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1. Introduction

The primary aim of this paper is to present Alexander's understanding of the common sense and its functions. In doing so, I will keep an eye on Alexander's agreement with or departure from Aristotle and indicate his contributions to the subject matter. The secondary aim of this paper is to discuss one particular point of departure which came to dominate later reception of Aristotle's notion of the common sense.

Alexander's most extensive discussion of the common sense occurs in his treatise *De anima*, towards the end of his account of the perceptual power of the soul (60-14-65.21).¹ Having dealt with each one of the special senses, Alexander indicates that the special senses are subject to certain limitations, and these limitations are addressed by introducing the common sense. The common sense makes appearance also in two later passages of Alexander's *De anima* (78.2-23 and 97.8-25), as well as in the *Mantissa* (119.10-19). Moreover, there are two chapters of the *Questiones* and a stretch of a few pages of Alexander's commentary on *De sensu* 7 which are informative of his views on the subject.² However, the *Questiones* and the commentary on *De sensu* do not explicitly mention the common sense and they add little or nothing of substance to what he says about it in his *De anima*.

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Alexander's conception of the common sense can be summarized as follows. First, he accepts Aristotle's view that the special senses are unified, and more precisely, that they are unified at the perceptual level. In other words, there is

¹ All references to Alexander's *De anima* and *Mantissa* are to Bruns's edition in the *Commentaria in Aristotelem graeca*. Volumes from the same series are used for other cited texts by Alexander and the later commentators on Aristotle.

² *Quaestio* III.7, 91.24-93.22 (Bruns) is on Aristotle's *De anima* III.2, 425b12-25; *Quaestio* III.9, 94.10-98.15 is on Aristotle's *De anima* III.2, 427a2-14. *In de Sensu* 163.18-168.10 (Wendland) is on Aristotle's *De sensu* 7, 449a2-20.

a *perceptual* power which unifies the special senses, and Alexander calls this power ‘the common sense’ (*koinê aisthêsis*).

Second, that the special senses are indeed unified at the perceptual level is evident from several functions which Alexander, much like Aristotle, takes to be strictly *perceptual* functions, yet functions which no special sense can achieve as such. The functions that Alexander explicitly attributes to the common sense are: (i) perceptual discrimination, (ii) perceptual awareness, and (iii) perception of the common sensibles. One could argue that here too – with regard to this list of functions – Alexander follows Aristotle, but here one needs to be careful, since Aristotle’s views as to the scope and precise functions of the common sense are notoriously controversial.³

Third, Alexander takes the common sense to be operative in the heart. Having said that, it is important to observe that this is a consequence of Alexander’s view that the *whole* perceptual power of the soul is located in the heart. Strictly speaking, seeing does not occur in the eyes, according to Alexander, but in the heart – through, or by means of, the eyes. The eyes, being made of the suitable material, are affected by coloured objects, this affection is transmitted to the heart, and only when the affection arrives to the heart it brings about an act of perception, in this case an act of seeing. So the eyes and other peripheral sense organs are not the proper seats of the special senses, but only parts of the bodily infrastructure by means of which features of the external world are presented to the perceptual power in the heart. In this framework, the perceptual power of the soul located in the heart can at the same time perceive two or more special sensibles, discriminate among them, perceive the features that accompany different types of special sensibles – these are the common sensibles, such as shape or size – and be aware of seeing or hearing.

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The outlined framework is part and parcel of Alexander’s comprehensive cardiocentrism. Alexander believes that *all* powers of the soul are located in the heart (with the exception of the intellect). One of his arguments in support of cardiocentrism (*De anima* 97.8-25) is the following. Given that *phantasia* is the activity of the soul with respect to the remnants of earlier perceptions, the power to have representations (*to phantastikon*) must be located at the same place

³ See Gregoric (2007: 13-15, 193-199).

where the common sense is, ‘and this has been shown to be in the heart’ (97.14).⁴ Moreover, where the power to have representations is, that must also be the location at which acts of assent take place (*sunkatatheseis*). And where the acts of assent take place, that must be also be the place where impulses and desires take place, which are the starting points of a chain of physical events that lead to local motion of the animal.

Another of Alexander’s arguments in support of cardiocentrism (e.g. *De anima* 78.5-23, 99.15-39; *Mantissa* 119.10-19) is that there must be a cognitive power of the soul (*to kritikon*) which is a differentiated unity in exactly the same way in which the perceptual power of the soul is a differentiated unity. The perceptual power is *differentiated* insofar as we have the special senses operating on their respective special sensibles, and it is a *unity* insofar as we have the common sense which discriminates different special sensibles. Likewise, the cognitive power is *differentiated* insofar as we have perception and other forms of cognition (*phantasia*, assent, belief, reasoning, understanding), and it is a *unity* insofar as we have something which discriminates between the reports of these different forms of cognition. And this cognitive power of the soul must be in the heart.

Regarding this comprehensive cardiocentric framework, one naturally wonders if Alexander follows Aristotle here too, given Aristotle’s global hylomorphic thesis from *De anima* II, namely that the soul is the form of the *whole* living body. I believe that Alexander does in fact follow Aristotle very closely, for I am confident that Aristotle holds the same cardiocentric view – most strongly expressed in Chapter 10 of *De motu animalium* – but elaborating on this claim would take us too far from the present topic.⁵

Following this three-point summary of Alexander’s understanding of the common sense, I wish to draw the reader’s attention to two further points. First, Alexander does not connect the common sense with *phantasia*, but confines it to the level of perception. I emphasize this because the remark in Aristotle’s *De memoria* 1, 450a10-11 (*phantasma* is an affection of the common sense’) can be, and often has been, taken to the effect that *phantasia* is one of the functions of the common

⁴ All translations from Greek are mine, unless indicated otherwise.

⁵ See Corcilius&Gregoric (2013) and Gregoric (forthcoming).

sense.⁶ Alexander ignores that, and quite rightly so, I think. For Alexander, the common sense is a higher-order strictly *perceptual* capacity which is directed at operations of the lower-order perceptual capacities, that is the special senses.

Second, Alexander is reasonably consistent in using the term ‘common sense’ solely for the higher-order perceptual capacity, as contrasted with the special senses and their operations.⁷ In that respect Alexander contributed to clearing up the terminological mess that Aristotle had made. Namely, Aristotle used the phrase ‘common sense’ in the relevant manner only four times, at *De memoria* 1, 450a10, *De partibus animalium* IV.10, 686a31, *De anima* III.1, 425a27, and an incomplete occurrence at *De anima* III.7, 431b5. It seems that in the first two of these occurrences he used it with reference to the perceptual part of the soul taken most broadly, inclusive of *phantasia*. So I am inclined to think that it was due to Alexander’s consistent and specialized use of the term ‘common sense’ that it became the technical term for one internal sense, distinct from *phantasia* and the other internal senses, in the Arabic and Latin scholastic tradition.⁸

Let me now turn to the three functions which Alexander assigns to the common sense, starting with perceptual discrimination.

2. Functions of the common sense: Perceptual discrimination

Alexander remarks that each special sense not only apprehends the underlying type of special sensible, but also ‘discriminates their differences’ (60.16-17). I understand this to mean that in an act of perception, a special sensible is picked out from its immediate phenomenal environment. Next, Alexander observes that we do not perceive and discriminate only the differences within one type of special sensible, but across two or more types of special sensibles, and he wants

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⁶ See Gregoric (2007: 14-15, 99-111).

⁷ There are only two occurrences in a latter passage of *De anima* (78.10 and 12) where Alexander seems to use the expression *koinê aisthêsis* with reference to the perceptual power of the soul as a whole: at 78.10 he says that perception as such (as contrasted with seeing, hearing etc.) is the work of the common sense, and at 78.12 he says that we discriminate each type of special sensible object through the respective sense-organ, but we discriminate special sensibles in general with the common sense.

⁸ For a helpful overview of the notion of internal senses in the Arabic and Latin tradition, see di Martino (2013).

to explore what it is that achieves perceptual discrimination of heterogeneous special sensibles.

Whatever it is that achieves perceptual discrimination of heterogeneous special sensibles, it has to satisfy two conditions (which were formulated already by Aristotle in *De anima* III.2): (i) the discriminating thing has to be one and undivided, and (ii) it has to do the job at one and undivided time. The conjunction of these two conditions generates problems, because there seems, *prima facie* at least, to be no one and undivided thing that can simultaneously apprehend two heterogeneous qualities, such as sweet and white, and even worse, no one and undivided thing that can simultaneously apprehend two *homogeneous* qualities, among which two contraries – such as white and black – are the toughest case. This is the toughest case, I take it, because it appears to violate the intuitive principle of excluded contraries, the principle on which Plato's well-known tripartition of the soul in *Republic* was based.⁹

In any case, the most acute problem with perceptual discrimination, in Alexander's words, is this: 'How can vision grasp the differences of white and black, if it must apprehend both of them at the same time and if the apprehension occurs through becoming *like* the sensibles? It is impossible for the same thing to become *like* white and *like* black at the same time' (61.27-30).

Alexander's solution to the problem of perceptual discrimination – both of heterogeneous and homogeneous special sensibles – comes in two parts. The relation between these two parts is not at all obvious. In fact, some interpreters have taken them to be two distinct solutions.¹⁰ I will argue that the two parts complement each other, as two steps towards an adequate solution to the problem.¹¹

The first part (61.30-63.5) has no direct parallel in Aristotle, as some commentators have observed but failed to explain.¹² This part makes the claim that becom-

⁹ 'It is obvious that the same thing will never do or suffer opposites in the same respect in relation to the same thing and at the same time' (Plato, *Republic* IV, 436b8-9; translated by P. Shorey).

¹⁰ Bergeron&Defour (2008: 308).

¹¹ So Accattino&Donini (1996: 228). They say very little on the relation between these two steps, however.

¹² Accattino&Donini (1996: 228); Bergeron and Defour (2008: 308).

ing *like* a sensible in an act of perception is not a case of material change, which exempts it from the principle of excluded contraries. Something can perceive and discriminate two contrary sensibles – or indeed any other combination of homogeneous sensibles, or even any combination of heterogeneous sensibles – because this does not involve any material change, but a different type of change.¹³ Alexander offers four pieces of evidence in support of the thesis that a different type of change is involved in perception – the ‘immateriality thesis’, as I shall call it. First, the sense of vision (*opsis*) does not become white and black when it perceives them. Second, air which is lit does not become white and black when it mediates these colours to the perceivers. Third, mirrors and water surfaces that reflect white and black objects do not themselves become white and black. Fourth, unlike mirrors and water surfaces that reflect white and black objects only as long as they are exposed to them, we are aware of white and black even after white and black objects are gone, since perception of them leaves traces due to *phantasia*; the fact that a white or black object does not need to be present and causally active for me to be aware of white or black, I take it, is meant to show that this is not a case of standard material change.¹⁴

If perception does not involve material change, then the perceptual capacity which apprehends all types of special sensibles – though not all of them through the same sense-organs – will be able to discriminate them at one and the same time. And that perceptual capacity is the common sense. This clearly constitutes an important step towards the solution of the problem of perceptual discrimination of heterogeneous sensibles. But what about homogeneous sensibles? Presumably, eyes are not affected by white and black materially either, so this part of the solution applies to the case of perceptual discrimination of homogeneous sensibles, too. However, what this part of Alexander’s solution leaves undecided is whether the perceptual capacity which discriminates white and black in the non-material way is vision or the common sense. That is why the second part of Alexander’s solution is needed.

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¹³ Cf. Aristotle, *De anima* II.5 and the contemporary discussion between ‘spiritualism’ and ‘literalism’ in Aristotle’s theory of perception; a helpful summary of the discussion can be found in Caston (2004).

¹⁴ I read lines 62.22-63.5 as the fourth piece of evidence in support of the thesis that a different change is involved in perception, so I would suggest that these lines be transposed to line 16, before the sentence that starts with *ei dê kai*.

This part (63.6-65.2) consists in showing that the perceptual capacity which apprehends all types of special sensibles – the common sense – is a sort of thing which can be both one and many at the same time. Insofar as it is one, it satisfies the two conditions for perceptual discrimination, and insofar as it is many, it conforms to the principle of excluded contraries. How does that work?

Very briefly, Alexander uses the same sort of trick that Aristotle used at the end of *De anima* III.2: he proposes an analogy with a geometrical point. However, whereas Aristotle used the analogy with a point bisecting a line, Alexander innovates: he compares the common sense to the centre of a circle in which different radii meet. Alexander's idea is this: insofar as the centre is the end-point of different radii, it is many; and insofar as the end-points of different radii coincide in one and the same point, it is one. 'We should take the common sense to be one and many in the same way,' he says at 63.12-13.

This analogy is further elaborated by Alexander and it deserves a separate discussion. This I leave for Section 5 below.

3. Functions of the common sense: Awareness of perception

Like Aristotle, Alexander has no doubt that we are aware of ourselves seeing and hearing, and that this awareness must be of a perceptual kind. However, Aristotle seems to have two different accounts as to what it is that enables us to perceive that we are seeing and hearing. One account is found in *De anima* III.2 (425b12-25), where Aristotle suggests that it is the special senses that supply us with perceptual awareness. The upshot of Aristotle's argument in *De anima* III.2 is that we perceive that we see by the sense of vision, for 'to perceive by the sense of vision is not a single thing' (*ouch hen to tēi opsei aisthanesthai*, 425b20). The other account is found in *De somno et vigilia* 2, where Aristotle says that 'certainly it is not by vision that one sees that one sees' but by some 'common power which accompanies all the special senses' (*DSV* 2, 455a16-17). This 'common power' (*koinē dunamis*) that accompanies all the special senses is standardly identified with the common sense.¹⁵

¹⁵ Of course, there are various ways of reconciling these two accounts; cf. Gregoric (2007: 174-192), Johansen (2012: 195-198).

Alexander is perfectly aware of both accounts in Aristotle. He expounds Aristotle's *De anima* account at length in his *Quaestiones* III.7. Interestingly, in the course of his exemplary exposition, Alexander does not even hint at the second account from Aristotle's *De somno*, which Alexander himself advocates in his *De anima* and the *Mantissa*. Likewise, in his *De anima* and the *Mantissa* Alexander does not mention the alternative account he expounded in *Questiones* III.7. Presumably, this is because in the *Quaestiones* Alexander takes his job to be only to elucidate Aristotle's words as best as he can, and in his own *De anima* Alexander's task is to present the Peripatetic doctrine of the soul in its most robust form, admittedly aiming to demonstrate its superiority over the rival Stoic doctrine.

In any case, it is interesting that Alexander in *De anima* opts for the second account regarding the source of perceptual awareness, that is the account from Aristotle's *De somno*. Alexander says in the relevant passage of his *De anima* that perceptual awareness is the work of the 'primary, chief and the so-called "common" sense' (65.8-10). That this is indeed Alexander's considered view is clear from two further sources, one direct and the other indirect. The direct source is a passage from the *Mantissa* (119.13-15): 'That the common sense is distinct from the special senses is clear from the fact that seeing is perceptible, but not visible.' The indirect source is a later report in Ps.Philoponus' commentary on Aristotle's *De anima*, who compares four different views as to what enables us to be aware of our perceptions. In this report, Aristotle's view from *De anima* III.2, according to which it is the special senses that are aware of their own operations (Philoponus, *In de An.* 463.29-32 Hayduck), is explicitly contrasted with Alexander's view, according to which it is the common sense that supplies awareness of the operations of the special senses: 'Alexander in his *Commentary* makes the five senses aware of their underlying sense objects, whereas he makes the common sense aware of both the underlying objects and their activities' (Philoponus, *In de An.* 464.20-23 Hayduck).¹⁶

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This is an interesting finding because it shows that, although Alexander's *De anima* closely follows Aristotle's *De anima* in plan and doctrine, Alexander is sufficiently independent to depart from the particular ideas in Aristotle's *De anima* in favour of ideas stated in Aristotle's other works that Alexander finds more

¹⁶ Alexander's commentary on Aristotle's *De anima* is lost, but the view described in this passage is found in Alexander's *De anima* 65.2-10.

congenial. And, again, I would argue that it is due to Alexander's influence on posterity that the common sense came to be regarded as the source of perceptual awareness in the later Arabic and scholastic tradition.

4. Functions of the common sense: Perception of the common sensibles

The last function Alexander attributes to the common sense is perception of the common sensibles – features such as shapes and sizes that are accessible to more than one special sense. No doubt Alexander's attribution of this function is inspired by Aristotle's *De anima* III.1, 425a14-28, where he says that 'for the common sensibles we now have *aisthêsin koinên*'.

Here I would like to make a digression. I have argued elsewhere that the quoted passage from Aristotle's *De anima* III.1 should not be interpreted to the effect that the common sensibles are perceived by the common sense. Rather, it should be interpreted in a more nuanced way, as stating that the special senses have a shared sensitivity to the common sensibles.¹⁷ Of course, this shared sensitivity to the common sensibles is due to the presence of the common sense which unifies the special senses, but that is not equivalent to saying that we perceive the common sensibles by the common sense. Surely we would all agree that the red colour of a tomato is seen with the sense of vision, but would anyone seriously claim that the round shape of the tomato is not really seen, but perceived by the common sense? I do not think so. Aristotle himself says that we *see* shapes, sizes, motions etc.¹⁸ To be sure, we would not be able to see them, had our vision not been unified with the other senses by the common sense; but granted that our vision is thus unified, and given that we have seen and felt many things in the past and compared the reports of our senses, we are now as a matter of fact able to *see* the common sensibles.

Let me put the same point differently. Instead of relegating the perception of the common sensibles to the common sense, I take Aristotle to be expanding the special senses, so that in addition to perceiving their underlying special sensibles, they also perceive the common sensibles. I have already quoted Aristotle's

¹⁷ Gregoric (2007: 69-82).

¹⁸ See, e.g. *De anima* II.6, 418a19-20; III.1, 425b9-11; *De sensu* 1, 437a5-9.

remark that ‘to perceive by vision is not a single thing’ (*De anima* III.1, 425b20-22), with the example of vision discriminating not only colours, but also light and darkness. So a special sense, on Aristotle’s view, cannot be reduced to its narrow function specified in its definition. The definition accurately captures the essence of a special sense considered in full theoretical abstraction, independently of the perceptual system in which every token of every special sense in fact happens to be embedded. However, since no special sense ever occurs unembedded, I would claim that, in addition to its innate or essential sensitivity to one type of special sensible, each special sense acquires sensitivity to the common sensibles as the animal experiences the world. This acquired sensitivity, of course, presupposes integration of the special senses and functioning of the common sense in the perceiver’s early career.¹⁹ With these conditions fulfilled, the common sensibles are perceived by the special senses; we can see (and feel) shapes and sizes.

In contrast to my interpretation of Aristotle, Alexander says very clearly that the common sensibles are perceived by the common sense. His argument at 65.17-19 is that the common sensibles are not visible, because they do not accompany only colours but also other types of special sensibles; they are not tangible, because they do not accompany only tactile qualities but also other types of special sensibles, etc. This argument presupposes that whatever is visible must be a colour or something that accompanies only colours, and it fails to do justice to the very deep intuition that the common sensibles are indeed *visible* as well as *tangible*, and so on.

I suppose that Alexander’s ascription of perception of the common sensibles to the common sense has influenced generations of interpreters who follow him in taking this insufficiently nuanced view. However, there are three places in which Alexander seems to contradict himself. Twice in his commentary on *De sensu* (84.20 and 85.14) he says that it is *vision* that apprehends shape and size.

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¹⁹ Of course, not every special sense is sensitive to all types of common sensibles, e.g. we cannot perceive shapes by hearing (Aristotle’s claim in *De anima* II.6, 418a18-19 must be a careless overstatement). Also, not every special sense is equally sensitive to any given type of common sensible, e.g. we are better at perceiving motion by vision than by hearing. I would also argue that the special senses improve their sensitivity to the common sensibles with experience, e.g. our vision gets better or more reliable at perceiving sizes and shapes of distant things.

More importantly, there is a passage in his *De anima* which comes some pages after his account of the common sense, where he says: ‘Vision perceives a colour at the same time as it gains perception of size, shape, and motion or rest that come together with the colour’ (83.19-21). Apparently, Alexander also felt the tug of the intuition that the common sensibles are genuinely visible, tangible, and so forth. In any case, ascribing the perception of the common sensibles to the common sense seems somewhat more problematic or counter-intuitive than ascribing the first two functions to it, namely perceptual discrimination and perceptual awareness.

It is interesting to observe, before moving on to the next section, that Alexander adds ‘distance’ (*apostêma*, 65.14) to the list of the common sensibles, without any indication that in doing so he goes beyond Aristotle. Adding ‘distance’ to the list of common sensibles does not seem to be Alexander’s innovation, however. Already Theophrastus mentions *diastêma* twice in his *De sensu*, along with size and motion (36.5 Wimmer = 509.21 Diels; 54.10 Wimmer = 514.32 Diels), so the inclusion of distance in the list of the common sensibles was probably a part of the Peripatetic lore long before Alexander.²⁰

5. The analogy

I have pointed out that Alexander’s solution to the problem of perceptual discrimination proceeds in two parts, or rather in two steps. In the first step (62.3-63.5) he appeals to the immateriality of perception, whereas in the second step (63.6-65.2) he introduces the analogy with the centre of a circle in which different radii meet (see Figure 1).

I have argued earlier that the first step leaves it undecided whether perceptual discrimination is done by the special senses or by the common sense, so the second step is needed to establish that it is the common sense. In this section I will argue that the first step is also necessary to make the second one work.

²⁰ In the *Mantissa* (146.30-31), Alexander distinguishes between *apostêma*, which refers to the distance between the perceiver and the object, and *diastêma*, which refers to the distance between two perceived objects. However, Galen was not aware of that distinction when he criticized Aristotle for failing to explain ‘how we recognize the position or size or distance of each perceived object’ (*De placitis Hippocratis et Platonis* VII.7, 470.17-18 De Lacey); see Ierodiakonou (1999).

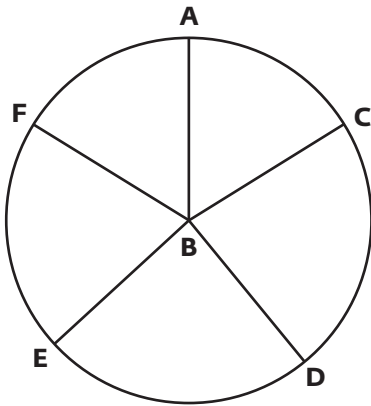


Figure 1

Let us look at the second step. Alexander introduces the analogy of the common sense with the centre of the circle (63.6-13), and then applies it first to the case of perceptual discrimination of heterogeneous sensibles (63.13-64.4), and then to the case of perceptual discrimination of homogeneous sensibles (64.4-65.2).

In the first application, Alexander argues as follows. Insofar as the common sense is the end-point of different affections produced by the special sensibles in the peripheral sense organs, the common sense is many; insofar as it is an immaterial (*asômatos*, 63.18) power of the entire central sense organ and each part of it, the common sense is one and indivisible. He unpacks this still further (63.19-28): insofar as the common sense is many, it simultaneously perceives different special sensibles, because it is the power and the end-point, as it were, of each sense organ; insofar as the end-points of all sense organs coincide in one and the same thing, namely in the common sense housed in the heart, it discriminates the differences of the perceived special sensibles at one and indivisible time. The upshot of this is that the problem of perceptual discrimination of heterogeneous sensibles is solved because the common sense is both one and many.

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The analogy is applied in much the same way to the case of perceptual discrimination of homogeneous sensibles. The peripheral sense organ, Alexander observes, is affected at different parts by different homogeneous special sensibles. So, in the toughest case of two contrary sensibles, such as white and black,

white affects one part of the eye and black affects another part, so that the principle of excluded contraries is respected: it is not one and the same thing *in the same part* that is both white and black at the same time, but in two different parts. When these two contrary affections reach the central sense organ – and presumably they reach two neighbouring (*paraplêsiôs*, 64.8-9) parts of the central sense organ – they are simultaneously perceived and discriminated against one another by one and the same perceptual power which is the form of the whole central sense organ, i.e. by the common sense in the heart.

Insofar as the common sense is one, then, it satisfies the two conditions for perceptual discrimination (that the discriminating thing be one, and that the time of discrimination be one), and insofar as it is many, it conforms to the principle of excluded contraries. That is, insofar as it is many, the common sense simultaneously perceives white and black – white on account of being the immaterial power which informs that part of the central sense organ which is affected by the white colour of an external object, and black on account of being the immaterial power which informs the neighbouring part of the central sense organ which is affected by the black colour of the external object.

Observe the stress laid on the immateriality of the common sense: it is because the common sense is *immaterial* – namely, it is the form of the whole central sense organ – that it can be affected by any number of sensible qualities that arrive from the peripheral sense organs to different parts of the central sense organ. Affections arriving from the eyes and from the ears will arrive at different regions of the heart, whereas affections of white and black from two neighbouring parts of the eye will arrive at two neighbouring parts of the same region of the heart; either way, the common sense, being one and the same form of the whole central organ, registers them all at once. As we have seen, the immateriality thesis was introduced in the first step of Alexander's solution, and now it is clear that the analogy introduced in the second step could not possibly work without it.

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In other words, had Alexander not introduced the immateriality thesis, his analogy would be badly spoilt. Saying that affections from different peripheral sense organs (or from different parts of the same peripheral sense organ) arrive at different parts of the central sense organ would be analogous to different radii of a circle that terminate in *different* points around the centre, as shown in Figure 2. In this picture nothing corresponds to a single thing that does the discrimi-

nating job! So the immateriality thesis in step one was absolutely necessary for Alexander's modification of Aristotle's original analogy with a point bisecting a line.

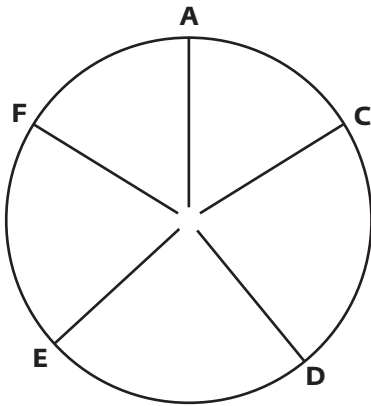


Figure 2

How did Aristotle arrive at his original analogy? He wondered how one and the same thing can simultaneously perceive and discriminate two special sensibles. For two heterogeneous sensibles, like white and sweet, he had a solution. The thing which simultaneously perceives and discriminates two heterogeneous sensibles is much like a physical object which instantiates different properties at the same time – like an apple which is fragrant, red and cold at the same time. There is no problem for one thing to be at the same time like a colour and like a flavor.²¹ However, this solution did not work for homogeneous sensibles, especially not for the contraries in each type of special sensible; no one thing can at the same time be like white and like black.²² So Aristotle had to find another solution. And he found it in the analogy with a point bisecting a line, put forth at the end of *De anima* III.2, 427a9-14 and repeated at III.7, 431a20-b1 (see Figure 3). The idea of the analogy is that one and the same point *can* be two contraries at the same time. As Figure 3 shows, point B is the *end*-point of section AB and the *starting*-point of section BC. Likewise, a sense can simultaneously perceive

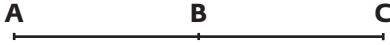
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²¹ Aristotle, *De sensu* 7, 449a2-20; cf. *De anima* III.2, 426b29-427a5.

²² *De anima* III.2, 426b29-427a5-9.

two contrary qualities, say white and black, and discriminate them at one and indivisible time.

Figure 3



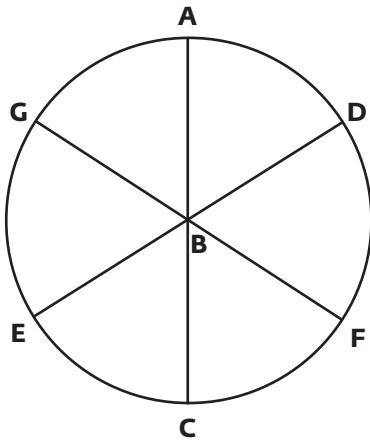
This analogy, I take it, was only meant to show that it is *possible* that there be something which is one and two contraries at the same time, since being a starting-point and being an end-point are contraries. But this analogy was not meant to be unpacked as a suggestion as to *how* the sense achieves this unity and contrariety at the same time. In other words, Aristotle's analogy with a point bisecting a line does not contain anything approaching an explanation of the operation of the sense when it simultaneously perceives and discriminates two contrary sensibles. Its sole function was to show that it is not preposterous to think that a sense *could* do such a thing, not to explain *how* it does that.

One might say that the weakness of Alexander's analogy with the centre of a circle in which different radii meet is that it fails to show how a single thing can instantiate contrariety at the same time, since there is no contrariety involved in point B being the end-point of radius AB, the end-point of radius CB, etc. This analogy can explain only perceptual discrimination of heterogeneous sensibles, where different qualities like white and sweet are not mutually contrary.

There are two ways to reply to this objection. First, one can argue that this is a weakness of Alexander's analogy only if one judges it from the background of Aristotle's reasoning at the end of *De anima* III.2, where the immateriality thesis is not utilized. Alexander's analogy, as we have seen, is built on different grounds than Aristotle's analogy. Second, one might propose to amend Alexander's analogy by drawing different *diameters* passing through point B (Figure 4), which then accommodates Aristotle's reasoning. The diameter AC is bisected by point B at the centre, which is at the same time the starting-point of the radius BC and the end-point of the radius AB.²³

²³ I would like to note a minor inconvenience with the proposed amendment of Alexander's analogy (Figure 4). The contraries, which affect the same sense organ, are represented in

Figure 4



Returning to Alexander's original analogy, its comparative advantage over Aristotle's analogy is that it encapsulates a *model* of how the whole thing works. Its purpose is not only to show that something is possible, as with Aristotle's analogy with a point bisecting a line, but to explain *how* perceptual discrimination takes place. The special sensibles affect the peripheral sense organs, and these affections reach the central sense organ. Because there is a single perceptual power informing the whole central sense organ, the affections arriving to the central sense organ from different peripheral sense organs are all perceived at the same time and discriminated from one another. The analogy works almost as a diagram of a human being with the periphery and the heart as a central organ! It is because of the intuitive power of Alexander's analogy, I suggest, that it became the standard interpretation of Aristotle's analogy in *De anima* III.2, used by Plotinus (IV.7.6.11-14), and pretty much all the later commentators on Aristotle's *De anima*, e.g. Themistius (*In de Anima* 86.18-25), Ps.Simplicius (*In de Anima* 196.31, 200.26, 270.27-29), Ps.Philoponus (*In de Anima* 481.7-11), Sophonias (*In de Anima* 114.24-28).

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To conclude this section, if we look at the two steps of Alexander's solution to the problem of perceptual discrimination – the idea that perception and dis-

the amended analogy by two points on *opposite* sides of the circumference, e.g. A and C or D and E. That spoils the analogy as a representation of the cardiocentric model, which requires each radius to represent one peripheral sense organ linked to the central organ located (very roughly) in the middle of the body.

crimination are non-material, and the idea that the common sense is like the centre of a circle in which different radii converge – we see that they rely on one another. The first step supplies to the second the crucial premise of immateriality, which allows the common sense to perceive simultaneously and discriminate not only heterogeneous sensibles, such as white and sweet, but also homogeneous sensibles, such as white and black, much like air allows for the simultaneous mediation of white and black in the case of a white Caucasian and a black African staring at each other. The second step in turn completes the first one with the crucial specification that it is one and the same perceptual power located in the central sense organ that perceives and discriminates all special sensibles, including the contraries such as white and black.

6. Conclusion

I have argued that Alexander, while being generally faithful to Aristotle regarding the common sense, made four lasting contributions to this topic. First, he restricted the term ‘common sense’ (*koinê aisthêsis*) to the unified perceptual power of the soul which excludes *phantasia*. This blazed a trail for later theories of the internal senses in which the common sense figures as a non-rational cognitive capacity distinct from *phantasia*, memory, and whatever further capacity various Arabic and Latin philosophers may have postulated. Second, Alexander’s claim that we perceive ourselves seeing and hearing by means of the common sense, rather than by the special senses, influenced (correctly, in my opinion) later readings of Aristotle’s passages dealing with awareness of perception, giving preference to Aristotle’s account in *De somno et vigilia* 2, 455a16-17, over his more widely read account in *De anima* III.2, 425b12-25. Third, Alexander’s statement that the common sensibles are perceived by the common sense, rather than by the special senses, made its mark (incorrectly, in my opinion) on later readings of Aristotle’s passages dealing with the common sensibles, most notably of *De anima* III.1, 425a14-425b11. Fourth, Alexander’s analogy of the common sense with the centre of a circle in which different radii meet, though inspired by Aristotle’s analogy with a point bisecting a line in *De anima* III.2, 427a9-14, was a brilliant innovation that intuitively captured the Peripatetic cardiocentric model, leaving a deep impression on later students of Aristotle. That analogy, however, required the immateriality thesis which Alexander supplied in the first part of his solution to the problem of perceptual discrimination, the part that has no direct parallel in Aristotle.

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