

Aristotle on the Objects of Perception

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I. Introduction:

In *De Anima* II.6, Aristotle divides the objects of perception (or “perceptibles,” *aisthêta*,) into three distinct kinds. First, there are “special perceptibles” (or “proper” or “exclusive” perceptibles, *idia aisthêta*) such as colours, sounds and flavours, which can be perceived in their own right by only one sense. Second, there are “common perceptibles” (*koina aisthêta*) such as shapes, sizes and movements, which can be perceived in their own right by multiple different senses. Finally, there are “incidental perceptibles”—Aristotle’s favourite examples are particular human beings, such as the son of Diares—which are perceived not “in their own right” (*kath’ hautō*), but only “incidentally” (*kata sumbebêkos*). In this paper, I examine this division of the objects of perception into three distinct kinds and explain what it amounts to. I begin with Aristotle’s distinction between perceiving something in its own right and perceiving it incidentally. I argue this marks a *causal* distinction: something is perceived in its own right if it causes perception insofar as it is what it is, and is perceived incidentally if it coincides with something perceived in its own right. I then turn to Aristotle’s second distinction, *within* the class of objects that are perceptible in their own right, between special and common perceptibles. I argue that for Aristotle these differ both in how they act on the sense organs and also in how they exist in the world: special perceptibles, unlike common perceptibles, belong to homogeneous bodies on account of their underlying chemical composition, and affect sense organs along a range between contrary extremes. Appreciating these differences allows us to explain the primacy Aristotle assigns to special perceptibles in his account of perception, and also his claim that perception of them—and of them alone—is free from error. I conclude with some brief reflections on the relationship between Aristotle’s view and the today more familiar distinction between “primary” and “secondary” perceptible qualities.

De Anima II.6 is a short chapter separating Aristotle’s initial, general characterization of perception as a kind of change in *DA* II.5 from his discussion of the five senses in *DA* II.7–11. I quote the chapter here in full, dividing it into sections to facilitate subsequent analysis:

[A] In the case of each sense, it is necessary to speak first about perceptible objects. But “perceptible” is said in three ways: in two of these we say things are perceived in their own right, and in one incidentally. And of the first two, one is special to each sense, the other is common to them all.

[B] By “special” I mean what cannot be perceived by another sense, and about which one cannot be deceived. For example, sight is of colour, hearing is of sound, and taste is of flavour, whereas touch has several different objects. In any case, each sense discerns these, and is not deceived about whether there is colour, or sound, although it may be deceived about what or where the coloured or sounding thing is. Accordingly, these sorts of objects are said to be special to each sense.

[C] Common perceptibles include motion, rest, number, shape, and magnitude, since these sorts of objects are special to no one sense, but are, rather, common to them all. For in some cases movement is perceptible by both touch and sight.

[D] Something is said to be perceptible incidentally if, for example, the white thing should be the son of Diares. There is perception of him incidentally, since he coincides with the white, of which there is perception. That is why one is not affected by the perceptible object insofar as it is such a thing [as the son of Diares].

[E] Of things that are perceptible in their own right, special perceptibles are perceptible primarily (*keurios*), and the essence of each sense is naturally relative to them. (418a7–25)¹

Aristotle begins the chapter [A] by claiming that, in the case of each sense, one must speak first about perceptible objects. This fits his procedure in the following chapters. In *DA* II.7–11, and in the complementary chapters in *De Sensu*, Aristotle discusses each of the five senses largely by discussing its correlated special objects. For example, he analyzes sight (*DA* II.7, *Sens.* 3) largely by considering the nature of colour; the same goes for hearing and sounds, smell and odours, and taste and flavours (touch is something of a special case—I discuss it below). Why does he proceed in this way? One might think his motivation was entirely classificatory: he wished to distinguish the senses from each other and thought identifying features of the world uniquely correlated with each sense would enable him to achieve this goal. Yet while Aristotle undoubtedly was interested in distinguishing the senses, and sought to do so by reference to their correlated objects,² I believe his motivation for proceeding in this way ran deeper. For one thing, had

¹ Translations are my own, unless otherwise noted. For *De Anima* I read the text of Ross 1961, unless otherwise noted.

² The classic discussion of Aristotle’s strategy of distinguishing the senses by appeal to their objects is Sorabji 1971. In Johnstone (forthcoming), I argue that Aristotle was more consistent in applying this strategy than Sorabji ultimately supposed, especially in the case of touch.

Aristotle's goals been purely classificatory, he would not have needed to dedicate so much attention to the natures of each special perceptible—merely identifying them would have sufficed. In addition, Aristotle often traces other features of each sense, such as the constitution of the sense organ, back to the nature of the correlated special perceptibles. For example, the eye must be composed of a transparent liquid to perceive colours (*Sens.* 2, 438a12–16); the nose must be potentially dry to perceive odours, which are “of” the dry (*DA* II.9, 422a6–7); the tongue must be potentially moist (*DA* II.10, 422a34–b5) to perceive flavours, which are affections of the moist (*Sens.* 4 441b19–21; cf. *DA* II.9, 422a6); and the flesh must be composed of a mixture of all the elements to perceive the full range of tangible contraries (*DA* III.13, 435a19–24; cf. *PA* II.1, 647a15–21). This all suggests the special perceptibles have explanatory priority on Aristotle's account.

A key passage for understanding Aristotle's views on the priority of perceptibles in his accounts of the five senses appears at the start of *DA* II.4:

If one ought to say what each of these [faculties] is—for example, what the intellective or perceptive or nutritive faculty is—then one should first say what thinking is and what perceiving is; for activities and actions are prior in account to potentialities.³ But if this is so, and [if] moreover their corresponding objects⁴ should have been studied beforehand, it would for the same reason first be necessary to make determinations about these [objects], for example, concerning nourishment and the objects of perception and thought. (415a16–22)

In this passage, Aristotle claims activities and actions are prior “in account” (*kata logon*) to capacities of the soul. For example, if we want to know what sight is, we first need to know what seeing is, since sight just is the capacity to see. He then adds that if the objects corresponding to each activity are prior to the activity, and if one should have studied the objects first, then the objects are prior in account to both activities and capacities. Although this claim is framed as a conditional, I take it Aristotle accepted the antecedents. If he did, his claim is that in order to

³ Aristotle defends the general priority of actuality to potentiality in *Met.* Θ.8.

⁴ The word translated here as “corresponding object,” *antikeimenon*, literally means something like “opposite.” Its use in this context is best understood by reference to Aristotle's notion of “relatives,” explained in *Cat.* 7. There (7b35–8a12), Aristotle maintains that perception and its object are relatives, since every episode of perception is *of* something perceived. He also argues this dependence relation is asymmetrical, since the object of perception has both existential and causal priority to the perception of it. For a recent discussion of these passages—and of perception and its objects as asymmetrical relatives—see Caston, 2018.

study any power of the soul, one should first examine its correlated objects.⁵ As noted, this is indeed how Aristotle proceeds when studying the senses. Let me add here two further points. First, given Aristotle's general theory of change it is unsurprising that he thought one must study the correlated objects first. This is because Aristotle conceived of the powers of the soul as principles of change: they are powers either to bring about change *in* something else ("active powers") or to undergo change as a result of being acted on *by* something else ("passive powers").⁶ The senses fall into the latter class: they are, at root, powers to be acted on *by* certain features of the world.⁷ Hence, it stands to reason that if we want to understand seeing, we first need to know what acts on us to bring seeing about. This turns out to be "colour or what has colour" (*chrōma ê to echon*, *DA* III.2, 425b18–19). Hence, to study sight, we need to study colour. Second, this order of explanation is what enables Aristotle's accounts of the senses to be informative. Aristotle identifies the object of sight, not merely as "the seeable," but also as "colour." If he can give a substantive account of the nature of colour, he can informatively discuss other features of each sense as depending on it—for instance, by discussing what the sense organ and medium must be like for colour to be perceived—without circularity or triviality.

In sum, for these reasons, Aristotle bases his analyses of the five senses on his accounts of the natures of their correlated special objects. However, before embarking on this task in *DA* II.7–11 he introduces some distinctions. This is because, as he puts it [A], "perceptible" is said in three ways (*legetai to aisthêton trichôs*, 418a8). In context, what he means here is clearly that there are three kinds of things we call "perceptible." His main goal in *DA* II.6 is to introduce this threefold division of perceptible objects. In order to understand this division, it is important to understand that it rests on two separate distinctions. First, there is the distinction between perceiving things "in their own right" and perceiving them "incidentally." Second, there is a further distinction, within the class of things perceived in their own right, between "special" and "common" perceptibles. I shall consider each of these two distinctions in turn.

⁵ For further discussion of Aristotle's general principle that objects have definitional priority to powers of the soul, see Johansen 2012, Ch.5. Aristotle may have been influenced by Plato's idea in *Republic* V (477c1f.) that powers (*dunamis*) are differentiated primarily by what they are "set over" (*epi*).

⁶ Aristotle presents the general distinction between "active" powers (powers to bring about an effect in something else, or in oneself *qua* something else) and "passive" powers (powers to be affected *by* something else) in *Met.* Θ.1. He classifies perception as a power to be acted on by something else in *DA* II.5, esp. 416b33–35.

⁷ This is not to deny that a perceiver may be "active" in various ways when perceiving. Rather, the idea is simply that, in the causal interaction that is perceiving, the sense object is the actor and the sense what is acted upon.

II. Incidental Perception and Incidental Perceptibles

How should we understand Aristotle's distinction between perceiving something "in its own right" (*kath' hauto*) and perceiving something "incidentally" (*kata sumbebêkos*)? We might be tempted to understand Aristotle as marking a distinction between perceiving something *strictly speaking* and *inferring* its existence on the basis of what we perceive, perhaps by an act of thought.⁸ However, this was almost certainly not what Aristotle had in mind. For one thing, he never rescinds or qualifies his initial characterization of all three kinds of objects as "perceptibles" (*aisthêta*). Furthermore, were he to do so, he would seem to commit himself to the view that only colours, sounds, shapes, sizes and the like are ever *really* perceived. Yet Aristotle never endorses such a view, and regularly speaks as if the things that *have* these qualities are perceived, including by non-human animals.⁹ Moreover, Aristotle's general inclination, as I understand it, was to expand, not to contract, the power and role of perception relative to thought. Thus, perception receives far more attention in *De Anima* than any other topic and features heavily in other treatises. In addition, Aristotle had good reasons to adopt an expansive conception of the power of perception. In particular, doing so enabled him to offer a sophisticated account of the psychology of non-human animals, while still maintaining a sharp dividing line between non-human animals and humans on the basis that the former lack reason.¹⁰ This all indicates that, for him, perceiving something incidentally really is a way of *perceiving* it, not a way of inferring its existence from what we perceive strictly speaking.

A second option for understanding Aristotle's distinction between perceiving something "in its own right" and perceiving it "incidentally" is to equate the former with perceiving things "directly" and the latter with perceiving them "indirectly." Interpreters often adopt this terminology to characterize Aristotle's view.¹¹ However, the language of "direct" and "indirect" perception is poorly suited to

⁸ For the claim that incidental perception is not *really* perception for Aristotle, strictly speaking, see e.g. Hicks 1907, 430; Ross 1961, 271; cf. Block 1960, 94; Graeser 1978, 89; Kahn 1995, 367–8, 369 n.17.

⁹ Aristotle often speaks of animals perceiving their prey: for example, a lion hears an ox (*EN* III.10, 1118a20–21), and an Egyptian ichneumon (a kind of mongoose) sees an asp (*HA* 612a16–17). I should add that if animals perceived only colours, sounds, shapes and the like, the kinds of complex behavior Aristotle attributes to them—for example, the ichneumon summons others to help before attacking the asp—would be inexplicable.

¹⁰ Sorabji (1993) argues that Aristotle deliberately expanded the role and contents of perception, which had remained limited in Plato, to account for the psychology of non-human animals while denying them reason (see esp. 12–20).

¹¹ See for example Beare 1906, 57; Hicks 1907, 77, 360–61, 472; Block 1960, esp. 94–7; McKirahan 1992, 254; Scheiter 2012, 261–2, Papish 2014, 344.

capture what Aristotle had in mind. Admittedly, it is not always clear what writers mean by “direct” and “indirect” in this connection. However, in contemporary philosophy this distinction typically marks the presence or absence of some kind of psychological intermediary, such as a mental representation, as for example in debates about the merits of “direct realism.”¹² However, when Aristotle says [D] that the son of Diareis is perceived incidentally, he is not claiming the son of Diareis is perceived only by means of an intervening mental representation. For one thing, Aristotle may well have thought some kind of representation is involved in the perception of special and common perceptibles too.¹³ And in any case, directness and indirectness are simply not what Aristotle typically marks, in other contexts, when he distinguishes between the *kath’ hauto* and *kata sumbebêkos* causes of some effect. Rather, for Aristotle, to say something brings about an effect *kath’ hauto* is generally to say it does so “as such” or “in virtue of itself,” that is, insofar as it is the very kind of thing that it is. By contrast, if something brings about an effect *kata sumbebêkos*, it does so *not* insofar as it is that kind of thing, but rather insofar as it coincides with something that brings about the effect *kath’ hauto*. For example, Polyclitus and a sculptor can both truly be said to be a cause of the statue, but the former is the cause only incidentally (*Physics* II.3, 195a33–b3). This is not because Polyclitus causes the sculpting *indirectly* (after all, he *is* the sculptor). Rather, it is because it is *qua* sculptor, not *qua* Polyclitus, that he sculpts. Similarly, “a man” could be called an incidental cause of the statue—as could “a musician,” if Polyclitus happened to be a musician.

In keeping with Aristotle’s typical use of these phrases, I believe his distinction between perceiving something *kath’ hauto* and perceiving something *kata sumbebêkos* is, at root, a *causal* distinction: it marks the difference between being a cause of perception *as such* and being a coincidental cause. Recall that, for Aristotle, perception is fundamentally a causal interaction between perceiver and world: an “agent” (some part or aspect of the world) acts on a “patient” (some part or aspect of the perceiver) to assimilate the perceiver to itself: it makes the perceiver *like* itself, and thereby gets itself perceived. The details of what exactly happens are controversial, but need not detain us here. For present purposes, the important idea is this: for Aristotle, something is perceived “in its own right” when it acts on the perceiver to get itself perceived *as such*, that is, *qua* the kind of thing it is; it is

¹² For example, sense-data theorists (e.g. Jackson 1977, Robinson 1994) sometimes claim we perceive sense-data “directly,” and mind-independent objects in the world only “indirectly.”

¹³ This is suggested by his application of the language of truth and falsehood to perceptions of special and common perceptibles, and when he claims perceptions of common perceptibles, at least, are often “false.”

perceived incidentally when it coincides with something perceived in its own right.¹⁴ For example, when Aristotle claims the son of Diares is perceived incidentally, his thought is not that he is not perceived at all, strictly speaking, or that he is perceived indirectly. Rather, it is that what causes our perception of him is not his being the son of Diares, but instead his colour, shape, size, sound of voice, and so on. These features of him—the special and common perceptibles—are perceptible “in their own right,” which means they are capable of *causing* perception *as such*. Thus, Aristotle says [D] we perceive the son of Diares not insofar as he is *such* (i.e. the son of Diares), but insofar as he coincides with the colour white, which we perceive in its own right by sight.

Now, for Aristotle individuals like the son of Diares are not the only things we perceive “incidentally.” In particular, Aristotle claims, special perceptibles correlated with one sense can sometimes be perceived incidentally by a different sense, as when we perceive “the sweet” by sight (*DA* III.1, 425a21–b3).¹⁵ Here, Aristotle seems to have in mind a case in which we see something that is *in fact* both white and sweet, such as some sugar. Sugar can act on a perceiver’s eyes to get itself seen. However, it does so *not* insofar as it is sweet, but insofar as it is white. Since sugar *is* in fact sweet and we *do* perceive sugar by sight, it is true to say we perceive the sweet by sight, if only incidentally: the sweetness and the whiteness coincide in a perceptible thing (the sugar) that is numerically one. In other words, we *see* the sweet insofar as it coincides with the white, not in its own right. My claim here is not that Aristotle distinguished between different varieties of incidental perception, as some have claimed.¹⁶ Rather, I believe he had a single, consistent notion of what it is to perceive something incidentally, which he applied both to the perception of the sweet by sight

¹⁴ In understanding the distinction in this way, I reject the view of Hamlyn (1968, 105–8), on which an object is perceptible *kath’ hauta* when, and because, reference to it is “essential” to the definition of the sense that perceives it.

¹⁵ In *DA* III.1, Aristotle suggests *common* perceptibles can also be perceived incidentally: “nor again can there be a special sense organ for the common perceptibles, which we perceive by each sense incidentally” (425a14–16). This remark seems to clash with the idea that we perceive common perceptibles *kath’ hauta*. Three main strategies have been proposed to alleviate the tension (Owens 1982 provides a useful survey). The first is to emend the text by inserting a negation before “incidentally.” The second is to argue the tension is merely apparent: common perceptibles are perceived incidentally by each sense, but in their own right by the common sense (e.g. Everson 1996, 148–57). The third is to read the remark in question as part of the view Aristotle wished to oppose (e.g. Owens 1982; Gregoric 2007, 69–82). My claims below require only that each sense can perceive common perceptibles, and that they are perceived *kath’ hauta*. While these claims fit well with option 3, they are consistent even with Everson’s view, as I understand it.

¹⁶ E.g. Marmodoro 2014, 182–4.

and to individuals like the son of Diare. On this view, we perceive something incidentally when, and because, it coincides with something we perceive in its own right.¹⁷

For Aristotle, special perceptibles can be perceived incidentally, as for instance when we perceive the sweet by sight. What then is distinctive about “incidental perceptibles”? I submit that incidental perceptibles are distinguished by the fact that they can *only* be perceived incidentally. In this, they are unlike the sweetness of the sugar, which *can* be perceived in its own right by taste. What belongs to this class? Aristotle never answers this question explicitly. However, I believe that he considered particular bodies to be the paradigm cases of incidental perceptibles. In support of this view, I note that Aristotle clearly thought bodies are perceptible; indeed, he insists *all* bodies are perceptible.¹⁸ As such, they should fit into his classification of the objects of perception somehow. However, particular bodies are not qualities like colours or shapes; rather, they *have* such qualities. The account of incidental perception offered here makes perfect sense of Aristotle’s claims that bodies are perceptible. Particular bodies are perceptible, for him, because they *cause* perception—not in their own right, but rather insofar as they have the perceptible qualities they have (every quality is, after all, a quality *of* something).¹⁹ By contrast, the perceptible qualities of bodies serve, strictly speaking, as the agents effecting the change we call perception. Since these qualities—and they alone—bring about perception *as such*, they alone are perceived “in their own right” on Aristotle’s account.

III. The Distinction Between Special and Common Perceptibles

¹⁷ On this view, the coincidence in question already exists in the world; it is not effected by the perceiver’s mind. Incidental perceptibles exist independent of the mind and cause themselves to be perceived, in accordance with Aristotle’s perceptual realism. Here, it is useful to distinguish *what* we perceive (i.e. the object of perception) from what we perceive it *as*. My focus (like Aristotle’s in *DA* II.6) is on the objects of perception. What I perceive them *as*—and what psychological powers this requires—is a further question, which I do not take up here. This view is charitable to Aristotle in that it readily allows him to say, in accordance with ordinary ways of speaking, that one can perceive something *as* other than what it *is*: for example, one can perceive the son of Diare but mistakenly perceive him *as* the son of Cleon. For contrasting views, see Cashdollar 1973, who *identifies* incidental perception with perceptual predication and hence tends to treat the “percept” as created by the perceiver and existing in the mind, and Modrak 1987, who claims that for Aristotle “the perception of a *kata sumbebêkos* sensible is the apprehension of an *interpreted* sensory object” (69–70, emphasis added) and “the percipient must have the concept of ‘the son of to perceive the son of Diare’” (69).

¹⁸ All bodies are perceptible because all necessarily have at least some perceptible qualities—the tangible qualities—just insofar as they are bodies (*Gen et Corr.* II.2). Aristotle often uses “perceptible body” to refer to bodies generally.

¹⁹ See especially *Categories* 8.

To this point, I have focused on Aristotle’s distinction between perceiving something “in its own right” and perceiving something “incidentally.” I turn now to the second main distinction Aristotle introduces in *De Anima* II.6, within the class of things that are perceptible in their own right, between “special” and “common” perceptibles. In [A], Aristotle claims the former are “special” or “exclusive” (*idia*) to one sense, whereas the latter are “common” (*koina*) to them all.²⁰ As is widely noted, there is a problem with this way of drawing the distinction, since it leaves it unclear how to classify features of the world that are perceptible in their own right by more than one sense but not by all five. It seems there *are* such features: for example, can we really perceive shapes by smell? Indeed, Aristotle himself claims in *De Sensu* 4 (442b7) that some common perceptibles are perceptible only by sight and touch. On the basis of this passage, and also of considerations of charity, I, like most interpreters, take his considered view to have been that common perceptibles are perceptible in their own right by *more than one* sense, but not necessarily by all five.²¹

What is the membership of each of these two classes of perceptible? In [B], Aristotle illustrates the class of special perceptibles by saying “sight is of colour, hearing is of sound, and taste is of flavour, whereas touch has several different objects.” We can safely add that smell is of odour, giving us four kinds of special perceptibles, corresponding to the first four senses Aristotle distinguishes: colour (*chrōma*) corresponding to sight, sound (*psophos*) to hearing, odour (*asmê*) to smell, and flavour (*chumos*) to taste. However, the sense of touch is a harder case. In *DA* II.6, Aristotle says only that it has several different objects. However, in *DA* II.11 he provides further details: touch is concerned with “hot/cold, wet/dry, hard/soft, and whatever else is of this sort” (422b26–27). Later in this chapter, he specifies what unifies these different qualities: they are the “differentiae (*diaphorai*) of body *qua* body” (423b27). He also refers his readers to his fuller discussion in *On Generation and Corruption*. There, in II.2, Aristotle identifies the features of bodies correlated with touch by listing seven pairs of contraries, adding to the incomplete list in *DA* II.11 (hot/cold, wet/dry, hard/soft) four further pairs: heavy (*baru*)/light (*kouphon*), viscous (*glischron*)/brittle (*krauron*), rough (*trachn*)/smooth (*leion*),

²⁰ Aristotle also claims common perceptibles are common to *all* the senses in [C], *Sens.* 1, 437a8–9, and *Insomn.* 458b4–6.

²¹ Note the claim is that common perceptibles *can* be perceived by more than one sense, not that more than one sense is required to perceive them (or to perceive them “fully”—*pave* Marmodoro 2014, 171–4).

and coarse (or thick, *pachū*)/fine (or of thin consistency, *lepton*) (329b17–19). This list gives the impression of being complete. If it is, this completes Aristotle’s list of the special perceptibles.²²

As for common perceptibles, in [C] Aristotle lists five: movement or change (*kinēsis*), rest (*êremia*), number (*arithmos*), shape (*schēma*), and magnitude (*megethos*). Compatible lists appear in *Sens.* I (437a8–9) and in *De Insomniis* 1 (458b4–6). In *DA* III.1, Aristotle adds “unity” (*henos*, 425a16).²³ In *Sens.* 4 (442b5–7) he includes, by implication, the rough (*to trachū*), the smooth (*to leion*), the sharp (*to oxū*) and the blunt (*to amblū*). Finally, in *De Memoria* 1 he claims time is perceived by the same power as motion and rest—although he never actually calls time a common perceptible.²⁴ We cannot be sure this list is comprehensive, or that Aristotle was fully committed to including every feature he mentions only once. However, the paradigmatic common perceptibles, which he returns to in multiple places, are clear enough: they are movement, rest, number, shape, and magnitude. In the remainder of this paper, I therefore focus on these five.

Despite the fact that both special and common perceptibles can be perceived in their own right, Aristotle marks several differences between them. These differences include:

1. Special perceptibles can be perceived in their own right by only one sense, whereas common perceptibles can be perceived in their own right by multiple senses [B, C].
2. Special perceptibles, in contrast to common perceptibles, are perceived “primarily” (*keurios*), and the “essence” (*ousia*) of each sense is “naturally relative to” them [E].
3. For each kind of special perceptible there is a dedicated sense organ. This is not true of any common perceptible (*DA* III.1).
4. Each kind of special perceptible lies on a spectrum delimited by a pair of contraries. The same is not true of common perceptibles.

²² One might suppose Aristotle thought there are ultimately only *two* pairs of contraries correlated with touch—hot/cold and wet/dry—for he claims in *Gen et Corr.* II.2 that the seven pairs of tangible contraries “lead back to” (*anagontai eis*) these two “primary” (*prôtai*, 329b16) pairs. However, I take him to mean by this not that hard, soft, brittle, etc. “reduce to” hot, cold, wet and dry, if that means they are “really nothing but” these four, but rather that the other tangible qualities depend on, and emerge from, the interaction of the two primary pairs (see section IV below). If this is right, the special perceptibles correlated with touch can include all seven pairs of contraries Aristotle lists, understood as the “lowest-level” qualities of bodies considered as such. For a fuller defence of this view, see Johnstone (forthcoming).

²³ Retaining *henos* with the MSS (omitted by Ross).

²⁴ *Mem.* 1, 450a9–10. I am inclined to agree with Gregoric 2007 (104–5; cf. Kahn 1966, 53 n.23) that Aristotle wished to claim here only that we are aware of time by means of the faculty of perception, not that time is a common perceptible.

5. The perception of special perceptibles is free from error [B]. By contrast, the perception of common perceptibles is highly prone to error.

The challenge for any interpreter wishing to understand Aristotle's distinction between special and common perceptibles is to explain these differences, and, moreover, to do so in a way that is consistent with Aristotle's claim that both are perceptible "in their own right." In what follows, I take up this challenge. I argue that common and special perceptibles differ in the way they interact causally with the sense organs, and also in the way they exist in the world.

Building on an idea I have advanced elsewhere,²⁵ I first propose that common perceptibles are perceived when, and because, a perceiver registers changes or variations in the stimulation of their sense organs by special perceptibles. For example, one perceives movement when the colours, sounds or smells one is perceiving change across time, and rest by the absence of such changes. Similarly, one can perceive shape by means of variations in one's tactile experience or visual experience, as for instance when an edge is registered as the point at which two different colours meet, or when one experiences a change in tactile resistance. Number is perceived by registering variations in the input from a single sense, either at a time (as when one sees or feels two distinct shapes with a gap between) or across time (as when one hears successive gunshots). Finally, size is perceived by (for instance) feeling along the side of a solid object, or on the basis of the proportion of one's visual field that is occupied by certain regions of colour. This way of understanding the primacy of special perceptibles makes good sense of Aristotle's otherwise cryptic remark, in *DA* III.1, that common perceptibles are all perceived "by means of change" (*kinēsei*, 425a17). It also fits well with his claim that "we perceive what is at rest by its not being moved, and number by the negation of continuity, and by the special perceptibles; for each sense perceives one [kind of perceptible]" (425a18–20). To be clear, the idea here is not that common perceptibles *are* changes and variations in the stimulation of the sense organs, or are somehow constructed out of them. Rather, it is that common perceptibles—for example, the sizes and shapes of bodies—are *perceived by means of* changes and variations in the stimulation of the perceiver's sense organs: changes brought about by the action of special perceptibles.

²⁵ Johnstone 2015, 15–16.

This view enables us to explain the differences between special and common perceptibles listed above. First, it accommodates Aristotle’s claim that special perceptibles are perceived “primarily” (*kurios*). Some have understood Aristotle as claiming here that special perceptibles alone are “perceived” in the full sense of the word.²⁶ Instead, I propose his thought was that the interaction between special perceptible and perceiver is the most *fundamental* causal interaction involved in perceiving. It is fundamental, I claim, because perception of common perceptibles (and, ultimately, of incidental perceptibles) depends on it; for one cannot register changes and variations in the stimulation of one’s sense organs by special perceptibles if one’s sense organs are not being stimulated by any special perceptibles. Thus, Aristotle first seeks to understand the most basic form of causal interaction involved in perception—that occurring between a special perceptible and its correlated sense—and only then proceeds to consider how we perceive other kinds of objects. This explains why Aristotle focuses so heavily on the perception of special perceptibles in *DA* II.5 and 7–12. It also makes good sense of Aristotle’s claims that common perceptibles “accompany” or “follow” (*akolouthounta*) special perceptibles (*DA* III.1, 425b5–6) and are somehow “in” them (*en*, 425b9). To be clear, the idea is not that special perceptibles have a kind of ontological primacy in the world. Rather, it is that they have primacy in the special kind of causal interaction we have *with* the world which we call perceiving.

This view explains why special perceptibles, unlike common perceptibles, lie on spectra between contrary extremes, and also why each has a dedicated sense organ. It is a prominent and well-known feature of Aristotle’s account of perception that every special perceptible lies on a kind of spectrum between extremes. For example, colours lie on a spectrum between white and black, sounds between high and low pitch, flavours and odours between sweet and bitter, temperatures between hot and cold.²⁷ Each determinate special perceptible (for instance, each particular flavour, tone, or hue) occupies a particular point on this spectrum, which can be represented as a “ratio” (*logos*) of the two extremes. For example, different colours result from mixtures of black and white in determinate ratios (*Sens.* 3, 439b16f.), while particular flavours arise from mixtures of sweet and bitter (*Sens.* 4,

²⁶ E.g. Graeser 1978, 81, 89.

²⁷ See e.g. *DA* 426a27–b3, *Sens.* 439b20f., 442a12–17, 442b17–19, 448a8–12, *Met.* H.2, 1043a11–12. Hicks (1907, 414) captures the basic idea well: “To the single province of each sense corresponds a single contrariety, a sort of scale ranging from opposite to opposite and including every possible difference.”

442a12–17).²⁸ These special perceptibles then act on the perceiver to make the perceiver like themselves. Aristotle represents this change, too, as occurring along a range delimited by opposites; hence, in *De Anima*, he speaks of the sense too as a kind of mean (*mesotétos tinos*, 424a4) and ratio (*logos tis*, 424a27–8) between contrary extremes. This idea informs his accounts of the composition of the sense organs: each must be capable of “taking on” qualities along the relevant range. This is not the place to visit much-debated questions about the precise nature (e.g. “material” or “purely spiritual”) of the change the sense organ undergoes.²⁹ Rather, my point is that the basic nature of this change, which occurs along a spectrum delimited by opposites, reflects the nature of special perceptibles and of them alone. None of this has any analogue in the perception of common perceptibles; for they do not, Aristotle insists, lie on spectra between contrary extremes.³⁰

Moreover, this view enables us to explain why, for Aristotle, perception of common perceptibles is more prone to error than perception of special perceptibles. In [B], Aristotle characterizes special perceptibles as features of the world about which one cannot be deceived. This is no passing remark: Aristotle comments often on the infallibility of the perception of special perceptibles by their correlated sense.³¹ By contrast, in *DA* III.3, he claims perceptions of common perceptibles are highly prone to error—more so even than perceptions of incidental perceptibles (428b17–25; cf. *Sens.* 4, 442b8–10). How should we explain this difference? On the one hand, I take it that a special perceptible (e.g. a colour), when acting on its corresponding sense, will unfailingly make the sense “like” itself and thereby cause an accurate perception of itself, assuming conditions are not abnormal and nothing interferes.³² The veridicality of this kind of perception is guaranteed by its passivity, given the twinned activation of the power of the special perceptible to act and the power of the sense organ to be acted upon. However, there is no such guarantee of veridicality in the perception of common perceptibles, given the manner in which they are perceived. I have proposed that

²⁸ Aristotle invokes this idea to explain why certain determinate special perceptibles are pleasant to perceive: the pleasant ones involve a harmonious mixture of the relevant contraries (e.g. *Sens.* 3, 439b31–440a3; *Sens.* 4 442a16–17).

²⁹ I present my position on this issue in Johnstone 2012. There, I defend the view that for Aristotle the sense organ takes on the determining ratio of the sensible quality, but along a different range (e.g. along the range between wet and dry, rather than sweet and bitter, in the case of smell). Hence, the sense organ undergoes an ordinary, material change (contra the spiritualist) without literally taking on the sensible quality of the object (contra the literalist).

³⁰ “All of the [special] sensibles involve contrariety; e.g. in colour white is contrary to black, and in flavour bitter is contrary to sweet. But no shape is thought to be contrary to any other shape; for to which of the polygonal figures is the spherical figure contrary?” (*Sens.* 4, 442b17–21).

³¹ *DA* III.3, 428b25–30; *DA* III.6 430b29–30; *Sens.* 4 442a9–442b13; *Met.* Γ.5, 1010b1–3.

³² I defend this view—including the qualification to the claim of strict infallibility—in Johnstone, 2015.

common perceptibles are perceived by registering changes or variations in the stimulation of the sense organs brought about by agency of special perceptibles. Presumably, discerning common perceptibles on the basis of such stimulation involves additional stages of cognitive processing, and in this way is more “active,” which introduces new opportunities for error even when conditions are ideal.³³ Moreover, the very same pattern of stimulation in the sense organ could sometimes be caused by different common perceptibles—for example, by a large and distant object or by a small and close one.³⁴ The effects wrought in the sense organs therefore do not guarantee veridicality, even when conditions are normal, as they do when one is perceiving special perceptibles.

Finally, the present view explains these various differences between special and common perceptibles while also accommodating Aristotle’s claim that common perceptibles are perceptible “in their own right.” In the previous section, I argued that for Aristotle an object is perceptible in its own right if it is capable of causing perception by affecting the sense organs insofar as it is what it is. On the present account, this is true not only of special perceptibles, but also of common perceptibles. This is because common perceptibles are causally responsible for the particular way in which the sense organ is affected. Indeed, they are responsible for these effects just insofar as they are what they are. For example, a square object and a round object will affect the eye (or the flesh of the hand) differently, due precisely to the difference in their shapes. The same goes for different sizes, or rates of movement, or the number of things there are. This is *not* true, by contrast, of incidental perceptibles. For example, my sense organs will be affected differently by the son of Diades depending on how tall he is or on whether and at what rate he is moving, but *not* insofar as he is the very person he is.³⁵ This explains why Aristotle claims special and common perceptibles are both perceptible in their own right, even though special perceptibles are perceptible primarily.

IV. Perceptible Qualities and Perceptual Realism

In the previous section, I explained several differences between special and common perceptibles by appealing to the different ways they act on perceivers. In this, the final section of this paper, I suggest, somewhat more speculatively, that these differences in how they are perceived reflect

³³ For a fuller elaboration of this idea, see Johnstone 2015, 330–32.

³⁴ I owe this latter idea to Victor Caston (unpublished).

³⁵ For instance, my sense organs would be affected in the same way by his identical twin, or by a perfect replica.

differences in how they exist in the world. I take as my starting point Aristotle's metaphysical realism. It is, I think, uncontroversial that Aristotle was a "realist" about the objects of perception in at least the following way: he believed the world is populated with bodies, which exist independent of the mind, and which really possess various qualities animals can perceive. Moreover, I take it Aristotle's theory of perception was teleological in its overall orientation: animals have perception because it is *good* for them to have it. It is good for animals to have perception because it enables them to discern features of their environments that are crucial to their survival and flourishing and—at least for non-sessile animals—to navigate their way through the world.³⁶

As noted, Aristotle thought all bodies are perceptible. Each body is (incidentally) perceptible, I have argued, because it possesses certain qualities that are perceptible in their own right. However, these perceptible qualities are of two kinds. First, there are what we might call the "geometrical" and "kinetic" features of bodies: their size, shape, motion, rest, and (for groups) number. These are Aristotle's common perceptibles. However, in self-conscious opposition to atomists such as Democritus, Aristotle insisted that common perceptibles are not the only kinds of features bodies ultimately possess.³⁷ In addition, he claimed, they possess further features in virtue of (what we might call) their underlying chemistry. Crucially, these features do not belong to bodies in virtue of the arrangement of their minute spatio-temporal parts. Rather, they belong to bodies on account of the way in which the four most basic powers operating in Aristotle's world—hot, cold, wet and dry—combine in them. Since hot, cold, wet and dry cannot be reduced to "matter in motion," Aristotle's chemistry retains an irreducibly qualitative dimension. Aristotle invokes this chemistry to explain, in particular, the distinctive qualities of different kinds of "homoiomerous" or "uniform" bodies, such as gold, iron, and stone, and also flesh, bone, and wood.³⁸ Thus, in *Meteorology* IV he sets out to explain a wide array of the dispositional properties of compound homoiomerous bodies by appealing to the way in which the wet in them is "determined" (*horizēin*) by the dry, under the

³⁶ See especially *DA* III.12–13.

³⁷ In *Sens.* 4 (442b10–13), Aristotle accuses Democritus and other similar theorists of reducing the special perceptibles to the common perceptibles.

³⁸ Aristotle lists various homoioomers in *Meteorology* IV.10, 388a13–20, distinguishing between those we mine from the earth and those that make up the parts of living things. He provides a more extensive list of the homoioomers of which animal bodies are composed in *HA* I.1, 487a487a1–10.

influence of hot and cold. The properties of these bodies extend far beyond the four basic powers, but ultimately depend on, and emerge from, the combination of these powers.³⁹

My proposal, stated simply, is this: special perceptibles can be distinguished from common perceptibles on the basis that the former, unlike the latter, belong to bodies *qua* homoiomerous. In support of this idea, I note first that Aristotle sometimes includes special perceptibles among the qualities that belong to, and differentiate, homoiomerous bodies as such:

All of these [sc. homoiomerous bodies] differ from each other, firstly by the qualities special to the senses, by which they are able to produce something (for a thing is white, fragrant, noisy, sweet, hot, or cold in virtue of its ability to make the sense something) and secondly by other more characteristic affections, in virtue of which they are said to be affected: I mean for instance the aptitude to melt or solidify or bend and so forth; for all such qualities are capacities to be affected, just like wet and dry. These are the qualities that differentiate bone, flesh, sinew, wood, bark, stone, and each of the other homoiomerous natural bodies. (*Meteor.* IV.8, 384b34–385a10)⁴⁰

The idea that special perceptibles belong to homoiomers as such, in virtue of their chemical composition, also gains support from Aristotle's accounts of the natures of the different special perceptibles. This is perhaps clearest for the tangible qualities: hot, cold, wet and dry are both themselves special perceptibles and also among the fundamental qualities of homoiomerous bodies as such (*Gen. et Corr.* II.2). It is also clear, I take it, from Aristotle's treatments of odour and flavour, which both depend on, and arise from, interactions of wet and dry (*Sens.* 4–5). Arguably, Aristotle also associated the colour of a body with its degree of transparency, and wished to explain degrees of transparency in terms of his chemistry.⁴¹ Finally, although actual "sounding" requires a blow, only certain kinds of bodies "have" sounds, that is, are capable of sounding when struck: for example, bronze, but not wool (*DA* II.8, 419b6–9). In addition, Aristotle claims the sense organs must all be

³⁹ For a recent discussion of Aristotle's views on the emergence of the complex dispositional properties of homoiomers from combinations of the four basic powers, see Lennox 2014.

⁴⁰ Cf. *Meteor.* IV.10, 388a10–13: "It is with respect to these affections and differentiae [sc. hardness, viscosity, compressibility etc.] that the homoiomerous bodies differ from each other to touch, as we have said, and moreover with respect to flavours and odours and colours" (emphasis added). Compare also *HA* I.1, 486b5–7.

⁴¹ Aristotle associates light and dark with degrees of transparency in a body in *Sens.* 3 (439b8–10, 14–19), then explains specific hues as mixtures (indeed, thorough blends, with reference to the theory of mixture in *Gen. et Corr.* I.8) of light and dark. For discussion see Sorabji 1972, and, more recently, Kalderon 2015, chapters 4 and 6.

homoiomerous, since they must be capable of becoming “like” their corresponding special perceptibles.⁴² This again suggests special perceptibles belong to homoiomerous bodies as such.

In sum, my proposal is that for Aristotle bodies have the special perceptible qualities they have—their colours, sounds, odours, flavours, temperatures, and so on—not on account of their minute geometrical and kinetic properties, but rather on account of their underlying chemical constitutions. The idea is not that these perceptible qualities are “nothing but” hot, cold, wet and dry. Rather, it is that special perceptibles are *emergent* causal powers, dependent upon, without being reducible to, the interactions of hot, cold, wet and dry. Furthermore, they are real, mind-independent features of bodies, capable of acting on perceivers to bring perception about.⁴³ Common perceptibles are no less real than special perceptibles. However, they belong to bodies in a different way: not *qua* homoiomerous, but rather due to the spatio-temporal arrangement of bodies’ surfaces and parts. Hence, for Aristotle, special and common perceptibles are distinct kinds of (mind-independent) features of bodies, and are irreducible to each other.

If this is right, it sheds light on the relationship between Aristotle’s special/common perceptibles distinction and the today more familiar distinction between primary and secondary qualities. The latter distinction, however it is developed and understood, requires distinguishing between qualities that are fundamental to bodies (i.e. the primary qualities) and qualities that in some way depend on the more fundamental kind. Typically, as in mechanistic philosophies, the fundamental qualities of bodies are envisaged in purely quantitative terms, and the secondary qualities as dependent on them. For example, one might claim bodies can stimulate colour perception when, and because, the parts of their surfaces are minutely spatially arranged in a certain way. For Aristotle, by contrast, such quantitative features do *not* adequately explain all of a body’s causal powers. In particular, they fail to explain the dispositional properties of homoioomers. Among these properties are Aristotle’s special perceptibles—or so I have maintained. The point is not simply that Aristotle rejected atomism; for, although many of the best-known advocates of the primary-secondary quality distinction have been atomists, that distinction does not depend on atomism. Rather, it is that for Aristotle there is an

⁴² *PA* II.1, 647a15–21; cf. *DA* III.12, 434b9–11, III.13, 435a11–14, *HA* I.4, 489a23–29.

⁴³ For a recent defence of the view that Aristotle regarded colours and other special perceptibles as fully present in bodies even when they are not currently being perceived, see Caston, 2018. On Aristotle’s perceptual realism, see also Broadie 1993, Broackes 1999, Marmodoro 2014, Ch. 3.

irreducibly qualitative dimension to reality, as is evident in his chemistry. Thus, it is no coincidence that Aristotle's list of common perceptibles and typical lists of primary qualities largely overlap. The reason for this overlap is not that common perceptibles can be perceived by multiple senses, and hence are more confidently held to be real, as is sometimes supposed. Rather, it is that advocates of the primary/secondary quality distinction typically take the geometrical, kinetic, and broadly quantitative features of bodies to be fundamental, whereas Aristotle thought irreducibly qualitative features of bodies are equally basic features of the world.⁴⁴

In conclusion: I have examined Aristotle's threefold division of the objects of perception into "special," "common," and "incidental." This division rests on two more basic distinctions: the first between things perceived in their own right and things perceived incidentally, and the second, within the class of things perceived in their own right, between special and common perceptibles. Regarding the first distinction, I have argued that something is perceived in its own right when it acts on the perceiver's sense organs as such, and is perceived incidentally when it coincides with something perceived in its own right. The "incidental perceptibles" are perceptible *only* incidentally—they include all particular bodies, which are perceptible entirely in virtue of the perceptible qualities they have. Regarding the second distinction, I have argued that the various differences Aristotle mentions between special and common perceptibles reflect differences in how each interacts causally with the sense organs, and also, ultimately, in how each exists in the world. Special perceptibles are perceived primarily because they alone cause the most fundamental kind of interaction characteristic of perception, which occurs along spectra between contrary extremes; common perceptibles are registered in the sense organs by means of changes or variations in the perception of special perceptibles. This is not to say that common perceptibles are "composed of" special perceptibles, or otherwise secondary in the world. Rather, special and common perceptibles are both real, causally efficacious features of bodies: the latter are the geometrical and kinetic

⁴⁴ As Polansky 2007 (251) and Lee 2011 note, Aristotle was well aware of views on which the geometrical and kinetic features of bodies are explanatorily prior to their other qualities, such as those of Democritus, and Plato in the *Timaeus*. He simply rejected such views. Interestingly, as Pasnau 2011 observes, among scholastics special perceptibles (by then referred to as "primary qualities") came to be regarded as *more* explanatorily basic than bodies' geometrical and kinetic properties. Indeed, the latter were commonly held not to be "qualities" at all, even though Aristotle classified shape as a "quality" (*poiotês*) in *Cat.* 8, 10a11–16. The mechanistic philosophers of the 17th century reversed this order of explanatory priority, and with it the denotation of the label "primary quality." Nolan (ed.) 2011—in which the essays by Lee and Pasnau appear—usefully surveys this history, with a focus on thinkers of the 17th century.

features of bodies, whereas the former are powers of bodies *qua* homoiomerous, depending ultimately on their (irreducibly qualitative) chemical constitutions.

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