

# AN ARISTOTELIAN PUZZLE ABOUT TOUCH

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## THE TACTILE “BLIND SPOT”

**Popular wisdom.** Greek theorists prior to Aristotle were divided over whether sense perception happens on account of the *similarity* of sense and sensible object (“by like”, τῷ ὁμοίῳ) or rather their *difference* (“by unlike”, τῷ ἐναντίῳ). In support of the latter view, some theorists pointed to a familiar *endoxon*, or piece of popular wisdom:

**Text 1** Theophrastus, *Sens.* 2.1–5

οἱ δὲ τὴν αἴσθησιν ὑπολαμβάνοντες ἐν ἀλλοιώσει γίνεσθαι καὶ τὸ μὲν ὅμοιον ἀπαθὲς ὑπὸ τοῦ ὁμοίου, τὸ δ' ἐναντίον παθητικόν, τούτῳ προσέθεσαν τὴν γνώμην· ἐπιμαρτυρεῖν δὲ οἴονται καὶ τὸ περὶ τὴν ἀφὴν συμβαῖνον· τὸ γὰρ ὁμοίως τῇ σαρκὶ θερμὸν ἢ ψυχρὸν οὐ ποιεῖν αἴσθησιν.

The other group [*sc.*, the “by unlike” theorists] supposes that perception comes about by alteration and that like is unaffected by like, whereas the unlike is susceptible to affection, and they align their theory with this [hypothesis]. They also take as evidence what happens in the case of touch, for anything that is equally as hot or as cold as flesh does not produce perception.

**Aristotle on the tactile “blind spot”.** Aristotle defends a qualified version of the “by unlike” theory of perception (*DA* 2.5, 416b32–417a2, *cf.* *GC* 1.7), and in a well-known passage from *De Anima*’s chapter on touch he *seems* also to appeal to the familiar tactile “blind spot”:

**Text 2** Aristotle, *DA* 2.11, 423b31–424a5

τὸ γὰρ αἰσθάνεσθαι πάσχειν τι ἐστίν· ὥστε τὸ ποιοῦν, οἷον αὐτὸ ἐνεργεία, τοιοῦτον ἐκεῖνο ποιεῖ, δυνάμει ὄν. διὸ τοῦ ὁμοίως θερμοῦ καὶ ψυχροῦ, ἢ σκληροῦ καὶ μαλακοῦ, οὐκ αἰσθανόμεθα, ἀλλὰ τῶν ὑπερβολῶν, ὡς τῆς αἰσθήσεως οἷον μεσότητός τινος οὔσης τῆς ἐν τοῖς αἰσθητοῖς ἐναντιώσεως

For perceiving is a way of being affected; hence that which acts makes that [part], which is potentially [such as it is], actually such as it is. For this reason we do not perceive anything that is equally hot and cold or hard and soft, but rather the excesses, given that the sense is like a kind of mean state of the contrariety present in sense-objects.

**The problem.** Taken literally, Aristotle’s tactile “blind spot” is *not* logically equivalent to Theophrastus’ *endoxon*:

1. Aristotle makes no explicit comparison with the organ of touch.
2. The connectives are flipped: “hot *or* cold” (Theophrastus) vs. “hot *and* cold or hard *and* soft” (Aristotle).

In sum: according to Theophrastus’ *endoxon* we do not perceive what is *as hot* or *as cold as our flesh*, but according to Aristotle we do not perceive what is *in equal measure hot and cold* (whatever that means).

**The standard reading.** Taken literally, Aristotle’s claim is difficult to understand. Perhaps for this reason, commentators tend overwhelmingly to interpret Aristotle’s “blind spot” as equivalent to, or even referencing, Theophrastus’ *endoxon* (cf. Burnyeat 1995, Grasso 2019), and to translate Text 2 in a way that obscures their discrepancies:<sup>1</sup>

Miller 2018 “That is why we do not perceive that which is hot or cold, hard or soft, to the same degree as the organ is. . .”

Reeve 2017 “. . . what is equally as hot, cold, hard, or soft [as the part]. . .” (brackets in the original)

Shields 2016 “. . . what is hot and cold, or hard and soft, in measures equal to ourselves. . .”

**Thesis.** The standard reading is incorrect, and importantly so. (1) Not only can literal sense be made of Aristotle’s “blind spot”, (2) understood in its context in *De Anima* 2.11, it articulates a doctrine central to Aristotle’s view of sense perception and its value for animal life:

1. Aristotle’s “blind spot” is a consequence of the fact that touch (and each of the senses) is a “**mean state**” (μεσότης) of the range of qualities it uniquely or “specially” perceives.
2. In *De Anima* 2.11, Aristotle argues that, as a mean state, each sense therefore “**discriminates**” (κρίνει) the qualities it specially perceives. Surprisingly, his argument here parallels a line of reasoning familiar from the *Ethics* (cf. EN 2.5–9, EE 2.3–5). To preview:

**DOCTRINE OF THE ETHICAL MEAN**

As means between extremes states of excess and deficiency, virtues of character (courage, temperance, etc.) dispose agents to identify and choose the affective and practical responses that are in fact neither too much nor too little in a given practical situation.

**DOCTRINE OF THE SENSORY MEAN**

As a mean between the extremes of the quality scale(s) it specially perceives, each sense (touch, sight, etc.) enables its possessor to “discriminate” how bodies qualified within that scale actually exceed or fall short of that mean—in short, to become aware of real, perceiver-independent features of sensible bodies.

**Against the standard reading.** Going forward, I’ll assume that any defensible interpretation that can make literal sense of Aristotle’s claim that we do not perceive “what is equally hot or cold or hard and soft” is, for that reason, preferable to the standard reading. My aim will therefore be to show that a careful reading of the context of Aristotle’s claim in *De Anima* 2.11 (see **Appendix**) bears out just such an interpretation.

<sup>1</sup>See also Wallace 1882 (“. . . that which is hot or cold, or hard or soft to the same degree as we ourselves are. . .”), Hicks 1907 (“. . . what is just as hot or cold, hard or soft, as we are. . .”), Siwek 1965 (“. . . non sentimus, quod est in eodem gradu calidum et frigidum, durum et molle [ac sensorium]. . .”), Jannone and Barbotin 1966 (“. . . quand un corps est chaud, froid, dur, ou mou, au même degré que l’organe. . .”), Tricot 1995 (“. . . à une degré égal <à celui de l’organe>, chaud ou froid, dur ou mou. . .”).

PART I: A PUZZLE ABOUT TOUCH

**Initial observation.** Unlike Theophrastus' *endoxon*, Aristotle's appeal to the tactile "blind spot" is *not* presented as evidence of the "by unlike" theory of perception, but rather in response to a dilemma concerning the material composition of the organ of touch.

**Text 3** [I]<sup>2</sup> DA 2.11, 423b27–424a2

ἀπταὶ μὲν οὖν εἰσὶν αἱ διαφοραὶ τοῦ σώματος ἧ  
σῶμα· λέγω δὲ διαφορὰς αἱ τὰ στοιχεῖα διορίζουσι,  
θερμὸν ψυχρόν, ξηρὸν ὑγρόν, περὶ ὧν εἰρήκαμεν πρό-  
τερον ἐν τοῖς περὶ τῶν στοιχείων. τὸ δὲ αἰσθητήριον  
αὐτῶν τὸ ἀπτικόν, καὶ ἐν ᾧ ἡ καλουμένη ἀφή ὑπάρ-  
χει αἰσθησις πρώτη, τὸ δυνάμει τοιοῦτόν ἐστι μό-  
ριον· τὸ γὰρ αἰσθάνεσθαι πάσχειν τι ἐστίν· ὥστε τὸ  
ποιοῦν, οἶον αὐτὸ ἐνεργεία, τοιοῦτον ἐκείνο ποιεῖ, δυ-  
νάμει ὄν.

Now, the differences of body *qua* body are tangi-  
bles. (I call *differences* those [qualities] that deter-  
mine the elements—hot and cold, dry and wet—  
which we spoke about earlier in our remarks on the  
elements.) But the organ of touch—the sense organ  
of these [qualities] and that in which the so-called  
sense of touch is present primarily—is the part that  
is in potentiality such [as these qualities are in actu-  
ally]. For perceiving is a way of being affected; hence  
that which acts makes that [part], which is poten-  
tially [such as it is], actually such as it is.

The dilemma in brief: how can the organ of touch both (1) be a body and (2) meet the conditions for being receptive to the differences of bodies as such?

**First Horn** As a body, the organ of touch must be *either* hot or cold, *either* wet or dry, *either* hard or soft, etc.

**Second Horn** But as the organ of touch, it must be *neither* hot nor cold, *neither* wet nor dry, *neither* hard nor soft, etc.

**The First Horn, roughly.** For Aristotle, all sublunary bodies are composed of the elements earth, air, fire, and water, each of which is essentially determined by a pair of tangible qualities—e.g., fire is dry and hot, water is wet and cold. Hence, as elemental composites, all bodies must fall *somewhere* on the scales between hot and cold, wet and dry.

**The Second Horn, in detail.** Aristotle's synthesis of the "by like" and "by unlike" theorists:

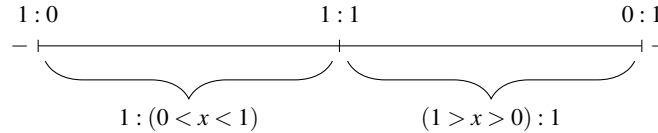
- As the "by unlike" theorists claim, perception is a kind of "affection" (πάθησις), or "alteration" (ἀλλοίωσις), or "assimilation" (ὁμοίωσις), so the perceiving subject must be **actually** *none* of the qualities it can perceive prior to perceptual affection: "what is capable of receiving color is colorless, and what is capable of receiving sound is soundless" (DA 2.7, 418b26–27).
- But, as the "by like" theorists understood, in order for the perceiving subject to be **potentially** *all* of the qualities it can perceive, it must be sufficiently *like* them: "body is naturally affected by body, flavor by flavor, color by color, and generally what is alike in genus by what is alike in genus" (GC 1.7, 323b33–324a1).

Put differently: prior to perceptual affection, the perceiving subject must *the same in genus* but *different in species* from all of the qualities it perceives.

<sup>2</sup>Roman numerals refer to parts of the target passage from DA 2.11; see Appendix.

**How the perceiving subject is potentially all but actually none.** The proper subject of perceptual affection is an *ensouled sense-organ*, a hylomorphic unity of which the matter (the “sense-organ”, αἰσθητήριον) is a certain bodily magnitude and the form (the “sense”, αἴσθησις), is the capacity defining what that organ is (DA 2.12, 424a24–28). In turn, the sensory capacity is defined in relation to the genus of sensible qualities that uniquely act as such on it, and that it uniquely perceives:

**An opinionated introduction to Aristotle’s science of sensible qualities.** For Aristotle, a genus of sensible qualities is a one-dimensional scale (spectrum) ranged between contrary extreme qualities; intermediate values (species) of the scale are ontological “mixtures” of these primary extremes (*Metaph.* 10.1, 1057b2–34):



For instance, color is the scale of qualities mixed from the primary chromatic extremes “black” (or dark, μέλαν) and “white” (or bright, λευκόν); intermediate colors are defined as *ratios* (λόγοι) of these extremes, the position of each determined by the degree to which one or the other extreme dominates in that mixture; thus baby blue has more white than black in its mixture, whereas indigo has more black than white (*Sens.* 3, 440a31–b25). Other sensible quality scales are structurally analogous (*Sens.* 7, 447b30–448a1).

**Question** What about the mid-point of the scale, the value defined by a 1 : 1 ratio of extremes?

**Answer** It *lacks* qualification, since equal proportions of extreme qualities “cancel each other out” and make impossible perception of either (*Sens.* 7, 445a25–29)!

In *De Anima*, Aristotle explicitly frames the relationship between sense and sense-organ in terms of this theory of sensible qualities:

- Each sense is a *ratio* of its organ, akin to the attunement of strings on a lyre (DA 2.12, 424a28–32).
- But *unlike* a well-strung lyre, it is the sensory ratio that *causes* the organ to be in the condition it’s in, not the other way around: *the sense is the form and final cause of its organ, qua organ.*
- The perceptual subject must be the same in genus (although different in species) as the qualities it perceives.
- Hence, the mixture defining the sense-organ, and represented by the sensory ratio, must be a mixture of the primary extremes defining the quality scale(s) it specially perceives.

**Question** What is the ratio of the sense prior to perceptual affection?

**Answer** Aristotle is never explicit, but the abductively strongest inference is that it is the 1 : 1 ratio representing the mixture in which the extremes cancel each other out. Two reasons:

1. Aristotle needs the sense organ to be qualityless but nevertheless the same in genus as the qualities that act on it.
2. Aristotle describes the sense organs as proportions: the eye is transparent by virtue of containing a “proportionate” (σύμμετρον, GA 1.5, 779b28) density of fluid corresponding to “the mean between a lot and a little fluid” (ἡ . . . μέση τοῦ πολλοῦ καὶ τοῦ ὀλίγου ὑγροῦ, 780a23).

**The dilemma restated.** In general, what makes the ensouled sense organ potentially all but actually none of the qualities it specially perceives is that it is composed in equal measure of the extreme qualities defining the relevant quality scale(s): *e.g.*, the organ of sight is in equal measures black and white, the organ of hearing in equal measures flat and sharp, and so on. For this reason, Aristotle can say in [IV] that what perceives white and black is *neither* white *nor* black.

However, it seems the same cannot be said for the organ of touch, at least if being neither hot nor cold implies *lacking* temperature altogether. For although nothing prevents bodies from being colorless or soundless, nothing that lacks *temperature* can be a body.

## PART II: THE PUZZLE RESOLVED

**Or can it?** Aristotle makes clear in [IV] that the organ of touch stands to the quality scales it specially perceives in the same way that the organ of sight does to the color scale:

**Text 4** [IV] DA 2.11, 424a7–10

καὶ δεῖ ὥσπερ τὸ μέλλον αἰσθῆσθαι λευκοῦ καὶ μέλανος μηδέτερον αὐτῶν εἶναι ἐνεργείᾳ, δυνάμει δ' ἄμφω (οὕτω δὲ καὶ ἐπὶ τῶν ἄλλων), καὶ ἐπὶ τῆς ἀφῆς μήτε θερμὸν μήτε ψυχρόν.

And just as that which is to perceive white and black must be neither of these in actuality, but both in potentiality, and so on in the other cases, in the case of touch too [that which is to perceive hot and cold must be] neither hot nor cold.

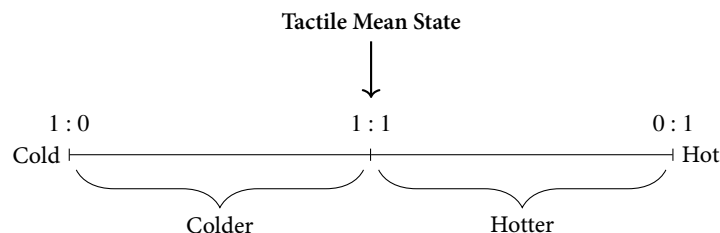
We are now in a position to see that this is precisely the point Aristotle is trying to make in [II]:

**Text 5** [II] DA 2.11, 424a2–5

διὸ τοῦ ὁμοίως θερμοῦ καὶ ψυχροῦ, ἢ σκληροῦ καὶ μαλακοῦ, οὐκ αἰσθανόμεθα, ἀλλὰ τῶν ὑπερβολῶν, ὡς τῆς αἰσθήσεως οἶον μεσότητός τινος οὕσης τῆς ἐν τοῖς αἰσθητοῖς ἐναντιώσεως.

For this reason we do not perceive anything that is equally hot and cold or [equally] hard and soft, but rather the excesses, given that the sense is like a kind of mean state of the contrariety present in sensible objects.

**Aristotle's response to the dilemma.** There exists a tactile “blind spot”, but only for bodies that, like the organ of touch, instantiate the “mean” (or 1 : 1) value of a tangible quality scale:



**Response to Second Horn** The organ of touch must be potentially all but actually none of the qualities it perceives, so it will instantiate a 1 : 1 ratio of the extreme qualities of each scale it specially perceives; it will therefore be equally hot and cold, hard and soft, wet and dry, etc.

**Response to First Horn** But since, on pain of not being bodies at all, bodies mixed (*e.g.*) in equal proportions of hot and cold are not temperatureless but “meanly” temperatured, determinately neither-hot-nor-cold, we will not perceive bodies that, like the organ of touch, occupy this position on the temperature scale. (Similarly for other tangible qualities.)

The last clause of **Text 5** summarizes Aristotle’s reasoning: the organ will be in this condition *because* the sense is a mean state of the contrariety present in the objects it specially perceives.

**A Doctrine of the Sensory Mean.** This description alludes to a distinction familiar from Aristotle’s ethics:<sup>3</sup>

**Text 6** *EN* 2.6, 1106a26–b7

ἐν παντὶ δὴ συνεχεῖ καὶ διαιρετῷ ἔστι λαβεῖν τὸ μὲν πλεῖον τὸ δ' ἔλαττον τὸ δ' ἴσον, καὶ ταῦτα ἢ κατ' αὐτὸ τὸ πρᾶγμα ἢ πρὸς ἡμᾶς. τὸ δ' ἴσον μέσον τι ὑπερβολῆς καὶ ἐλλείψεως· λέγω δὲ τοῦ μὲν πρᾶγμα-τος μέσον τὸ ἴσον ἀπέχον ἀφ' ἑκατέρου τῶν ἄκρων, ὅπερ ἐστὶν ἐν καὶ τὸ αὐτὸ πᾶσι, πρὸς ἡμᾶς δὲ ὁ μήτε πλεονάζει μήτε ἐλλείπει· τοῦτο δ' οὐχ ἔν, οὐδὲ ταὐτὸν πᾶσι.

οἷον εἰ τὰ δέκα πολλὰ τὰ δὲ δύο ὀλίγα, τὰ ἕξ μέσα λαμβάνουσι κατὰ τὸ πρᾶγμα· ἴσῳ γὰρ ὑπερέχει τε καὶ ὑπερέχεται· τοῦτο δὲ μέσον ἐστὶ κατὰ τὴν ἀριθμητικὴν ἀναλογίαν. τὸ δὲ πρὸς ἡμᾶς οὐχ οὕτω ληπτέον· οὐ γὰρ εἴ τῳ δέκα μναὶ φαγεῖν πολὺ δύο δὲ ὀλίγον, ὁ ἀλείπτῃς ἕξ μνᾶς προστάξει· ἔστι γὰρ ἴσως καὶ τοῦτο πολὺ τῷ ληψομένῳ ἢ ὀλίγον· Μίλωνι μὲν γὰρ ὀλίγον, τῷ δὲ ἀρχομένῳ τῶν γυμνασίων πολὺ. ὁμοίως ἐπὶ δρόμου καὶ πάλης. οὕτω δὲ πᾶς ἐπιστήμων τὴν ὑπερβολὴν μὲν καὶ τὴν ἑλλειψιν φεύγει, τὸ δὲ μέσον ζητεῖ καὶ τοῦθ' αἰρεῖται, μέσον δὲ οὐ τὸ τοῦ πρᾶγματος ἀλλὰ τὸ πρὸς ἡμᾶς.

In everything continuous and divisible it is possible to take a greater, a lesser, and an equal, and these [sc. greater, lesser, and equal] either [1] in accordance with the object itself or [2] in relation to us. Now [in each case] the equal is a sort of mean between excess and deficiency, [1] but I call the equal “mean [in accordance with] the object” when it, being equidistant from the extremes, is one and the same for all, [2] and [I call] “relative to us” that [sc. mean] which is neither too much nor too little; this is neither one nor the same for all.

For example, [1] if 10 is many and 2 is few, 6 is taken as the mean in accordance with the object, since it exceeds and is exceeded in equal measure. This is mean in accordance with arithmetic proportion. [2] What is [mean] relative to us should not be taken in the same way. For it is not the case that, if 10 minae is a large portion and 2 minae is a small portion for a person to consume, the trainer will [therefore] prescribe 6 minae. For it may be that this [portion] is large or small for the [specific] person taking it—for it will be small for Milo, but large for the one who is just beginning gymnastic training. The same applies to running and wrestling. Indeed, every expert avoids excess and deficiency in this way, but rather seeks after the mean and chooses this—the mean not of the object but relative to us.

Aristotle’s famous **Doctrine of the Ethical Mean** analyzes character virtues like courage and generosity as means “relative to us”, or *subject-relative* means:

- Virtuous agents are like personal trainers: the expertise of both consists in identifying (and choosing) what is neither too much nor too little (*cf.* Brown 1997, 2014, Rapp 2006).

<sup>3</sup>The only other commentator I know to have drawn this connection is the 4<sup>th</sup> century Byzantine Themistius (*in de An.* 77.5–22 Heinze), who nevertheless comes, I think, to the wrong conclusions about sensory discrimination in [III].

- However, what is mean in this sense is not *one* and *the same for all*, since different practical and affective responses are appropriate and choiceworthy in different practical situations.

By contrast, Aristotle’s **Doctrine of the Sensory Mean** analyzes the senses as means “in accordance with the object”, or *object-relative* means:

- The sense is a *mean state* because it is the form and final cause of an organ that, as the organ of that sense, instantiates a “mean” (or 1 : 1) ratio of the extremes defining the relevant scale(s).
- This is a mean “of the contrariety present in sensible objects” because it represents the position on the scale equidistant between the contrary extremes—*neither white nor black, neither hot nor cold*.
- This mean, like the integer 6 in the series 2 . . . 10, is also *one* and *the same for all*, context-invariant because fixed by the nature of the quality scale itself.

### PART III: THE SENSORY MEAN IS A DISCRIMINATIVE MEAN

**The significance of the Doctrine.** The Doctrine of the Sensory Mean is a consequence of the senses’ essential nature as capacities to perceive a certain range of sensible qualities, but for Aristotle it explains another important capacity of the senses:

**Text 7** [III] DA 2.11, 424a5–7

καὶ διὰ τοῦτο κρίνει τὰ αἰσθητά. τὸ γὰρ μέσον κριτικόν· γίνεταί γὰρ πρὸς ἑκάτερον αὐτῶν θάτερον τῶν ἄκρων·

That is also why [the sense] discriminates the objects it perceives. For it is the mean which is capable of discrimination, since in relation to each extreme it comes to be the other extreme.

**What is sensory discrimination?** The range of available interpretations is wide, but most converge on the general thesis that sensory discrimination is significant in Aristotle’s theory of perception because it has a role in explaining *how* we manage to perceive sensible qualities (or sensibly qualified objects) in the first place (see also Ebert 1983, de Haas 2005, Perälä 2018; contrast Moss 2012).

**Miller 1999** Perception “essentially involves the apprehending of distinctions among perceptible objects” (203).

**Gregorić 2007** Discrimination is “the fundamental ability of each individual sense to pick out various qualities in the scale which constitutes one kind of special perceptible” (145).

**Corcilius 2014** “[P]erceptual discrimination turns physical events—incoming sensory input—into something non-physical, namely phenomenal content *about* the physical world” (48–49).

Call this the **psychological interpretation** of sensory discrimination.

**Psychological Interpretation** Sensory discrimination is the capacity to cognize, register, or enjoy experiences as of sensible qualities (or sensibly qualified objects), *e.g.*, by apprehending differences between them or between the perceived quality and the initial condition of the organ.

Several commentators find support for this interpretation in **Text 7**. I want now to argue that this has been a mistake, due in part to a (sometimes tacit) acceptance of the standard reading of Aristotle’s “blind spot”. Read

instead as a consequence of Aristotle's Doctrine of the Sensory Mean, Text 7 points to a different, and arguably more significant, role for sensory discrimination in animals' cognitive lives.

**The “formal causal” argument for sensory discrimination.** Here is Aristotle's argument in Text 7:

**Major Premise** The capacity to discriminate belongs to what is mean.

**Minor Premise** Being mean belongs to sense S.

**Conclusion** Therefore, the capacity to discriminate belongs to S.

**Minor Premise** As we've seen, S is a mean because it is the form of an organ that, as the organ of S, instantiates the object-relative mean of the quality scale(s) S specially perceives.

**Major Premise** The connection between meanness and the capacity to discriminate is explained by the thesis that the mean turns out to be *contrary to both extremes*.

**Question 1** What is the significance of being contrary to both extremes?

**Question 2** What does its significance imply for the sensory capacity to discriminate?

**Understanding the major premise.** We are helped once again by the qualified parallel between the senses and the character virtues:

**Text 8** EN 2.8, 1108b11–26

[8.1] *τριῶν δὲ διαθέσεων οὐσῶν, δύο μὲν κακιῶν, τῆς μὲν καθ' ὑπερβολὴν τῆς δὲ κατ' ἔλλειψιν, μιᾶς δ' ἀρετῆς τῆς μεσότητος, πᾶσαι πάσαις ἀντίκεινταιί πως· αἱ μὲν γὰρ ἄκραι καὶ τῇ μέσῃ καὶ ἀλλήλαις ἐναντίαι εἰσίν, ἡ δὲ μέση ταῖς ἄκραις· ὥσπερ γὰρ τὸ ἴσον πρὸς μὲν τὸ ἕλαττον μείζον πρὸς δὲ τὸ μείζον ἕλαττον, οὕτως αἱ μέσαι ἕξεις πρὸς μὲν τὰς ἐλλείψεις ὑπερβάλλουσι πρὸς δὲ τὰς ὑπερβολὰς ἐλλείπουσιν ἔν τε τοῖς πάθεσι καὶ ταῖς πράξεσιν.*

[8.2] *ὁ γὰρ ἀνδρείος πρὸς μὲν τὸν δειλὸν θρασὺς φαίνεται, πρὸς δὲ τὸν θρασὺν δειλός· ὁμοίως δὲ καὶ ὁ σώφρων πρὸς μὲν τὸν ἀναίσθητον ἀκόλαστος, πρὸς δὲ τὸν ἀκόλαστον ἀναίσθητος, ὁ δ' ἐλευθέριος πρὸς μὲν τὸν ἀνελεύθερον ἄσωτος, πρὸς δὲ τὸν ἄσωτον ἀνελεύθερος. διὸ καὶ ἀπωθοῦνται τὸν μέσον οἱ ἄκροι ἐκάτερος πρὸς ἐκάτερον, καὶ καλοῦσι τὸν ἀνδρεῖον ὁ μὲν δειλὸς θρασὺν ὁ δὲ θρασὺς δειλόν, καὶ ἐπὶ τῶν ἄλλων ἀνάλογον.*

[8.1] Given that there are three dispositions [of soul]—since two are vices, one in respect of excess and one in respect of deficiency, and one, virtue, is the mean state—all are in a way opposed to all. For the extremes are contrary to one another and to the mean, and the mean [is contrary] to the extremes. For just as the equal is greater in relation to the lesser and lesser in relation to the greater, in this way mean [psychological] states exceed the lesser [psychological states] and fall short of the greater [psychological states] in domains of affection and action.

[8.2] For the courageous man appears rash in comparison to the cowardly but cowardly in comparison to the rash; similarly, the temperate man [appears] indulgent in comparison to the insensible but insensible in comparison to the indulgent, and the generous man [appears] wasteful in comparison to the ungenerous but ungenerous in comparison with the wasteful. For this reason too each of the extreme [persons] confound the mean with the other [extreme]; the coward calls the courageous man rash



and the rash man calls him a coward, and analogously in the other cases.

8.1 Aristotle makes a parallel observation about the character virtues:

- A character virtue (e.g., courage) stands as contrary to the extreme vices of excess (e.g., rashness) and deficiency (e.g., cowardice), since, as a mean, it both falls short of the vice of excess and exceeds the vice of deficiency.
- Similarly, a sense (e.g., touch) stands as contrary to opposite extremes of greater and lesser (e.g., hot and cold), since, as a mean, it is both exceeded by the greater and exceeds the lesser.

8.2 Aristotle draws an explicit conclusion about the ethical mean that we can extrapolate to the sensory mean:

- Because courage is both deficient relative to rashness and excessive relative to cowardice, the courageous person is uniquely in a position to apprehend the extremes as what they really are: excessive and deficient.
- Similarly, because the tactile mean is both cold relative to hot and hot relative to cold, touch is uniquely in a position to apprehend hot and cold bodies as what they really are: hot and cold.

However, in drawing this parallel we must heed the disanalogy between the ethical and sensory means:

- Because the ethical mean is a *subject-relative* mean, the practical and affective responses of rash and cowardly agents appear to the courageous person as they objectively are, namely excessive and deficient of what is choiceworthy, but these responses are properly so-called *only in the context of the relevant practical situation*.
- In contrast, because each sense is an *object-relative* mean of the scale(s) it specially perceives, objects appear qualified in those modalities as they objectively are *in a context- and perceiver-invariant way*.

## CONCLUDING REMARKS

**Towards an epistemological interpretation of sensory discrimination.** This interpretation coheres with Aristotle's remarks on sensory discrimination elsewhere. Perception, like thought, is a capacity though whose exercise living things come to be aware of how the world is outside of their own skin; as Aristotle puts it, both are means by which "the soul discriminates and comes to know something that is" (*κρίνει τι ἢ ψυχὴ καὶ γνωρίζει τῶν ὄντων*, DA 3.3, 427a20–21). Read as a consequence of Aristotle's Doctrine of the Sensory Mean, the argument of Text 7 complements this idea by explaining precisely *how* perception manages this epistemic feat.

Taken altogether, then, these considerations recommend an alternative, *epistemological* interpretation of sensory discrimination:

**Epistemological Interpretation** Sensory discrimination is the capacity to become aware of some mind-independent feature of the world through the exercise of the senses, specifically, by becoming aware of how sensible bodies exceed or fall short of the (object-relative) mean of in terms of which the relevant senses are defined.

More needs to be said in defense of an epistemological interpretation of sensory discrimination, but note in conclusion that it intuitively fits with the view of the tactile mean Aristotle articulates elsewhere:

Text 9 *Meteor.* 4.4, 382a6–21

πρὸς μὲν οὖν ἄλληλα ἀόριστά ἐστιν τῷ μᾶλλον καὶ ἥττον· ἐπεὶ δὲ πρὸς τὴν αἴσθησιν πάντα κρίνομεν τὰ αἰσθητά, δηλονότι καὶ τὸ σκληρὸν καὶ τὸ μαλακὸν ἀπλῶς πρὸς τὴν ἀφὴν ὠρίκαμεν, ὡς μεσότητι χρώμενοι τῇ ἀφῇ· διὸ τὸ μὲν ὑπερβάλλον αὐτὴν σκληρόν, τὸ δ' ἐλλείπον μαλακὸν εἶναί φαμεν.

In relation to one another [hard and soft] are indeterminate in respect of more and less. But since we discriminate all sensible objects in relation to the [relevant] sense, it is clear that we determine what is hard and soft without qualification in relation to touch, since we use touch as a mean state. For this reason we call what exceeds it [sc., touch] hard and what falls short of it soft.

It is not just that we *call* hard and soft what exceeds or falls short of touch, nor that hard and soft are *defined* relative to touch.<sup>4</sup> Aristotle's point, as we should now expect, is rather that what *feels* hard or soft to the touch *is* hard or soft, since touch is a mean state between them.

#### APPENDIX: *DE ANIMA* 2.11, 423B30–424A10

[I] ἀπται μὲν οὖν εἰσὶν αἱ διαφοραὶ τοῦ σώματος ἢ σώμα· λέγω δὲ διαφορὰς αἱ τὰ στοιχεῖα διορίζουσι, θερμὸν ψυχρόν, ξηρὸν ὑγρόν, περὶ ὧν εἰρήκαμεν πρότερον ἐν τοῖς περὶ τῶν στοιχείων. τὸ δὲ αἰσθητήριον αὐτῶν τὸ ἀπτικόν, καὶ ἐν ᾧ ἡ καλουμένη ἀφή ὑπάρχει αἴσθησις πρώτη, τὸ δυνάμει τοιοῦτόν ἐστι μόριον· τὸ γὰρ αἰσθάνεσθαι πάσχειν τι ἐστίν· ὥστε τὸ ποιοῦν, οἷον αὐτὸ ἐνεργεία, τοιοῦτον ἐκείνο ποιεῖ, δυνάμει ὄν.

[I] Now, the differences of body *qua* body are tangibles. (I call *differences* those [qualities] that determine the elements—hot and cold, dry and wet—which we spoke about earlier in our remarks on the elements.) But the organ of touch—the sense organ of these [qualities] and that in which the so-called sense of touch is present primarily—is the part that is in potentiality such [as these qualities are in actuality]. For perceiving is a way of being affected; hence that which acts makes that [part], which is potentially [such as it is], actually such as it is.

[II] διὸ τοῦ ὁμοίως θερμοῦ καὶ ψυχροῦ, ἢ σκληροῦ καὶ μαλακοῦ, οὐκ αἰσθανόμεθα, ἀλλὰ τῶν ὑπερβολῶν, ὡς τῆς αἰσθήσεως οἷον μεσότητός τινος οὐσης τῆς ἐν τοῖς αἰσθητοῖς ἐναντιώσεως.

[II] For this reason we do not perceive anything that is equally hot and cold or [equally] hard and soft, but rather the excesses, given that the sense is like a kind of mean state of the contrariety present in sensible objects.

[III] καὶ διὰ τοῦτο κρίνει τὰ αἰσθητά. τὸ γὰρ μέσον κριτικόν· γίνεται γὰρ πρὸς ἑκάτερον αὐτῶν θάτερον τῶν ἄκρων·

[III] That is also why [the sense] discriminates the objects it perceives. For it is the mean which is capable of discrimination, since in relation to each extreme it comes to be the other extreme.

[IV] καὶ δεῖ ὥσπερ τὸ μέλλον αἰσθήσεσθαι λευκοῦ καὶ μέλανος μηδέτερον αὐτῶν εἶναι ἐνεργεία, δυνάμει δ' ἄμφω (οὕτω δὲ καὶ ἐπὶ τῶν ἄλλων), καὶ ἐπὶ τῆς ἀφῆς μήτε θερμὸν μήτε ψυχρόν.

[IV] And just as that which is to perceive white and black must be neither of these in actuality, but both in potentiality, and so on in the other cases, in the case of touch too [that which is to perceive hot and cold must be] neither hot nor cold.

<sup>4</sup>To the contrary, Aristotle has just defined *hard* as the property of having a surface that does not yield into itself and *soft* as the property of having a surface that does yield into itself, but not by displacement (as water does); see *Meteor.* 4.4, 382a11–14.

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