also conceived of negatively, as not being a matter of losing a quality by having it replaced with another. Otherwise there would be no reason to treat learning as an example of the destructive way, rather than of the preservative way, of being affected.

The upshot for our purposes is that Aristotle, in *DA* 2. 5, conceives of the assimilation of what perceives to the sense-object as a non-destructive alteration, in the sense that such alteration, for the altered thing, whatever precisely it may be, is not a matter of losing a given quality by having it replaced with another. This need not entail that being altered in this particular way cannot in any way involve suffering the loss of a quality.<sup>15</sup> It surely does entail, however, that an alteration of this particular kind cannot properly be characterized as the kind of change it is in terms of the loss of a given quality and its replacement with another.<sup>16</sup>

That is enough to rule out the literalist interpretation of what sensory assimilation, so conceived of, comes to. On that view, what is assimilated in such assimilation is specifically the relevant sense-organ, and its assimilation to the sense-object consists in an alteration whereby it takes on the quality of the sense-object in a straightforward way. For instance, in the act of perceiving the coldness of an ice cube, the perceiver's organ of touch goes cold in a straightforward way. This cannot be what Aristotle has in mind in saying, at the end of *DA* 2. 5, that in the act of perception, what perceives has been likened to the sense-object and is such as it. When a bodily organ is cooled in a straightforward way, that is a destructive alteration of the organ whereby it passes from being warm, or from being at some intermediate point on the hot-cold range, to being cold.<sup>17</sup> Alterations of this kind can properly be characterized as the

<sup>15</sup> Ordinary alterations may be involved incidentally, or even as necessary concomitants, in the way thinking, for instance, may necessarily involve ordinary alterations in the thinker's perceptual apparatus. I thus think that Johansen, *Aristotle on the Sense-Organs*, 12, goes too far when, on the basis of what is said in *DA* 2. 5, he ascribes to Aristotle the view that perception involves 'no changes of attributes in the perceiver'.

<sup>16</sup> I am relying on the idea of classifying changes in a more fine-grained way than by categorial analysis. Aristotle offers the basis for such a more fine-grained classification at *Phys.* 7. 1, 242<sup>a</sup>69-<sup>b</sup>37: 'A change may be the same in genus, in species, or in number. It is the same in genus if it is of the same category, e.g. substance or quality; it is the same in species if it proceeds from something specifically the same to something specifically the same, e.g. from white to black or from good to bad, which is not of a kind specifically distinct.'

<sup>17</sup> I am using tactile perception as my example, since that yields an obvious and

kinds of change they are in terms of the loss of a given quality and its replacement with another. It is irrelevant whether or not this is a change that involves the exercise and preservation of a capacity. Nor does it matter whether or not it is a change whereby the changed thing advances towards the completion of its nature. What matters is that changes of this kind are destructive alterations. By contrast, the kind of assimilation whereby what perceives becomes like the sense-object is supposed to be non-destructive. It is not supposed to be a matter of losing a given quality by having it replaced with another.

### 3. The likeness between sense and sense-object in the act of perception

At this stage we should turn to the question of what kind of change the assimilation described at the end of *DA* 2. 5 could be. What sense can be made of a kind of assimilation that is not supposed to be a matter of losing a given quality by having it replaced with another?

I shall argue that the non-destructive alteration that Aristotle describes at the end of *DA* 2. 5 is meant to consist in, and be exhausted by, a change or quasi-change that he ascribes to a sensory power; and that he conceives of this kind of change or quasi-change as the activation of the sense in question, or perhaps as that activation considered in a way that disregards any bodily process that may be involved. My argument will proceed as follows. I begin by showing that one thing that happens when a perceiver encounters a suitable sense-object, according to Aristotle's theory, is that the relevant sense is in some way affected by the sense-object. It will emerge that this kind of affection is a beautifully clear and complete example of the non-destructive kind of alteration that is introduced and explained in *DA* 2. 5. There is good reason to think, then, that

clear-cut case of a quality being lost and replaced with a contrary quality from the same range. The same point could be made about taste (Section 3, pp. 208–9) and smell (Section 3, p. 191). In the case of vision, the starting-point is transparency, rather than some colour or other; so it would seem that no colour is lost in the transition to colour perception. However, the express purpose of *DA* 2. 5 is to make comments about perception in general. These comments apply to all the senses. If a literalist interpretation of these general comments is ruled out for the cases of touch, taste, and smell, that is more than enough to rule it out as an interpretation of these general comments.

this kind of affection is at least part of what Aristotle has in mind in describing, at the end of *DA* 2. 5, how what perceives has been assimilated to the sense-object in the act of perception. There is also good reason to think that the assimilation of what perceives to the sense-object, as described at the end of *DA* 2. 5, is meant to be exhausted by that kind of affection. Finally, I shall turn to the question of how to interpret the expression 'what perceives' (*τὸ αἰσθητικόν*) in the claim, at the end of *DA* 2. 5, that in the act of perception what perceives has been assimilated to the sense-object. I shall argue that Aristotle is using that expression so as to denote the power to perceive.

My first task, then, is to show that Aristotle's theory of perception is committed to the occurrence of changes or quasi-changes of a certain kind that are undergone by, or at any rate ascribed to, the senses.<sup>18</sup> This task is complicated by a number of factors, including the following. One complication is terminological. Aristotle distinguishes with admirable clarity between sense-organs and senses or sensory powers (*DA* 2. 12, 424<sup>a</sup>24–8; 3. 2, 426<sup>b</sup>7–12). He conceives of the senses as unextended, immaterial items that are distinct from the bodily structures in which they reside, and together with which they constitute the sense-organs, conceived of as hylomorphic composites (*DA* 2. 12, 424<sup>a</sup>24–8).<sup>19</sup> He also has terminology that is suitable for denoting specifically the sense-organs on the one hand and the senses on the other.<sup>20</sup> Unfortunately, though, he occasionally

<sup>18</sup> I remain agnostic about the question of what Aristotle, in his final and most careful analysis, takes, or would take, to be the proper subject of this kind of change or quasi-change, the sense in question or the animal that is equipped with that sense. Perhaps we shall never know. I do think, however, that at the level of analysis at which Aristotle's discussion of cognition in *DA* 2. 5–3. 8 operates, it is the senses that are regarded as the proper subjects of changes or quasi-changes of this kind. As we shall see, that view reflects a straight and literal reading of a number of prominent passages throughout that discussion; and I see no decisive reason to reject the plain message of that straight, literal reading.

<sup>19</sup> I recommend Hicks's helpful comments on 2. 12, 424<sup>a</sup>24–8: 'The organ and the faculty are one and the same, but we can separate the two in thought. If we look at the organ (*τὸ αἰσθανόμενον*) as a concrete thing and take account of its matter, it is an extended magnitude: if we abstract from the matter and attend only to the form, it is a power or faculty residing in this extended magnitude, but itself unextended and immaterial.' I would only want to add that organ and faculty, for Aristotle, are separate not only in thought, but also in being (424<sup>a</sup>25–6). Standing to each other as matter and form, they are ontologically distinct items, though together they make up the unified object that is the sense-organ in question.

<sup>20</sup> The general term for 'sense-organ' is *αἰσθητήριον*; in addition there are the eyes, ears, nostrils, tongue, and the organ of touch, which Aristotle thinks is the

refers to the sense-organs by means of the very words that one would expect, or anyhow wish, to be reserved for the senses.<sup>21</sup> This does not happen very often, nor does it ever seem to happen in contexts in which the distinction between sense-organ and sense matters. None the less, it does make it somewhat hazardous to infer simply from the use of the words in question that Aristotle must have in mind specifically the relevant sensory power rather than the organ in which it resides. At any rate, Aristotle's looseness in the use of his terminology renders such inferences open to challenge.

A second complication stems from Aristotle's metaphysics. He conceives of sense-organs as necessarily equipped with sensory powers, just as he conceives of animal bodies as necessarily ensouled, and for the same reasons. An eye that has lost the capacity for seeing, he famously holds, is an eye in name only (*DA* 2. 1, 412<sup>b</sup>20–2). As a result, he can consistently ascribe to sense-organs attributes that belong to them because, and only in so far as, they are equipped with the relevant sensory power. He tells us in *DA* 2. 12 that specifically the senses are such as to receive perceptible forms without the matter (424<sup>a</sup>17–24), and proceeds right away to distinguish the senses from the organs in which they reside (424<sup>a</sup>24–8). A little later on, in *DA* 3. 2, he says that each sense-organ is such as to receive perceptibles without the matter (425<sup>b</sup>23–4). This need not mean that the sense-organs, considered separately from the sensory powers that reside in them, are such as to receive perceptible forms without the matter. It is perfectly compatible with thinking that specifically the senses are the primary bearers of this kind of receptivity, and that such receptivity belongs to the organs only

heart. (That the tongue is the organ of taste seems to be accepted at *DA* 2. 10, 422<sup>a</sup>34–<sup>b</sup>10, and rejected at 2. 11, 423<sup>b</sup>17–26. Aristotle's considered view might be that the organs of taste and touch are twofold, incorporating both the heart, which is the organ strictly speaking, and parts of the body that play the role of a perceptual medium, namely the tongue and the peripheral flesh; this idea is floated, for the case of touch, at *PA* 2. 8, 653<sup>b</sup>24–7. For discussion, see Johansen, *Aristotle on the Sense-Organs*, 199–203.) The general terms for 'sense' or 'sensory power' are *αἰσθησις* and *τὸ αἰσθητικόν*. The specific terms for the particular senses are *ὄψις* ('sight'), *ἀκοή* and *τὸ ἀκουστικόν* ('the sense of hearing'), *ὄσφρησις* and *τὸ ὄσφραντικόν* ('the sense of smell'), *γεῦσις* and *τὸ γευστικόν* ('the sense of taste'), and *ἄφή* and *τὸ ἄπτικόν* ('the sense of touch'). Note that it is important to distinguish between *τὸ γευστικόν* and *τὸ γευστικόν αἰσθητήριον* (etc.): the former picks out the sense of taste, the latter the organ in which it resides.

<sup>21</sup> The words *ἀκοή* ('hearing') and *ὄσφρησις* ('smell') seem to be used to denote the relevant organs at *DA* 3. 1, 425<sup>a</sup>4–5; they clearly are so used at *GA* 2. 6, 744<sup>a</sup>2–5, where Aristotle says that 'smell and hearing are passages full of connate *pneuma*'.

derivatively, in virtue of the fact that the sensory powers reside in them.

Thirdly, Aristotle evidently does think that acts of perception crucially involve changes in which the sense-organs play the role of the patient, and do so in an immediate, non-derivative way. This is clearest in the cases of perception by smell and taste. For a perceiver to smell something, Aristotle thinks, the organ of smell must undergo a slight drying.<sup>22</sup> In the act of tasting something, the perceiver's tongue has been moistened (*DA* 2. 10, 422<sup>a</sup>34–<sup>b</sup>5). It is only to be expected, then, that we will find in the discussion of perception in the *De anima* references to changes that are undergone non-derivatively by the sense-organs, rather than by the sensory powers that reside in them. To call attention to such changes will not by itself undermine the claim that Aristotle's theory is committed to the occurrence of changes or quasi-changes of a certain kind that the senses undergo by the agency of suitable sense-objects. Nor, for that matter, will it undermine the view that it is some sense or sensory power that is supposed to be the patient of the non-destructive kind of alteration that is described at the end of *DA* 2. 5.<sup>23</sup> Aristotle's theory takes acts of perception to involve different kinds of change or quasi-change undergone by distinct patients, which crucially include both the relevant sense-organs and the relevant sensory powers. Combine with this the terminological and metaphysical complications mentioned just now. The result is a complicated bit of philosophical discussion that has proved rather difficult to sort out.

None the less, Aristotle's discussion is not as untidy as might

<sup>22</sup> 'Odour', he says at the end of *DA* 2. 9, 'belongs to what is dry, just as flavour belongs to what is moist; and the organ of smell is potentially such' (*ἔστι δὲ ἡ ὀσμὴ τοῦ ξηροῦ, ὡσπερ ὁ χυμὸς τοῦ ὑγροῦ τὸ δὲ ὄσφραντικόν αἰσθητήριον δυνάμει τοιοῦτον*, 422<sup>a</sup>6–7). The connection between odours and dryness is explained in *De sensu* 5: Aristotle takes odours to be formed and propagated by the action of suitable dry materials on materials characterized by moistness, including air (443<sup>b</sup>3–6). This requires the presence of some source of heat (443<sup>b</sup>14–16). As a result, at least some odours are not only dry, but also hot, so that, as they act on the perceiver, they bring about a slight, and beneficial, warming in the area around the brain (444<sup>a</sup>28–<sup>b</sup>2). The organ of smell is composed of *pneuma* (*GA* 2. 6, 744<sup>a</sup>2–5), thus being actually moist and potentially dry, and therefore open to being affected by the dried materials in which olfactory forms reside.

<sup>23</sup> On the other hand, to show that the *DA* 2. 5 assimilation of what perceives to the sense-object is a non-destructive change or quasi-change is not, *pace* Burnyeat, '*De anima* II 5', 76, to show that Aristotle does not require ordinary changes for acts of perception to occur.



now be feared. It turns out that in all those contexts in *De anima* in which he discusses the ways in which he takes perceivers to be affected when they encounter suitable sense-objects, his language indicates accurately enough what he takes the patient of the change in question to be. It is part of the picture that emerges that the non-destructive alteration described at the end of *DA* 2. 5 is an alteration undergone by the perceiver's power to perceive. Or at any rate, that is what I now want to show.

One relevant question is how to interpret the four occurrences in *DA* 2. 5 of the expression 'what perceives' (τὸ αἰσθητικόν). Aristotle says about it that it is, or has being, in virtue of a potentiality rather than an actuality:<sup>24</sup> like burnable fuel, it is actualized only by suitable external causes;<sup>25</sup> that it rises to a developed state of preparedness, analogous to the possession of knowledge, by the agency of that which gives birth to the creature in question;<sup>26</sup> that it is potentially such as the sense-object is in actuality; and that, in the act of perception, it has been likened to the sense-object (418<sup>a</sup>3–6). Prior to *DA* 2. 5, Aristotle has used the expression τὸ αἰσθητικόν, in the singular, ten times.<sup>27</sup> Every single time, it denotes specifically the power to perceive. As has been noted already, in *DA* 2. 5 it is not clear whether the expression is meant to denote the power to perceive or the perceiver in question. It may seem that when Aristotle says, in the first occurrence of the expression at 417<sup>a</sup>6, that τὸ αἰσθητικόν is merely in potentiality rather than in actuality, 'the power to perceive' is a more likely candidate than 'the perceiver'.<sup>28</sup>

<sup>24</sup> 417<sup>a</sup>6–7: δῆλον οὖν ὅτι τὸ αἰσθητικόν οὐκ ἐστὶν ἐνεργεῖα, ἀλλὰ δυνάμει μόνον. For the notion that certain things have being in virtue of a potentiality, see *Metaph.* A 6, 1071<sup>b</sup>17–19. Cf. *DA* 1. 1, 402<sup>a</sup>25–<sup>b</sup>1.

<sup>25</sup> Cf. *De sensu* 4, 441<sup>b</sup>19–23, where Aristotle recapitulates the doctrine of *DA* 2. 5 and says that flavour is such as to alter the sense of taste into operation or actuality (ἐνεργεῖα), adding that 'it brings into operation (or actuality) that which perceives [τὸ αἰσθητικόν], which, prior to this, exists potentially'.

<sup>26</sup> 417<sup>b</sup>16–17: τοῦ δ' αἰσθητικοῦ ἢ μὲν πρώτη μεταβολὴ γίνεται ὑπὸ τοῦ γεννώντος.

<sup>27</sup> 402<sup>b</sup>13, 16; 408<sup>a</sup>13; 410<sup>b</sup>22, 26; 414<sup>b</sup>1 (twice); 415<sup>a</sup>2 (twice); 415<sup>a</sup>17. The same expression is used at 415<sup>a</sup>6 to pick out creatures capable of perception. There, however, the expression is in the plural: τῶν αἰσθητικῶν δὲ τὰ μὲν ἔχει τὸ κατὰ τὸν κινήτικόν, τὰ δ' οὐκ ἔχει ('of animals capable of perceiving some have the capacity for locomotion, others do not').

<sup>28</sup> This seems to be accepted by Burnyeat, though not in his analysis of *DA* 2. 5 ('*De anima* II 5'). In his 'Introduction: Aristotle on the Foundations of Sublunary Physics', in F. De Haas and J. Mansfeld (eds.), *Aristotle: On Generation and Corruption, Book 1* (Oxford, 2004), 7–24 at 10, he reports Aristotle's claim at 417<sup>a</sup>6–7 as being that 'the senses are potentialities rather than actualities—they need an external cause to set them going'.

This in itself, however, does little to settle the question of what precisely is meant to play the role of the patient in the chapter's conception of the assimilation of what perceives to the sense-object. After all, Aristotle might employ the expression τὸ αἰσθητικόν in different ways even within *DA* 2. 5. Fortunately, a number of remarks later on in the *De anima*'s discussion of perception and cognition supply important clues as to the identity of the patient.

At the beginning of *DA* 2. 12 Aristotle returns to the topic of perception in general, having by now discussed each of the senses in turn. He says that a sense (αἴσθησις) is 'what is such as to receive perceptible forms without the matter'. He then compares the power to perceive to wax, which is such as to receive the imprint of a signet ring without receiving any of the ring's silver or gold. 'In a similar way', he continues,

the sensory power relative to each sense-object [ἡ αἴσθησις ἐκάστου] is affected [πάσχει] by what has colour, flavour, or sound, but not in so far as each of them is spoken of the way it is except as being of this or that quality,<sup>29</sup> and in accordance with the form [λόγος]. (*DA* 2. 12, 424<sup>a</sup>21–4)

As the passage shows, Aristotle is prepared to ascribe specifically to the senses affections brought about by suitable sense-objects. In what follows immediately, he distinguishes tidily between sensory power and sense-organ (αἰσθητήριον), the (primary) thing in which such a power resides. Given the presence of that careful distinction in the immediate context, the claim that it is the sense in question

<sup>29</sup> I depart from the text read by modern editors in reading ἡ rather than ἡ̄ at 424<sup>a</sup>24, adopting the reading of the 12th-/13th-cent. MS Ambrosianus H 50 sup., gr. 435. Caston, 'The Spirit and the Letter', 306 n. 120, notes the awkwardness of two construals of the standard text that have been proposed, including Hicks's. I agree that the difficulty is real, but reject the solution Caston proposes. According to his proposal, Aristotle is here claiming that it is not in so far as something is, say, crimson that it affects the sense of sight, but in so far as it embodies a certain proportion (306). I reject this as contradicting the view, which I take to be Aristotle's, that the special perceptibles, including colours, affect the senses as such, rather than incidentally. (Aristotle seems to specify what affects the senses both as, for instance, colour and as what has colour, in so far as it has colour. This, I take it, is part of the general pattern that the efficient cause may be specified either as the form in question, e.g. the art of building, or as the form-matter composite, e.g. the builder.) At *DA* 2. 6, 418<sup>a</sup>23–4, Aristotle says specifically about incidental perceptibles that perceivers, or the senses, are not affected by them as such, because they are perceived incidentally, which is to say that they are not perceived *per se* or in their own right. That explanation would be quite inadequate if perceivers, or the senses, were not affected by special perceptibles as such, either, even though the special perceptibles are evidently among those things that are perceived *per se* or in their own right (418<sup>a</sup>8–9, 24).

that is affected by what has colour, flavour, or sound carries special weight. How could a sensory power be affected by a sense-object? Obviously it cannot undergo ordinary changes whereby it passes from having one perceptible quality in a straightforward way to having another. After all, it is not the right kind of thing to have any perceptible quality in a straightforward way. It is unextended and immaterial. The discussion in *DA* 2. 5 provides us with a conception of a type of change or quasi-change that can be ascribed to a sensory power with at least a measure of intelligibility. Aristotle evidently conceives of the senses as, so to speak, dynamic potentialities, capable of existing in mere potentiality as well as in actualized potentiality.<sup>30</sup> This enables one to see how sensory powers can be activated or actualized by suitable sense-objects. It remains to be seen how this peculiar kind of affection can be understood as some kind of alteration undergone by the sense, rather than simply a transition from potentiality to operation or actuality. But in any case there is at least some reason to think that we are meant to understand the claim in *DA* 2. 12 that the senses are affected by suitable sense-objects in the light of the conception of non-destructive alteration that is introduced and explained in *DA* 2. 5. Perception crucially involves, and perhaps in some sense just is, a peculiar kind of affection undergone by the sense in question in which it 'rises into itself and into actuality', without losing any quality, and does so by the agency of a suitable sense-object.

That this is along the right lines becomes somewhat clearer in *DA* 3. 2. That chapter includes a passage in which Aristotle applies the *Physics* 3. 1–3 model of causal agency and patiency to the case of perception. He begins with sound and hearing:

If change and acting and being affected are in that which is acted on, it is necessary also that sound and hearing in operation are in the sense of hearing [ἀνάγκη καὶ τὸν ψόφον καὶ τὴν ἀκοὴν τὴν κατ' ἐνέργειαν ἐν τῇ κατὰ δύναμιν εἶναι].<sup>31</sup> For the operation of what is such as to act and to effect

<sup>30</sup> Note *De sensu* 4, 441<sup>b</sup>19–23: the senses are brought into operation or actuality by suitable sense-objects. Cf. M. Frede, 'Introduction', in M. Frede and D. Charles (eds.), *Aristotle's Metaphysics Lambda* (Oxford, 2000), 1–52 at 44: 'any soul . . . is in different states at different times, depending on whether the potentialities it is constituted by are actualized or exercised or not'.

<sup>31</sup> I reject Ross's extravagant decision, in his *editio maior* (Oxford, 1961), to print ἐν τῷ κατὰ δύναμιν rather than ἐν τῇ κατὰ δύναμιν at 426<sup>a</sup>4. All our manuscripts except one (the 13th-/14th-cent. Parisinus gr. 2043) read the latter; 'Philoponus' (perhaps the 6th-/7th-cent. commentator Stephanus) cites and comments on the latter; and

change comes to be in that which is affected; which is why it is not necessary for that which effects change to undergo change. (*DA* 3. 2, 426<sup>a</sup>2–6)

According to Aristotelian doctrine, the operation of the agent of change and that of the patient both occur in the patient.<sup>32</sup> For example, the teacher's operation of teaching and the student's operation of learning both occur in the student. In the present passage, Aristotle applies this doctrine to perception. In doing so, he specifies the sense of hearing as the patient of an affection that he takes an occurrent sound to bring about in a suitably placed perceiver.<sup>33</sup> He then generalizes his analysis to perception in general:

The same account applies also to the other senses and sense-objects. Just as acting and being affected are in what is affected but not in what acts, so also the operation of the sense-object and that of what perceives are in what perceives [ἐν τῷ αἰσθητικῷ]. (*DA* 3. 2, 426<sup>a</sup>9–11)

In this generalized statement Aristotle is using the expression τὸ αἰσθητικόν ('what perceives') to pick out what he regards as the patient of an affection that he takes sense-objects to bring about in suitably placed perceivers. In perception in general, τὸ αἰσθητικόν stands to what is perceptible in the way in which, in hearing, the auditory sense stands to what is audible. It would seem, then, that

both Themistius' paraphrase and Simplicius' commentary make the sense that in which the joint operation of sound and hearing occurs. Moreover, as I shall attempt to show presently (pp. 199–206), that it is the sense in which that operation occurs is readily intelligible.

<sup>32</sup> U. Coope, 'Aristotle's Account of Agency in *Physics* III 3', *Proceedings of the Boston Area Colloquium in Ancient Philosophy*, 20 (2004), 201–21 at 203–5, offers helpful comments on the relevant terminology. I propose to take as read Coope's suggestion that what agency, for Aristotle, comes to is that a potentiality of the agent is fulfilled by a change that comes about in the patient (219). I only wish to add that the change in the patient is a matter of taking on a given form, whose origin is the agent (cf. *Phys.* 3. 2, 202<sup>b</sup>9–12). More on this presently (pp. 199–206).

<sup>33</sup> In the context, I take it to be clear that by τῇ κατὰ δύναμιν (sc. ἀκοῇ) at 426<sup>a</sup>4 Aristotle means specifically the sense of hearing rather than the organ of hearing. (It may be worth noting that this reading is accepted also in R. Sorabji, 'Intentionality and Physiological Processes: Aristotle's Theory of Sense-Perception', in Nussbaum and Rorty (eds.), *Essays on Aristotle's De anima* (1992), 195–225 at 213.) As noted earlier, Aristotle does occasionally use the word ἀκοῇ to refer to the organ of hearing. In the present passage, however, he plainly leaves that use out of consideration, presumably as being non-standard. At 426<sup>b</sup>6–8 he recognizes two uses of the word (διττὸν γὰρ ἡ ἀκοῇ), one in which it picks out the sense and one in which it denotes an act of hearing; in this latter use it is synonymous with the word ἔκκουσις. These, then, are the uses of the word that he takes to be relevant to his purposes in the passage. Given that context, the only reasonable way of construing the expression 'ἡ ἀκοῇ in potentiality' is as picking out the sense of hearing.

in the present passage the expression τὸ αἰσθητικόν serves to denote the power to perceive in general or generically, rather than this or that particular sense. It is also worth noting that in the same passage Aristotle writes of what perceives by taste (τὸ γευστικόν, 426<sup>a</sup>14–15) in parallel with sight (ὄψις), clearly so as to denote the sense of taste. There should be nothing surprising in this kind of usage. Aristotle routinely uses language of this kind in referring to powers or parts of the soul, such as the part responsible for nutrition (τὸ θρεπτικόν), the part responsible for thought (τὸ διανοητικόν), or, as one might translate, the part responsible for perception (τὸ αἰσθητικόν).<sup>34</sup> Presumably he thinks of the senses as themselves parts or aspects of the part of the soul responsible for perception. So 'the part responsible for tasting' (etc.) would seem to be a fair alternative translation of expressions such as τὸ γευστικόν (etc.).

The passage is thus of help in three interrelated ways. First, it reinforces the idea that Aristotle thinks one thing that happens in perception is that specifically the sense in question is in some way affected by a suitable sense-object. Secondly, it seems to use the expression 'what perceives' (τὸ αἰσθητικόν) as a general term to denote the power to perceive, rather than this or that particular sense. And thirdly, it makes it clear that in acting on the sense in the relevant way, the sense-object activates the sense and thereby brings about perceptual awareness.

At this stage, some readers might be inclined to think that the evidence that has been adduced is sufficient to conclude that Aristotle takes the non-destructive alteration described at the end of *DA* 2. 5 to consist simply in an affection undergone by the power to perceive, whereby it is brought into operation or actuality by some suitable sense-object. Before concluding in this way, however, we should confront two more questions. First, is there reason to think that when a sensory power is brought into operation by a suitable sense-object, it undergoes not only a non-destructive transition of some kind or other, but specifically a non-destructive alteration or quasi-alteration? Secondly, is it clear that the assimilation described at the end of *DA* 2. 5 is meant to be exhausted by an affection undergone by the relevant sensory power? It is one thing to ascribe to Aristotle the claim that perception crucially involves a peculiar kind of affection undergone by a sensory power at the hands of a

<sup>34</sup> e.g. *DA* 2. 2, 413<sup>b</sup>11–16; 2. 3, 414<sup>a</sup>29–32; 2. 4, 415<sup>a</sup>16–20.

suitable sense-object.<sup>35</sup> It is another thing to accept that the assimilation described at the end of *DA* 2. 5 is meant to be exhausted by such an affection.

I begin with the first question. Alteration is change in the category of quality. In standard cases of alteration, something or other loses one quality and gains another from the same range delimited by a given pair of contraries. A change which is not a matter of losing a quality is obviously no standard case of alteration. In introducing the notion of non-destructive alteration, Aristotle is extending his ordinary notion of alteration. The question is whether the notion can intelligibly be extended far enough to cover changes or quasi-changes that the senses undergo at the hands of suitable sense-objects. In characterizing this kind of change or quasi-change, I have so far relied on the idea of a transition from potential being to operation or actuality. This, however, is only one aspect of Aristotle's conception of that peculiar kind of affection. It is also part of his conception that while the sense prior to the act of perceiving is only potentially such as the sense-object, in the act of perception it has come to be actually like the sense-object. The sense-object brings the sense into operation by assimilating it to itself.<sup>36</sup> That, I take it, is the doctrine. It is to this conception of assimilation of sense to sense-object that we should now turn.

A number of passages subsequent to *DA* 2. 5 shed light on how Aristotle takes the senses to be affected by suitable sense-objects. These later passages enable us to piece together a relatively clear picture of the likeness of sense to sense-object in the act of perception. Two relevant passages are already in play: the first half of *DA* 2. 12 (424<sup>a</sup>17–<sup>b</sup>3) with its general characterization of sensory powers as being such as to receive perceptible forms without the matter, and the application to perception of the *Physics* 3. 3 agent-patient analysis at *DA* 3. 2, 425<sup>b</sup>26–426<sup>b</sup>26. To those passage I now want to add *DA* 3. 8, which is a rather short chapter in which Aristotle concludes and recapitulates the discussion of cognition that begins in *DA* 2. 5.<sup>37</sup> In that chapter, he says that the perceptual part

<sup>35</sup> I borrow this picturesque turn of phrase from C. Shields, 'Intentionality and Isomorphism in Aristotle', *Proceedings of the Boston Area Colloquium in Ancient Philosophy*, 11 (1995), 307–30 at 310.

<sup>36</sup> Recall *De sensu* 4, 441<sup>b</sup>20–1: flavour 'is such as to alter the sense of taste into operation' (τῆς γεύσεως τῆς κατὰ δύναμιν ἀλλοιωτικὸν εἰς ἐνέργειαν); note the word 'alter'.

<sup>37</sup> Note the announcement at the beginning of *DA* 3. 8: 'Now let us sum up what

of the soul (*τῆς . . . ψυχῆς τὸ αἰσθητικόν*) is potentially what is perceptible, as the part responsible for knowledge is potentially what is knowable (431<sup>b</sup>26–8). ‘They must either be the things themselves’, he continues,

or the forms in question. They are not the things themselves: for the rock is not in the soul, but the form is. So that the soul is like the hand. For the hand is a tool of tools;<sup>38</sup> the intellect is a form of forms, and the power to perceive [*ἡ αἰσθησις*] is a form of perceptibles. (*DA* 3. 8, 431<sup>b</sup>28–432<sup>a</sup>3)

Here Aristotle is claiming that the perceptual part of the soul—in other words, the power to perceive—is potentially, or has potentially in itself, the forms of perceptibles.<sup>39</sup> In an act of perception, the power to perceive undergoes a transition whereby the relevant perceptible form comes to be actually present in it.

The various claims Aristotle makes in *DA* 2. 12 and 3. 8 connect rather smoothly with the description of the assimilation of what perceives to the sense-object at the end of *DA* 2. 5. In claiming that the perceptual part of the soul potentially has in it the forms—no doubt the perceptible forms—of what is perceptible, Aristotle can be seen to be offering a somewhat more determinate version of

has been said about the soul’ (431<sup>b</sup>20). While the chapter makes no reference to any part of the discussion in 2. 1–4, it does cover both perception and thought, thus recapitulating at least *DA* 2. 5–3. 7. Note also *DA* 3. 9, 432<sup>a</sup>15–16: one of the two powers in terms of which animal soul has been defined is that of discernment (*τὸ κριτικόν*), ‘which is the function of thought and perception’, and 432<sup>a</sup>17–18: ‘let this much be determined about perception and intellect’. *De anima* can thus be seen to offer, at 2. 5–3. 8, a loosely unified discussion of discernment, sensory as well as intellectual.

<sup>38</sup> ἡ χεὶρ ὄργανόν ἐστιν ὀργάνων. Cf. *PA* 4. 10, 687<sup>a</sup>20–1: the hand is not one tool but many, ‘as it is, so to speak, a tool for tools’ (ἔστι γὰρ ὡσπερὶ ὄργανον πρὸ ὀργάνων); this is because the hand becomes ‘a talon, a claw, and a horn, and again a spear, a sword, and any other weapon and tool: for it will be all of these things because it can grasp and hold all things’ (πάντα γὰρ ἐστὶ ταυτα διὰ τὸ πάντα δύνασθαι λαμβάνειν καὶ ἔχειν αὐτήν). Likewise, the soul can become all forms by receiving and holding all of them. (Note 431<sup>b</sup>21: ἡ ψυχὴ τὰ ὄντα πῶς ἐστὶ πάντα.)

<sup>39</sup> In fact, the claim is that the perceptual part of the soul is potentially all that is perceptible, just as the intellect is potentially all that is intelligible (431<sup>b</sup>21–3). He seems to set aside, presumably as an insignificant complication, that the sense of touch is blind towards certain tangible qualities, and so is not potentially all that is tangible, or at any rate not potentially all degrees of heat, wetness, and hardness (*DA* 2. 12, 424<sup>a</sup>2–5). That the sense of touch has blind spots follows from Aristotle’s claim that acts of perception require that the relevant sense-organ be affected, together with the principle that like is not affected by like. Since the organ of touch is inevitably the bearer of qualities such as a given degree of heat, sense-objects with the same degree of heat cannot affect it.

the claim, at *DA* 2. 5, 418<sup>a</sup>3–4, that ‘what perceives is potentially such as the sense-object is already in actuality’. The sense rises to being actually such as the sense-object if and when the relevant perceptible form comes to be actually present in it. That transition, it would seem, can equally well be described as the reception by the sense of perceptible form without the matter. The key question for our purposes is what to make of Aristotle’s notion of the reception of perceptible form by the sense. Once we have a reasonably clear view of that notion, the related notions of assimilation and alteration of the sense will readily fall into place.

To answer that key question, we should revisit the agent–patient analysis of *DA* 3. 2. In its context and against the background of *Physics* 3. 1–3, it makes it clear that Aristotle’s notion of the reception of perceptible form by the sense is a rather technical one, and that he conceives of such reception as being identical with the perceiver’s transition to perceiving, or perhaps with that transition considered in a way that disregards any bodily process that may be involved.<sup>40</sup> As we have seen already, the passage applies the *Physics* 3. 1–3 analysis of change to the case of perception, treating the sense-object as the agent and the sense as the patient of a certain kind of change or quasi-change. It is part of the doctrine of *Physics* 3. 1–3 that the agent of change, in changing the patient, imparts a form to it, thereby making it, for instance, an object of a certain kind, such as a house, or the bearer of a certain quality, such as health or knowledge: ‘That which effects change’, Aristotle holds,

will always carry some form [*εἶδος δὲ αἰεὶ οἴσεται τι τὸ κινουόν*]—either a ‘this’ or ‘such’ or ‘so much’—which, when it effects change, will be the principle and cause of the change: for example, what is actually a human being makes, out of what is potentially a human being, a human being. (*Phys.* 3. 2, 202<sup>a</sup>9–12).<sup>41</sup>

Thus the application of the *Physics* 3. 1–3 analysis of change to perception brings with it the idea that the sense-object, in affecting the sense, imparts to it a certain form. The form in question is, of

<sup>40</sup> In what follows I shall sometimes omit the second alternative, but only for simplicity of exposition. The significance of that alternative will become clear in Section 4, pp. 212–14.

<sup>41</sup> E. Hussey, *Aristotle: Physics, Books III and IV* (Oxford, 1983), 64, offers discussion of the principle that the agent’s form is propagated in change, noting that ‘the principle is that if A acts on B, and “A is F” gives the form which is the origin of B’s change, then B changes so as to become F’.

course, the perceptible form that resides in the sense-object. The idea is, then, that a fragrant lavender bush, in affecting your sense of smell, imparts its own perceptible form to it. The sense, in being affected by the sense-object, receives its perceptible form. As you enjoy the scent of lavender, the same perceptible form is present in the lavender bush and in your sense of smell, though it is present in different ways.

To get clear about what exactly the reception of perceptible form by the sense is meant to come to, we need to distinguish between the activity of perceiving and the change or quasi-change that is the transition to perceiving. Aristotle's analysis in *DA* 3. 2 starts, at 425<sup>b</sup>25, with remarks about the relation between the operation of the sense-object and that of the sense: for instance, sound in operation on the one hand and hearing in operation on the other. They are one and the same, he holds, but distinct in being. It is natural to interpret these remarks as being simply about perceptual activity, rather than about the transition to perceiving. He then locates this complex operation in the sense, offering an argument that it may be helpful to quote again:

εἰ δὲ ἐστὶν ἡ κίνησις καὶ ἡ ποίησις καὶ τὸ πάθος ἐν τῷ ποιουμένῳ, ἀνάγκη καὶ τὸν ψόφον καὶ τὴν ἀκοήν τὴν κατ' ἐνέργειαν ἐν τῇ κατὰ δύναμιν εἶναι· ἡ γὰρ τοῦ ποιητικοῦ καὶ κινητικοῦ ἐνέργεια ἐν τῷ πάσχοντι ἐγγίγνεται. διὸ οὐκ ἀνάγκη τὸ κινεῖν κινεῖσθαι.

If change and acting and being affected are in that which is acted on, it is necessary also that sound and hearing in operation are in the sense of hearing. For the operation of what is such as to act and to effect change comes to be in that which is affected; which is why it is not necessary for that which effects change to undergo change. (*DA* 3. 2, 426<sup>a</sup>2–6)

This analysis, it would seem, takes into consideration not only a change or quasi-change in which a sound, for instance, acts on a perceiver's auditory sense, but also an open-ended operation which the sound brings about in the sense by acting on it in the relevant way.<sup>42</sup> In effect, Aristotle is extending the *Physics* 3. 3 agent-patient analysis from acting so as to bring about a change to acting so as to

<sup>42</sup> Aristotle does not think, I assume, that in ongoing perceptual activity in relation to an unchanging sense-object (say, a motionless red surface) the sense-object keeps acting on the senses, or that the sense keeps being affected by the sense-object. For in the act of perception, sense and sense-object are like one another, and Aristotle of course holds that like is not affected by like. I thus take it that it is specifically in the change or quasi-change that is the transition to perceiving that the sense-object acts on the sense. (Similarly Hicks, ad 425<sup>b</sup>29, 438: "The transition from dormant power

bring about an (unqualified) operation. In the *Physics* 3. 3 analysis the item in which the change occurs is the bearer or subject of the change in question.<sup>43</sup> For instance, when a teacher teaches a student, a complex operation that is both a case of teaching and a case of learning occurs in the student. The point is that it is the student who is changed in this way. Thus we will want to explicate the claim that, in perception, the relevant change or quasi-change occurs in the sense in terms of the idea that it is the sense in question that undergoes the change or quasi-change. It is the sense that is activated by being acted on in the relevant way by a suitable sense-object. As we turn from the activation of the sense to its operation, the question arises of what it might mean for the joint operation of sense-object and sense, sounding and hearing, to come to be in the sense. It presumably means that in the act of perception it is the sense that is in some suitable way the bearer of that operation. It is worth noting, though, that for the sense of hearing to be the bearer of that operation in the relevant way need not be a matter of the sense engaging in some auditory activity. It need not, and perhaps should not, be a matter of the auditory sense, and thereby of the soul, doing a bit of hearing. After all, Aristotle is on record as holding that it is better to say that the person feels pity, learns, thinks things through, and so forth, than that the soul does (*DA* I. 4, 408<sup>b</sup>13–15).<sup>44</sup>

On the present construal of the *DA* 3. 2 agent-patient analysis of perception, Aristotle is significantly extending the analysis of *Physics* 3. 3 by taking into consideration not only a change or quasi-change in the patient brought about by the agent, but also an on-

to its actual exercise must be treated as equivalent to *πάσχειν* or *κινεῖσθαι*.) Nothing, however, prevents the operation of what is such as to act, e.g. an odour getting itself perceived, from continuing indefinitely beyond its instantaneously completed exercise of agency. The presence of an odour in the perceiver's environment may sustain the perceiver's operation of smelling without further exercises of agency; this may require only that a suitable condition of the perceiver's sense-organ is maintained, e.g. a condition of slight dryness that departs somewhat from the organ's neutral condition of moistness.

<sup>43</sup> This is emphasized by Coope, 'Aristotle's Account of Agency in *Physics* III', 205–6.

<sup>44</sup> I do not take myself here to offer anything like a decisive reason against ascribing to Aristotle the view that the soul can properly be said to engage in activities such as perceiving. (This view is ascribed to Aristotle, for instance, by R. Heinaman, 'Aristotle and the Mind-Body Problem', *Phronesis*, 35 (1990), 83–102.) My present concern is only to make it clear that my interpretation does not commit Aristotle to that view.

going state or operation that is in place once that change or quasi-change has been effected. The idea is that the patient is not only the bearer of the transition, but also, in some way or other, of the state or operation that is in place once the transition has been made. Now, on the face of it this is a perfectly natural extension. It is not only that the student, in being taught, is the bearer of a complex operation that is describable both as a case of teaching and as a case of learning. He or she is also the bearer of the state of knowledge that is the proper terminus of both teaching and learning. Moreover, this extended analysis has a noteworthy precedent in *DA* 2. 2. There Aristotle distinguishes between two ways in which we can be said to know by something or other (*ᾧ ἐπιστάμεθα*, 414<sup>a</sup>5), namely on the one hand by knowledge and on the other hand by the soul. This is parallel, he holds, to the way one can be said to be healthy on the one hand by health and on the other hand by some part of the body, or by the body as a whole. He adds that in the first way of specifying the thing by which one knows or is healthy, what is being appealed to, knowledge or health, is

μορφή καὶ εἶδος τι καὶ λόγος καὶ οἶον ἐνέργεια τοῦ δεκτικοῦ, ἡ μὲν τοῦ ἐπιστημονικοῦ, ἡ δὲ τοῦ ὑγιαστικοῦ· δοκεῖ γὰρ ἐν τῷ πάσχοντι καὶ διατιθεμένῳ ἡ τῶν ποιητικῶν ὑπάρχειν ἐνέργεια. ἡ ψυχὴ δὲ τοῦτο ᾧ ζῶμεν καὶ αἰσθανόμεθα καὶ διανοούμεθα πρῶτως—ὥστε λόγος τις ἂν εἴη καὶ εἶδος, ἀλλ' οὐχ ὕλη καὶ τὸ ὑποκείμενον.

a shape and a form, an account and, so to speak, an operation of what is such as to receive the thing in question, in the one case what is responsible for knowledge, in the other case what is responsible for health. For the operation of the things that are such as to act seems to be in that which is affected and in what is disposed in the relevant way. The soul is that by which we are alive, perceive, and think in the first way; so that it would be an account and a form, but not matter and the substratum in question. (*DA* 2. 2, 414<sup>a</sup>9–14)

He is characterizing knowledge as a form or account and as a quasi-operation of what is such as to receive knowledge. He is reluctant to refer to it simply as an operation (*ἐνέργεια*), I take it, because, strictly speaking, it is a dispositional state rather than an operation. In the second way of specifying that by which one knows or is healthy, what is being appealed to is the matter or substratum of the thing in question. This need not in every case be some stuff or collection of materials. The substratum of knowledge, Aristotle implies, is the soul, or the part or aspect of it that is responsible

for knowledge, and that, of course, is no kind of stuff or material. What is appealed to in this second way of specifying that by which one knows or is healthy is that which is the bearer of knowledge or health in virtue of having been in-formed or actualized in the relevant way. I shall refer to this item as the receptacle of knowledge, health, or whatever else it may be.<sup>45</sup>

The receptacle of knowledge is 'what is responsible for knowledge' (*τὸ ἐπιστημονικόν*), and by this Aristotle must mean the relevant part or aspect of the soul, since he quite plainly takes the view that it is by saying that someone knows by the soul that one is appealing to the receptacle of knowledge (414<sup>a</sup>5–8). By 'that which is responsible for knowledge', then, Aristotle evidently means the intellect or its theoretical part or aspect.<sup>46</sup> Thus it is clear that the passage applies the *Physics* 3. 3 agent-patient analysis to one of the potentialities that constitute the soul, with the potentiality in question, the intellect, playing the role of the patient of a change or quasi-change.<sup>47</sup> Moreover, it extends that analysis by treating the

<sup>45</sup> I mean to capture a certain Aristotelian notion of being *τὸ δεκτικόν* ('what is receptive') of something or other. This is the notion of being the bearer of some attribute, form, or actuality. Examples include bronze as the receptacle of statue-form, the body as that of health or disease (1023<sup>b</sup>12–13), the intellect as the receptacle of knowledge, and, I shall presently suggest, the senses as the receptacles of perceptual operation. Being in something as in a receptacle is a way of being in (*ἐν*) something that is recognized in Aristotle's philosophical lexicon at *Metaph.* Δ 23, 1023<sup>a</sup>11–13 (note 1023<sup>a</sup>23–5). Cf. *Phys.* 4. 3, 210<sup>a</sup>20–1.

<sup>46</sup> Recall *DA* 3. 8, where Aristotle refers to the intellect as 'the part of the soul responsible for knowledge' (*τῆς δὲ ψυχῆς . . . τὸ ἐπιστημονικόν*, 431<sup>b</sup>26–7). This is said to be 'a form of forms' (*εἶδος εἰδῶν*, 432<sup>a</sup>2).

<sup>47</sup> Note that the acquisition of knowledge is a destructive alteration, and is evidently treated as such in *DA* 2. 5. It is also, of course, treated as a case of alteration in *Physics* 3. 3. Thus if that change is ascribed to the soul, this raises a difficulty in the light of Aristotle's claims in book 1 of *De anima* that the soul does not engage in, or undergo, change, and arguably a more severe one than the ascription to the soul or its parts of non-destructive alterations or quasi-alterations. (This is noted in Heinaman, 'Aristotle and the Mind-Body Problem', 96 n. 26.) Recall, however, that *DA* 2. 5 treats the acquisition of knowledge as either no case of being affected, or as a special manner of being altered (417<sup>b</sup>12–16). His reason is that acquiring knowledge is a change into, or towards, the thing's nature. Burnyeat, 'De anima II 5', 65 n. 97, refers to *Phys.* 5. 2, 226<sup>a</sup>26–9, where Aristotle says that alteration is change with regard to quality, but not with regard to quality that is in the nature (*οὐσία*) of the thing in question. Thus it might be Aristotle's view that although the soul does not engage in, or undergo, standard forms of change, non-standard forms of alteration, such as the acquisition of knowledge, can properly be ascribed to it. Furthermore, and alternatively, Aristotle might hold that while acquiring knowledge, so far as the student is concerned, is, or may well be, a genuine alteration, so far as the student's intellect is concerned it is not, and cannot be, a genuine change at all, but only a transition, completed instantaneously, from merely potential to actual presence of

relevant part of the soul not only as the patient of the change or quasi-change that is the acquisition of knowledge, but also as the receptacle of the state, and quasi-operation, of knowledge that is the terminus of that transition. In fact, it would seem that Aristotle means to explain the idea that the intellect is the receptacle of knowledge by appealing to the doctrine that the operation of what is such as to act is in the patient (414<sup>a</sup>11–12). This makes good sense. The teacher, in teaching, acts on the student's intellect and thereby brings it into a new state. For the intellect to enter into a new state in this way is to receive intelligible form. And so the student's intellect is not only what undergoes this change or quasi-change. It is also what receives the form and quasi-operation which is the proper terminus of that transition. That quasi-operation is the newly established state of knowledge.

In the case of the change or quasi-change that is the transition to perceiving, what is in place once the transition has been made is a perfectly good example of an operation. So far as hearing is concerned, that operation can equally well be described as a case of sounding. When Aristotle claims, in *DA* 3. 2, that this complex operation is in the auditory sense, we have all the resources needed to understand this, given the background of the application and extension of the agent–patient analysis in *DA* 2. 2. What he has in mind, I submit, is that the sense comes to be the bearer of perceptual operation by being in-formed in the appropriate way. In other words, he takes the sense to be the (proximate) receptacle of perceptual operation.<sup>48</sup> On this view, the senses stand to perceptual operation as the body, or the relevant part of it, stands to health, and as the intellect stands to knowledge. Perceptual operation, health,

intelligible form. The idea would be that in the process of learning, the student may gradually approach the transition to the actual presence of intelligible form in his or her intellect, which, when it comes about, is instantaneously complete. I owe this suggestion to discussion with Ben Morison.

<sup>48</sup> If this is along the right lines, then the *DA* 3. 2 analysis is adding a layer of complexity to the picture offered by the *DA* 2. 2 analysis. According to that simpler picture, one is alive, perceives, and thinks by the soul in the sense that it is the soul that is the form by which one is alive, perceives, and thinks (*DA* 2. 2, 414<sup>a</sup>12–14). Note that in saying this, Aristotle may well have in mind, not perceptual or intellectual operation, but preparedness for such operation: in one use of perception terms, they pick out being able to perceive (*DA* 2. 5, 417<sup>a</sup>9–12). On that picture, the receptacle of perception, or of the power to perceive, is a body of a certain kind. We now learn that in an act of perceiving the relevant part or aspect of the soul has itself received a further layer of form. But this is just what one expects, if the senses, being forms, are themselves receptive of forms, as Aristotle evidently thinks they are.

and knowledge are formal aspects or features in virtue of whose presence in the relevant receptacle the person or animal in question is perceiving, is healthy, or knows. Knowledge is intelligible form in a distinctive manner of manifestation;<sup>49</sup> likewise, perceptual operation is perceptible form in a distinctive manner of manifestation. Note that it is no part of Aristotle's analysis, so understood, that the senses can, strictly speaking, be said to perceive things. The *DA* 2. 2 analysis is compatible with holding that, strictly speaking, it is Euclid who knows and understands geometry, in virtue of his intellect having been in-formed in the appropriate way. Likewise, the *DA* 3. 2 analysis is compatible with holding that, as you look at a red flag, the perceiving subject, strictly speaking, is you, and you are seeing red in virtue of your sense of sight having been in-formed in the appropriate way.

In any case, Aristotle holds that for a sound to activate the auditory sense of a suitably placed perceiver is a matter of bringing about a change or quasi-change by acting, and so, given his conception of agency, he must take it to be a case of imparting form to what is being acted on, the perceiver's auditory sense. It would, however, be a mistake to think that the agent's imparting form to the patient, in Aristotle's analysis, is meant to underlie the agent's action, or the patient's change, as matter to form. When a stove heats a kettle, its imparting the perceptible form of hotness to the kettle is not what underlies the heating of the kettle as matter to form. It just is the heating of the kettle. Likewise, the teacher's imparting intelligible form to the student just is his or her teaching the student. In the same way, when a lavender bush imparts its olfactory form to your sense of smell, this is not what underlies the activation of the sense as matter to form. It just is the activation of the sense. Such is the upshot of Aristotle's agent–patient analysis of perception.

The idea, then, that in the act of perception the sense has been altered by and likened to the sense-object rests on a technical notion of transmission and reception of perceptible form from sense-object to sense. That notion itself, moreover, seems to rest on a commitment that may well be a fundamental axiom of Aristotle's scientific psychology, namely that the senses, as well as the intellect, are potentialities that are open to being in-formed, in the one case by receiving perceptible form, in the other by receiving intel-

<sup>49</sup> Cf. *Metaph.* Z 7, 1032<sup>b</sup>13–14: 'the art of medicine and that of building are the forms of health and house; I call the essence substance without matter.'

ligible form. That this commitment is axiomatic is suggested by a number of texts, such as the first half of *DA* 2. 12 with its general characterization of the senses as being such as to receive perceptible form, or the recapitulation in *DA* 3. 8, with its claim that the forms of perceptibles are potentially present in the perceptual part of the soul. Those claims are made and to some extent explained, but never, it seems, argued for. However that may be, once the notion of the reception of perceptible form by the sense is in place, it is easy to see that, in an act of perception, the sense in question has come to be like the sense-object.<sup>50</sup> In an act of perception, the same perceptible form—say, the scent of lavender—is present in both the sense-object and the sense, though it is present in rather different ways.<sup>51</sup>

We are now ready to appreciate more fully than in Section 2 the significance of the fact that Aristotle characterizes the assimilation of what perceives to the sense-object as an alteration that is non-destructive. What he focuses on in characterizing this kind of change is not that what undergoes the change does not genuinely take on the relevant perceptible quality. He leaves it indeterminate whether or not receiving perceptible form without the matter is a genuine case of taking on the quality in question, however non-standard it may be. He says that 'there is a way in which' what sees, when it sees, has come to be coloured:<sup>52</sup> 'for each sense-organ is such as to receive what is perceptible without the matter' (*DA* 3. 2, 425<sup>b</sup>22-4). One thing on which he does focus in characterizing this peculiar kind of change is that it is not a matter of suffering the

<sup>50</sup> This meets a challenge formulated by S. Everson in *Aristotle on Perception*, 94: 'unless there is some property of the object which τὸ αἰσθητικὸν takes on, the notion of "becoming like" the object has lost all content' (I have taken the liberty of replacing 'the organ', which is a tendentious translation, with the word it is meant to represent).

<sup>51</sup> I thus agree wholeheartedly with Burnyeat's memorable picture in 'Aquinas on "Spiritual Change" in Perception', 141: 'For an Aristotelian, both sensible and intelligible forms are present to the world in two irreducibly different ways, one of which is cognitive of the other. The form of tiger, for example, is active in the forests as the organizing principle of the life of tigers, but it may also be present, differently, in the intellect of a zoologist who has reached a principled understanding of that kind of life. Similarly, the orange and black colouring of a tiger's striped coat will also be present, differently, in the eye of its mate as they hunt together, watching each other's movements.' I only wish to add, by way of clarification, that the perceptible forms in question are in the tiger's eye derivatively, in virtue of being in the sensory power that resides in the eye.

<sup>52</sup> τὸ ὄρων ἔστιν ὡς κεχρωμάτισται, 425<sup>b</sup>22-3.

loss or destruction of a quality. Prior to perceptual activity, there is no way at all in which the inactive sense is in actuality the bearer of any perceptible quality or form.<sup>53</sup> Thus one remarkable feature that clearly does characterize the transition that is the assimilation of sense to sense-object is that it is an alteration, or quasi-alteration, that is thoroughly non-destructive.

In this connection, it is worth noting what may well be a significant linguistic detail in *DA* 2. 5. In the general statement, early on in the chapter, of what is affected by what, Aristotle says that

all things are affected and changed by what is such as to act and what is in activity. Which is why there is a way in which what is affected is affected by what is like it, and there is a way in which it is affected by what is unlike it, as we said. That which is unlike is affected; having been affected, it is like [πάσχει μὲν γὰρ τὸ ἀνόμοιον, πεπονθὸς δ' ὅμοιον ἔστιν]. (*DA* 2. 5, 417<sup>a</sup>17-21)

The back-reference at 417<sup>a</sup>19-20 seems to be to Aristotle's discussion, in *GC* 1. 7, of agency and patiency (ποιεῖν καὶ πάσχειν).<sup>54</sup> According to the model that emerges from that discussion, those things are such as to affect one another that are alike in genus but unlike and contrary in species. For example, bitter flavours are such as to affect sweet ones. This model requires that for one thing to be such as to alter another, agent and patient must, prior to the al-

<sup>53</sup> One might think that this is contradicted at *DA* 3. 4, 429<sup>a</sup>24-7, where Aristotle argues that the intellect cannot be 'mixed with' the body, since in that case 'it would acquire some particular quality, cold or heat, or indeed would have some organ, as the power to perceive has; but as a matter of fact it has none' (ποιός τις γὰρ ἂν γίγνοιτο, ἢ ψυχρός ἢ θερμός, ἢ κἄν ὄργανόν τι εἴη, ὥσπερ τῶ αἰσθητικῶ νῦν δ' οὐδὲν ἔστιν). It seems best to interpret this as envisaging two distinct ways in which the intellect might be 'mixed with' the body: (i) literally, as one material thing with another, or (ii) in an extended way, by having a bodily organ, the way the power to perceive has. Only on the first construal would the intellect acquire qualities such as cold or heat. Thus interpreted, the passage is perfectly compatible with thinking that prior to being in operation, the power to perceive is not in actuality the bearer of any perceptible quality, not even in the non-standard way in which it may come to be the bearer of qualities in acts of perception.

<sup>54</sup> An alternative candidate is 416<sup>a</sup>29-b<sup>9</sup> in the preceding chapter on the nutritive faculty. There Aristotle discusses the question of whether animals are nourished by what is like them or what is contrary to them, concluding that in so far as they are nourished by unconcocted food they are nourished by what is contrary, but in so far as they are nourished by concocted food, by what is like. However, the only thing that is said to be affected in the passage is the (unconcocted) food, which, being contrary, is affected. The only kind of likeness that is mentioned in the passage is the likeness between animal and food after concoction. That likeness plays no explanatory role in Aristotle's characterization of the affection undergone by the food as it is concocted.



teration, bear different qualities from the same range. For the sake of simplicity, Aristotle treats such qualities as contraries. Clearly the model cannot be applied without modification to a kind of alteration, or quasi-alteration, whose patient, to begin with, does not bear any quality from the relevant range. It would be wrong to say that the sense, prior to perceptual activity, is contrary to any sense-object.<sup>55</sup> In the discussion in *GC* 1. 7, being unlike (*ἀνόμοιον*) something or other is closely associated with being contrary to it.<sup>56</sup> Perhaps for that reason, Aristotle does not say, at the end of *DA* 2. 5, that what perceives is affected as something that is unlike the sense-object. In what I suggest is a subtle shift of phrasing, he says that what perceives is affected as something that is not like (*οὐχ ὁμοιον*)<sup>57</sup> the sense-object.

Finally, we should turn to the question of whether the assimilation described at the end of *DA* 2. 5 is meant to be exhausted by a change or quasi-change undergone by, or anyhow ascribed to, the sense in question. There is strong textual evidence, in *De anima* and elsewhere,<sup>58</sup> that Aristotle takes at least some acts of percep-

<sup>55</sup> A further complication is that the sense, prior to perceptual activity, is not generically like any sense-object, either. Thus there is not only the problem of how to satisfy the model's requirement of specific unlikeness between agent and patient, but also a problem of how to satisfy the requirement of generic likeness. It seems that Aristotle means to solve the second problem by relying on the somewhat obscure idea that at least some forms of being potentially *F* in themselves render what is potentially *F* like what is actually *F* (*DA* 2. 5, 417<sup>b</sup>4–5). The same kind of problem arises for the application of the model to intellectual cognition; again Aristotle's attempted solution may seem less than perfectly satisfactory: *DA* 3. 4, 429<sup>b</sup>22–430<sup>a</sup>2.

<sup>56</sup> *GC* 1. 7, 323<sup>b</sup>30–4: 'that which acts and that which is affected must be alike and the same in genus, but in species unlike and contrary' (*τῷ δ' εἶδει ἀνόμοιον καὶ ἐναντίον*); note also 324<sup>a</sup>5–9 (*τῷ μὲν γένοι ταῦτα καὶ ὁμοια, τῷ δ' εἶδει ἀνόμοια, τοιαῦτα δὲ τάναντία*).

<sup>57</sup> One might compare the distinction, at *NE* 3. 1, 1110<sup>b</sup>18–24, between the person who acts involuntarily or 'counter-voluntarily' (*ἄκων*) and the one who acts non-voluntarily (*οὐχ ἐκών*).

<sup>58</sup> A text that deserves special attention is *GA* 5. 1, 780<sup>b</sup>29–33, where Aristotle explains differences among perceivers in accuracy of visual discernment in terms of differences in purity of the perceiver's liquid eye-jelly: 'just as small stains are distinct on a pure, clean shirt, so small changes are distinct in a pure, clean sight, and they bring about perception' (*ὡσπερ γὰρ ἐν ἱματίῳ καθαρῷ καὶ αἱ μικραὶ κηλίδες ἐνδηλοὶ γίνονται, οὕτως καὶ ἐν τῇ καθαρῇ ὄψει καὶ αἱ μικραὶ κινήσεις δῆλοι καὶ ποιοῦσιν αἰσθησῶν*). The 'pure, clean sight' mentioned here contrasts with the 'impure liquid in the eye' (*τὸ δ' ἐν τῇ κόρῃ ὑγρὸν μὴ καθαρὸν*) mentioned just before at 780<sup>b</sup>24; so it would seem that Aristotle is using the word 'sight' to pick out the organ of sight. The passage distinguishes clearly between acts of perception and changes in the eye-jelly, which depending on their extent, and on the purity of the organ, may or may not

tion to involve alterations that are undergone specifically by the relevant sense-organs. For example, the perception of flavour requires that the perceiver's tongue passes from being somewhat dry to being moist (*DA* 2. 10, 422<sup>a</sup>34–<sup>b</sup>5).<sup>59</sup> That is because flavours reside in suitable moist materials, as Aristotle states in *DA* 2. 10<sup>60</sup> and explains in detail in *De sensu* 4. The organ of taste, prior to perceptual activity, must be in a condition of moderate dryness, so that it can be acted on by what is tasteable, which Aristotle evidently takes to be moist not incidentally, but precisely in so far as it is tasteable.<sup>61</sup> When a perceiver's tongue enters into contact with something tasteable, the actually moist sense-object will assimilate the potentially moist organ to itself precisely as the *GC* 1. 7 model of agency and patiency predicts. This, I take it, is at least part of the material cause of flavour perception, much as boiling of the pericardial blood is at least a crucial part of the material cause of anger (*DA* 1. 1, 403<sup>a</sup>29–<sup>b</sup>2).<sup>62</sup>

Thus one might think that the assimilation of what perceives to the sense-object that is described at the end of *DA* 2. 5 is meant to have two aspects, a change undergone by a sense-organ and

bring about perceptions. If such a change is too faint or the organ is too impure, what occurs is an alteration in the organ without a corresponding activation of the sense.

<sup>59</sup> Note especially 422<sup>b</sup>3–5: *ἀναγκαῖον ἄρα ὑγραθῆναι . . . τὸ γευστικὸν αἰσθητήριον* ('the organ of taste needs to be moistened'). R. Bolton, 'Perception Naturalized in Aristotle's *De anima*', in Salles (ed.), *Metaphysics, Soul, and Ethics in Ancient Thought*, 209–44 at 226 n. 12, offers detailed discussion of the explanatory role in Aristotle's theory of the tongue's being moistened by the object of taste.

<sup>60</sup> *DA* 2. 10, 422<sup>a</sup>10–11: *καὶ τὸ σῶμα δ' ἐν ᾧ ὁ χυμὸς, τὸ γευστόν, ἐν ὑγρῷ ὡς ὕλη* ('the body in which flavour resides, that which is tasteable, is in something moist as in matter').

<sup>61</sup> This is made clear at *DA* 2. 10, 422<sup>b</sup>2–5, where Aristotle infers from the fact that taste is affected by the tasteable as such that the organ of taste must be capable of being moistened: 'the sense of taste is in some way affected by what is tasteable, in so far as it is tasteable. The organ of taste, then, which needs to be moistened, must be capable of being moistened while being preserved, while at the same time it must not be moist' (*πάσχει γὰρ τι ἢ γεύσεισ ὑπὸ τοῦ γευστοῦ, ἢ γευστόν. ἀναγκαῖον ἄρα ὑγραθῆναι τὸ δυνάμενον μὲν ὑγραίνεσθαι σωζόμενον, μὴ ὑγρὸν δέ, τὸ γευστικὸν αἰσθητήριον*). I owe this point to discussion with Rob Bolton.

<sup>62</sup> Burnyeat, '*De anima* II 5', 83, claims that *DA* 2. 5–3. 2 'leaves no textual space for further material changes underlying the alteration which is perceiving'. What Aristotle says in *De anima* leaves it open, I think, whether, for instance, the moistening of the tongue by tasteables or, more probably, the condition of moistness thereby produced underlies flavour perception as matter to form. However, it is clear that Aristotle thinks flavour perception requires some suitable moistening of the tongue, and also that such moistening is part of Aristotle's explanatory account of flavour perception, no doubt under the rubric of the material cause.

a certain kind of alteration or quasi-alteration undergone by the sensory power that resides in the organ. However, that particular kind of assimilation is conceived of as a non-destructive alteration akin to the transition from possessing knowledge to the activity of contemplation. Only one of the two aspects of assimilation just mentioned qualifies as a non-destructive alteration. The other one, by contrast, is a matter of losing a suitable attribute, such as a given quality, by having it replaced with another. In tasting a strawberry, for instance, the perceiver's tongue undergoes a change that partly consists in losing the moderate level of dryness characteristic of a tongue that is currently inactive as an organ of taste, but fully prepared for operation.<sup>63</sup> It would seem, then, that the assimilation described at the end of *DA* 2. 5 is meant to consist in, and be exhausted by, an alteration or quasi-alteration that is undergone by, or at any rate ascribed to, the sense in question.

This also provides another reason in favour of interpreting the expression 'what perceives' (*τὸ αἰσθητικόν*) in the description of that assimilation in *DA* 2. 5 as denoting specifically the perceiver's power to perceive, rather than the perceiver, or sense-organ, conceived of as a form-matter composite. At the end of *DA* 2. 5, as we have seen, Aristotle says that what perceives is affected by the sense-object, so that it passes from not being like it to being such as it. What he has in mind is no doubt that this happens always or for the most part when certain conditions are in place: the sense-object must be appropriately located in relation to the perceiver, the perceiver must be in a suitable state of preparedness for perceptual activity, and so forth. The context, when interpreted properly, makes it clear that he takes 'what perceives', in suitable circumstances, to be affected by the sense-object in a non-destructive way, in a way that is not a matter of losing a given quality by having it replaced with another. But then the expression 'what perceives', in that statement at the end of *DA* 2. 5, should be interpreted, as it certainly can be, as denoting the perceiver's power to perceive, rather than the perceiver, or the sense-organ, considered as a form-matter composite. For it is true only with regard to the power to perceive, considered by itself, that the transition from perceptual inactivity to occurrent perception is a change or quasi-change that is non-destructive. For the form-matter composite that is the per-

<sup>63</sup> That is why a given act of tasting can interfere with a subsequent one, as Aristotle notes at *DA* 2. 10, 422<sup>b</sup>6-8.

ceiver, or the sense-organ in question, undergoing that transition, for instance in flavour or odour perception, is in important part a matter of losing a given quality by having it replaced with another.

This consideration should be added to the arguments already offered for interpreting the expression 'what perceives', at *DA* 2. 5, 418<sup>a</sup>3, as denoting the power to perceive. Those arguments are, first, that in all ten occurrences prior to *DA* 2. 5 of that expression, used in the singular, it denotes the power to perceive; and, secondly, that a number of passages subsequent to *DA* 2. 5 enable us to piece together a clear, though rather intricate, conception of the likeness between sense and sense-object in the act of perception, in expounding which Aristotle uses the expressions *τὸ αἰσθητικόν* ('what perceives') and *τῆς ψυχῆς τὸ αἰσθητικόν* ('the perceptual part of the soul') to denote the power to perceive in general or generically, rather than this or that particular sense.<sup>64</sup>

#### 4. Perception, change, and the soul

According to the theory of perception that emerges from my reconstruction, there are two distinct aspects to the likeness between perceiver and sense-object in the act of perception. When a perceiver encounters a suitable sense-object, the sense-object affects both the relevant sense-organ and the sense that resides in it. It affects the organ by causing it to undergo an ordinary change—for instance, an alteration in which the organ loses one quality and acquires another from the same range. It affects the sense by 'altering it into operation', to use Aristotle's own expression. That second kind of affection is not only a transition from potentiality to operation or actuality. It is also a non-standard case of alteration, in which the sense in question in a certain way receives a perceptible form without suffering the loss of any quality.<sup>65</sup>

<sup>64</sup> Recall also *De sensu* 4, 441<sup>b</sup>19-22, where Aristotle makes what looks to be the same step as in *DA* 3. 2 from a particular sense to *τὸ αἰσθητικόν*, meaning 'the power to perceive': he says of the affection in the wet that he takes flavour to be that it is 'such as to alter the sense of taste into operation: for it brings into operation that which perceives, which, prior to this, exists potentially; for perceiving is in accord not with learning but with contemplating' (*τῆς γεύσεως τῆς κατὰ δυνάμιν ἀλλοιωτικόν εἰς ἐνέργειαν ἀγει γὰρ τὸ αἰσθητικόν εἰς τοῦτο δυνάμει προϋπάρχον· οὐ γὰρ κατὰ τὸ μανθάνειν ἀλλὰ κατὰ τὸ θεωρεῖν ἐστι τὸ αἰσθάνεσθαι*). Note the clear recapitulation of the doctrine of *DA* 2. 5.

<sup>65</sup> It is worth pointing out that on this reconstruction of Aristotle's mature theory

This reconstruction raises a number of questions concerning the two kinds of affection that it takes to be involved in Aristotle's analysis of what happens when a perceiver encounters a suitable sense-object. Questions arise both about each of the two kinds of affection by itself and about how they are related to one another. I shall not attempt to articulate, let alone resolve, all of those questions. But I would like to close by addressing two issues that seem particularly urgent. The first concerns the nature of perception, as Aristotle conceives of it. The second concerns the apparent ascription of changes or quasi-changes to the soul and its parts or aspects.

Aristotle begins *DA* 2. 5 by recalling that perception 'comes about in being changed and affected, for it seems to be some kind of alteration' (416<sup>b</sup>33-5). It would seem that the chapter proceeds to explain what kind of alteration perception is.<sup>66</sup> Now, one curious feature of the discussion is that it presents a conception not so much of perceiving as of becoming perceptually aware, or of perceptually noticing. After all, the alteration or quasi-alteration in question is the transition from perceptual inactivity to occurrent perceiving. This, however, is a point I wish to note only to get it out of the way.<sup>67</sup> My first question is this. Should we conclude that Aristotle takes perceiving, in the sense of becoming perceptually aware, to be exhausted by a non-destructive alteration or quasi-alteration that the relevant sensory power undergoes by the agency of a suitable sense-object? He could coherently hold that while what happens

of perception in *De anima*, there may be no need to posit that the remarks about perception in *Phys.* 7. 2-3 reflect an early and subsequently superseded stage of Aristotle's thought (contra S. Menn, 'Aristotle's Definition of Soul and the Programme of the *De anima*', *Oxford Studies in Ancient Philosophy* 22 (2002), 83-139 at 86-91; similarly Heinaman, 'Aristotle and the Mind-Body Problem', 86-7). According to those remarks, acts of perception crucially involve some kind of alteration of the sense, or of the perceptual part of the soul (7. 2, 244<sup>b</sup>10-12: 'the senses, too, are in a way altered: for perception in operation is a change through the body, with the sense being in some way affected', ἀλλοιούνται γάρ πως και αι αισθήσεις· η γάρ αίσθησις η κατ' ἐνέργειαν κίνησις ἐστι διὰ του σώματος, παροχούσης τι τῆς αίσθήσεως; 7. 3, 248<sup>b</sup>6-9: 'it is clear from what has been said that being altered and alteration occur in perceptibles and in the perceptual part of the soul, but in nothing else except incidentally').

<sup>66</sup> Note also *DA* 2. 4, 415<sup>b</sup>23-5, and *MA* 7, 701<sup>b</sup>17-18, where Aristotle says that perceptions are alterations of some kind (ἀλλοιώσεις τινες).

<sup>67</sup> It is explained by Burnyeat, '*De anima* II 5', 66-73. In short: Aristotle wants to ground the cognitive accuracy of perception by showing it to be a form of receptivity, of openness to being acted on by the very aspects of reality that (proper object) perception is of. In keeping with his conception of agency as set out in *Physics* 3. 1-3 and *GC* 1. 7, he locates the agency of perceptibles in a certain kind of change or quasi-change, namely in the perceiver's transition to perceiving.

when a perceiver advances from inactivity to an act of perception is not exhausted by that kind of alteration, it is none the less the case that the act of perceiving itself just is the non-destructive alteration or quasi-alteration of the sense in question. Still, that need not be his view, for all that has been said.

That is because he can reasonably expect that readers of *De anima* are familiar with the principle that terms which in one of their uses denote a form-matter composite can also correctly be used to denote the form, or the matter, of the thing in question. After all, he has said in *GC* 1. 5 that 'flesh and bone and each of the parts of this kind are twofold, as is the case with the other things that have their form in matter: for the form as well as the matter are called flesh or bone' (321<sup>b</sup>20-3).<sup>68</sup> Suppose that he thinks acts of perception, like episodes of anger, are things that have their form in matter. That would not prevent him from using the words 'perception', 'to perceive', and the like, to pick out specifically the formal aspect of an act of perception.<sup>69</sup> In that case, he might sometimes, though not necessarily always, use those words to pick out the various forms of perceptual awareness, considered in a way that disregards any bodily process or state that may be involved in, or associated with, them. That would be especially appropriate in the context of *De anima*, which evidently is meant to make determinations about the soul 'by itself' (περὶ ψυχῆς καθ' αὐτήν: *De sensu* 1, 436<sup>a</sup>1) and its capacities, rather than about the form-matter composites that are the animals and other living things.<sup>70</sup> On this view, Aristotle can consistently hold (i) that perception is a non-destructive alteration or quasi-alteration of the sense in question, and (ii) that perception

<sup>68</sup> σὰρξ καὶ ὀστούν καὶ ἕκαστον τῶν τοιούτων μορίων ἐστὶ διττόν, ὡσπερ καὶ τῶν ἄλλων τῶν ἐν ὕλῃ εἶδος ἐχόντων· καὶ γὰρ ἡ ὕλη λέγεται καὶ τὸ εἶδος σὰρξ ἢ ὀστούν. That *GC* 1 is important background to Aristotle's psychology is emphasized and amply illustrated by Burnyeat in his 'Introduction: Aristotle on the Foundations of Sublunary Physics', 9-11. Note also *Metaph.* H 3, 1043<sup>b</sup>29-36: the term 'animal' can be used so as to mean 'soul' as well as 'soul in a body'; likewise the term 'house' might be used so as to mean 'covering' as well as 'covering consisting of bricks and stones laid thus and thus'.

<sup>69</sup> In this regard I agree with Heinaman, 'Aristotle and the Mind-Body Problem', 97.

<sup>70</sup> *De sensu* begins the *Parva naturalia* by looking back to *De anima*: 'since determinations have previously been made about the soul by itself and about each of its capacities in turn [περὶ ψυχῆς καθ' αὐτήν . . . καὶ περὶ τῶν δυνάμεων ἐκάστης κατὰ μόριον αὐτῆς], the next thing to do is to study animals and all living things, in order to ascertain which of their functions are peculiar and which ones are common' (436<sup>a</sup>1-5).

is a common attribute of body and soul,<sup>71</sup> involving both an ordinary change or modification in a sense-organ and a certain kind of change or quasi-change undergone by a sensory power. If he thinks that the relevant kind of modification in a sense-organ is the material aspect of an act of perception, he might also say (iii) that that kind of modification is perceiving.<sup>72</sup> To see that the three claims are consistent, one would only have to appreciate that in claim (i) the term 'perception' is used to denote the formal aspect of perception, in claim (ii) it picks out the form-matter composite, and in claim (iii) it denotes the material aspect. It should be noted that, for present purposes, I do not mean to claim that Aristotle does in fact conceive of acts of perception as form-matter composites, only that this is a possibility that remains open, for all that has been said.<sup>73</sup>

This takes me to the second, and last, issue on which I would like to comment before closing. According to my reconstruction of Aristotle's theory, he holds that perception is, or at any rate crucially involves, a certain kind of change or quasi-change undergone

<sup>71</sup> The idea that perception is an attribute that is common to body and soul is in play at *DA* 1. 1, 403<sup>a</sup>3-7. Aristotle there seems to presuppose that the soul acts and is affected in certain ways (403<sup>b</sup>6-7), though it does not appear to act or be affected without the body. That perception importantly involves both body and soul is also repeatedly insisted on in the *Parva naturalia*—for instance, at the beginning of *De sensu* (1, 436<sup>b</sup>6-11; 436<sup>b</sup>1-8), and in an important passage of *De somno*, in which Aristotle says that perceiving is not an attribute private to either the soul or the body, since perception in operation is 'some kind of change of the soul through the body' (*κίνησις τις διὰ του σώματος τῆς ψυχῆς*, 454<sup>a</sup>9-10). Cf. *Phys.* 7. 2, 244<sup>b</sup>11-12.

<sup>72</sup> Aristotle might well think that suitable modifications in the sense-organs form the material aspect of a given act of perception. This at any rate is strongly suggested by *GA* 5. 1, 780<sup>a</sup>4-5, where he says that the change of the liquid stuff in the eye, in so far as it is transparent, is seeing (*ἔστι δ' ἡ τούτου του μορίου κίνησις δρασις ἢ διαφανής*). This kind of change or modification is clearly distinguished from perception a little later, at 780<sup>b</sup>29-33, where the idea is that relatively slight changes in the eye-jelly bring about perception only if the organ is sufficiently pure (see above, n. 58). There is no contradiction if Aristotle is using the word 'seeing' at 780<sup>a</sup>4 to denote the material aspect of seeing.

<sup>73</sup> I have presented what I regard as strong reasons for thinking that Aristotle takes at least some forms of perception, such as flavour perception, to involve ordinary alterations that form part of the material cause of the perceptual act in question. This is enough to pose a serious challenge to, for instance, Burnyeat's spiritualist interpretation of Aristotle's theory of perception. But there is in principle room for the view that although acts of perception have material causes, they are not unified composites of matter and form, the way perceptible substances are. One might adopt such a view for the reason that ordinary changes and the activities that are acts of seeing, hearing, and so forth, differ in kind in a way that makes it impossible for them together to constitute unified composite items. (Cf. Everson, *Aristotle on Perception*, 254-5; Burnyeat, '*De anima* II 5', 82 n. 143.) This is a topic I leave for another occasion.

by the sense in question. But it would seem that the senses, for Aristotle, are parts or aspects of the soul.<sup>74</sup> Should we conclude that Aristotle's mature theory of perception in *De anima* ascribes changes or quasi-changes to the soul?

The main *prima facie* difficulty for that view is posed by Aristotle's repeated and emphatic claims, in book 1 of *De anima*, to the effect that the soul does not engage in, or undergo, change. His commitment to the changelessness of the soul motivates the famous assertion in *DA* 1. 4 that 'it is perhaps better not to say that the soul feels pity, learns, or thinks things through, but that the person does in virtue of the soul' (*DA* 1. 4, 408<sup>b</sup>13-15). At one stage in his discussion of pleasure in *NE* 10. 1-5, he writes of a given sense as being in operation, and then interrupts himself, adding that it should make no difference 'whether one says that the sense itself is in operation, or that in which it is',<sup>75</sup> the sense-organ or the perceiver. Thus one might think that when Aristotle, in *De anima* and related writings, ascribes changes to the soul or to its parts or aspects, this is only a manner of speaking. An accurate statement of Aristotle's theory, on that view, will require suitable rephrasing. Some will insist, for instance, that when Aristotle says that flavours bring the sense of taste into operation by altering it in a certain way, he has in mind that flavours affect and activate the organ of taste, or the perceiver, precisely in so far as it is equipped with the sense of taste (or something like that).<sup>76</sup> It is, I think, worth noting that

<sup>74</sup> It is worth noting that Aristotle could consistently hold that (i) the senses are (in a way) parts or aspects of the soul, and (ii) the soul is not affected when the senses are (in a way) affected by suitable sense-objects. One way of defending that apparently inconsistent pair of claims is to distinguish between two ways of considering the senses, one 'flat' and one variable (I borrow those terms from P. Grice, *Aspects of Reason* (Oxford, 2001), 20-1): (i) as states of preparedness for perceptual operation and thereby as static first actualities; (ii) as dynamic potentialities, capable of rising from first to second actuality, and thereby of advancing into the fullness of their being. What are parts or aspects of the soul, Aristotle might hold, are the senses considered as static first actualities; what is altered into operation and actuality is the sense in question, considered as a dynamic potentiality. Interesting and perhaps viable though the idea may be, I see no evidence that Aristotle means to rely on such a distinction between two ways of considering the senses. It is conceivable, though, that he takes some such distinction for granted.

<sup>75</sup> *NE* 10. 4, 1174<sup>b</sup>17-18: *αὐτὴν δὲ λέγειν ἐνεργεῖν, ἢ ἐν ᾧ ἐστὶ, μὴδὲν διαφερέτω.*

<sup>76</sup> Note the expression 'being altered with regard to the senses' (*ἀλλοιούσθαι κατὰ τὰς αἰσθήσεις*) at *Phys.* 7. 2, 244<sup>b</sup>14-15 and 245<sup>a</sup>2. 'The animal's senses are altered' and 'the animal is altered with regard to its senses' are alternative forms of expression. The question remains, however, which form of expression ascribes the alteration in question to its proper subject.

much of the substance of the interpretation that I have offered in the present paper is open to that kind of reformulation.<sup>77</sup> In order to show this to be the case, let me recapitulate the main features of that interpretation in a suitably rephrased form.

It is part of Aristotle's theory of perception that when a perceiver encounters a suitable sense-object, it is acted on in two rather different ways, and in ways that exercise two rather different capacities of the perceiver. In virtue of having sense-organs composed of certain materials with certain features, the perceiver is open to being acted on by sense-objects in straightforward ways. For instance, its organ of smell is open to being altered so as to lose its neutral condition of moistness by being made somewhat dry. In virtue of being equipped with the power to perceive, organisms of many kinds are endowed with a distinctive kind of receptivity to perceptible form. When a perceiver encounters a sense-object in suitable circumstances, it is acted on by having the relevant sense-organ changed in some way or other. For instance, a fragrant lavender bush has dried the surrounding air in a certain way, and the air in turn brings about a certain drying in the perceiver's organ of smell. But this is not yet a complete account of what happens when a perceiver encounters a sense-object in suitable circumstances, since it leaves out of consideration the fact that the perceiver's power to perceive is engaged. In engaging the perceiver's sensibility, the sense-object

<sup>77</sup> One feature of my interpretation that cannot simply be 'formulated away' is my view that Aristotle, at any rate in *DA* 2. 5-3. 8, regards the senses as the proper subjects of certain extraordinary changes or quasi-changes. However, as indicated before (n. 18), I remain agnostic about whether this is what he would want to say on the final and most careful analysis. It is conceivable, and cannot be ruled out, that in *DA* 2. 5-3. 8 he is, perhaps for didactic purposes, systematically indulging in some form of quasi-personification of cognitive capacities in a way that is comparable to the quasi-personifications of desiderative capacities familiar from his ethical writings. (Note, for instance, *NE* 7. 6, 1149<sup>b</sup>29-<sup>b</sup>1, where anger or spirit gets upset and rushes to vengeance, and appetite rushes off to enjoy whatever reason or perception says is pleasant.) This, however, is a large assumption to make; and I see no decisive reason to make it. Even if one makes an assumption along such lines, one will still need to take seriously the precise terms and details of Aristotle's exposition in *DA* 2. 5-3. 8, in an effort to extract his theory of perception from that exposition. Even if the relevant non-destructive changes or quasi-changes are ultimately to be ascribed, not to the senses, but to the animal in virtue of the senses, the fact remains that Aristotle conceives of those changes or quasi-changes both as non-destructive and as in some way quality-imparting. Another fact that remains is that the drying of the organ of smell and the moistening of the tongue, envisaged at *DA* 2. 9 and 10, plainly are changes that consist in one quality being replaced with another. Hence the characterization of Aristotle's theory of perception that I am about to offer in the main text.

brings about a certain kind of change or quasi-change which Aristotle conceives of as a non-destructive alteration or quasi-alteration. It is an alteration or quasi-alteration in that it involves imparting perceptible form in a certain way. It is non-destructive in that it is not a matter of replacing a given quality, or perceptible form, with another—except incidentally, if the perceiver is switching from, say, seeing one colour to seeing another, rather than from not seeing to seeing.

In engaging the perceiver's power to perceive, the sense-object carries out a distinctive form of agency and hence imparts form in a certain way. For instance, it whitens or sweetens the perceiver in a distinctive and non-standard way. On the other hand, when an appropriately equipped organism encounters a suitable sense-object, it is subjected to a distinctive form of patiency and hence takes on form in a certain way. For instance, it is whitened or sweetened in a distinctive and non-standard way. This distinctive way of imparting and receiving perceptible form is a certain kind of interaction between sense-objects and perceivers which is crucially characterized in terms of the engagement of sensory powers by suitable sense-objects. Aristotle takes the view that this kind of interaction is perceiving, or that it is perceiving considered in a certain way, namely in a way that disregards any bodily process that may be involved.

It is unclear, however, whether, for purposes of adequately representing Aristotle's theory, all that rephrasing is called for. That is because it is unclear whether anything that Aristotle says in book 1 of *De anima* rules out the ascription, to the soul or its parts, of changes or quasi-changes of the kind introduced in *DA* 2. 5. This applies also to the *DA* 1. 4 passage about how to ascribe mental states.<sup>78</sup>

The context of the passage is a difficulty for Aristotle's view that the soul does not undergo change, at any rate not in its own right. According to a line of argument that he professes not to find completely unreasonable, the soul does undergo certain kinds of change:

<sup>78</sup> Menn, 'Aristotle's Definition of Soul and the Programme of the *De anima*', 99-102, offers an interpretation of the passage according to which it does not even rule out ascribing mental states or acts to the soul: 'Aristotle's intention', he holds, 'is simply to deny *motions* to the soul, redescribing all apparent motions of the soul either as non-kinetic activities or as motions of the body that are causally connected with the soul' (emphasis original). Similarly Heinaman, 'Aristotle and the Mind-Body Problem', 97 n. 28.

'for we say that the soul is pained, delighted, feels confidence and fear, is upset, perceives, and thinks things through; and all these things are changes' (408<sup>b</sup>1-4). He concedes, perhaps only for the sake of the argument, that those mental states or acts are changes 'as much as you like', such as motions or alterations of the heart or some other bodily parts (408<sup>b</sup>5-11). He then shows the way out of the difficulty by recommending the view that it is the person, not the soul, that is the proper subject of the relevant kinds of mental states or acts.

In the context, he is evidently concerned to reject, and reject emphatically, the ascription of change to the soul (*DA* 1. 4, 408<sup>b</sup>30-1). However, the kinds of change that are under consideration in book 1 of *De anima* are the kinds familiar from the *Physics* and *De generatione et corruptione*, with a heavy focus on locomotion. Given Aristotle's conception of the soul as unextended and immaterial, it is easy to see why he rejects the ascription to it of locomotion, growth, diminution, and at least many forms of alteration, such as alteration from one perceptible quality to another. However, book 1 contains not even the faintest hint of the non-destructive form of alteration or quasi-alteration that is introduced and explained in *DA* 2. 5. Moreover, it may well be Aristotle's considered view, and the view to which he means eventually to guide his readers, that that kind of transition really is only a quasi-alteration, and no genuine case of change at all. In what looks to be a fragment on perception preserved in *DA* 3. 7, he says:

φαίνεται δὲ τὸ μὲν αἰσθητὸν ἐκ δυνάμει ὄντος τοῦ αἰσθητικοῦ ἐνεργεία ποιῶν οὐ γὰρ πάσχει οὐδ' ἀλλοιοῦται. διὸ ἄλλο εἶδος τοῦτο κινήσεως ἢ γὰρ κίνησις τοῦ ἀτελοῦς ἐνεργεία, ἢ δ' ἀπλῶς ἐνεργεία ἐτέρα, ἢ τοῦ τετελεσμένου.

The sense-object manifestly acts so as to bring what perceives from capacity into operation; for it is not affected or altered. This is why this is something different from change [*alternatively*: this is why this is a different kind of change]: for change is the operation of what is incomplete, but unqualified operation—that is, operation of what has been perfected—is different. (*DA* 3. 7, 431<sup>a</sup>4-7)

The fragment suggests that the transition to perceiving, as it is undergone by the sense in question, is a case of being acted on in a certain way without being genuinely changed at all. In any case, Aristotle conceives of that transition either as a non-standard form of alteration or as a quasi-alteration that is no genuine form

of change at all. As a result it is far from clear whether the remarks about the soul and change in *DA* 1, which presumably are about standard or at any rate genuine kinds of change, have any impact on the question whether non-destructive changes or quasi-changes of the kind identified in *DA* 2. 5 can properly be ascribed to the soul or to its parts or aspects. Thus Aristotle may well mean precisely what he says when, in *DA* 3. 2, he identifies the sense of hearing as what is in a certain way acted on by sound and what, in being so acted on, receives auditory form. After all, by the time we come to *DA* 3. 2, we have been introduced to entirely novel ways of being acted on, and thereby also to entirely novel ways of receiving form.

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## EUDAIMONIA AS AN ACTIVITY IN NICOMACHEAN ETHICS 1. 8-12

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### 1. Introduction

GIVEN the attention it has received, students of Aristotle may well be weary of the debate over inclusivist and non-inclusivist interpretations of the *Nicomachean Ethics*' account of *eudaimonia*. But I believe the issue is worth revisiting because evidence favouring the non-inclusivist view has yet to be appreciated. While attention has focused on *Nicomachean Ethics* 1. 7, there is strong support for the non-inclusivist view in the immediately following chapters of book 1.

Repeatedly, throughout the *Eudemian Ethics*, the *Nicomachean Ethics* and the *Politics*, Aristotle expresses his view on the identity of *eudaimonia*:

- (1) '... human good turns out to be *activity*<sup>2</sup> of soul in accordance with virtue, and if there are several virtues, (human good is *activity* of soul) in accordance with the best and most perfect virtue' (*NE* 1098<sup>a</sup>16-18).
- (2) '... and we say that happiness is these [the best *activities*: 1099<sup>b</sup>29], or one—the best—of these (activities)' (*NE* 1099<sup>a</sup>29-30).
- (3) Happiness 'has been said to be a kind of *activity* of soul according to virtue' (*NE* 1099<sup>b</sup>26).
- (4) '... happiness is an *activity* of soul in accordance with perfect virtue' (*NE* 1102<sup>a</sup>5).

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<sup>1</sup> I am concerned with the *Eudemian Ethics*, the *Nicomachean Ethics*, and the *Politics*, which, on the issue that concerns me, express the same view. But, as we shall see, that position can be instructively contrasted with a view set out in the *Rhetoric*.

<sup>2</sup> The word is *ἐνέργεια*, which in some of the quoted passages might be better translated as 'actuality'. Apart from a few remarks (n. 30), the present paper does not address the point that Aristotle counts *eudaimonia* as an activity in a sense to be contrasted with change (*Metaph.* 1048<sup>b</sup>25-6).