

Aristotle on the Perception of Universals

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In the *Posterior Analytics*, Aristotle tells us that we learn things in three ways: we *perceive* particulars, we come to grasp universals by *induction* from these perceived particulars, and we eventually find ourselves in a position to *demonstrate* things about the universals we came to grasp inductively.¹ Perception, then, is the source of all our learning—perception supplies the knowledge without which induction could not proceed, and without which our demonstrations would therefore find no object.

Though our perceptual beginnings play a central role in his epistemology, Aristotle never explicitly discusses what it would mean for our learning to be *based on* or *derived from* the things we perceive—it's clear that perceptual knowledge is meant to be a necessary *prerequisite* for the development of other forms of knowledge, but in itself this doesn't tell us what perception actually contributes to this development, or how it relates to the more advanced cognitive states we might form on its basis. And what little Aristotle *does* say on these topics is perplexing. For instance, at a key juncture in his description of our epistemic development he tells us that perception serves as an adequate basis for our learning because “although we perceive particulars, perception is of universals; for instance of human being, not of Callias-the-human-being” (*APo* II.19 100a16-b1).² My main aim in this paper is to explain this remark, and examine its significance in Aristotle's broader account of our learning.

The difficulties are many. First off, Aristotle explicitly tells us in another passage that we must perceive particulars and *not* universals (*APo* I.31 87b29-30). So the universals our perceptions are “of” must not be the objects we perceive.³ But it's not obvious how we are to make sense of the thought that perception

¹This three part account of our learning is explicitly endorsed in *APo* I.18, but is also implicit in *APo* II.19 and various other discussions of our cognitive development. Elsewhere, Aristotle adds that we can learn by *definition* (*Met* A9 992b30-33), but this need not conflict with his account as I've sketched it here: learning by definition could just be a form of inductive or demonstrative learning, or involve some combination of the two—cf. *APo* II.10 93b38ff, and Bronstein (2016: 69–73).

²Unless otherwise noted, translations are my own—though I've often adapted Barnes (1993).

³I will follow Aristotle in using “perception” to denote both the cognitive capacity to perceive and the perceptual experience or state resulting from its activity—in context it will be clear which is

is “of” something other than its objects. Even supposing we somehow grasp universals when we perceive their particular instances, we’d like to know what *relation* we bear to these universals when we do so—and whether this relation is borne to just any universal, or only to some.⁴ In the case at hand, for instance, we’d like to know what exactly we’re meant to learn about the universal *human being* when we perceive Callias, and thereby have a perception “of” this universal.

Even if we can resolve this initial difficulty, we face a broader interpretive problem. The broader problem is that *any* perceptual grasp of universals is hard to reconcile with the role perception and perceptual knowledge must play in Aristotle’s account of our learning. For this account (I’ll be arguing) requires that perception be a *basic* capacity—a capacity we share with lower animals, and which yields only an unsophisticated form of knowledge. And one of the things that makes perception so basic, Aristotle tells us, is the particular character of its objects. But then it’s hard to see how this could be consistent with our having any perceptual grasp of universals: perception is supposed to be basic because we perceive particulars *and particulars only*, and this should rule out any perception of universals from the start.

Most commentators seek to resolve these issues by drawing a distinction between the *objects* perception relates us to and the *contents* of our perceptual experiences.⁵ For restricting perception to particular objects, like Callias or some particular figure, does not preclude universals from featuring in the contents of our experience when perceiving these particulars—the sorts of contents we might express in propositions like “Callias is a human being,” or “this figure is a triangle.”⁶ So one might interpret Aristotle’s remark along the following

invoked. *Contra* Scott (1995: 153), I do not take the distinction between our *perceiving* particulars and our *perceptions* being of universals to have any special significance on its own—for note that Aristotle says not only that we do not perceive universals, but also that *perception* is not of universals (*APo* I.31 88a2, cf. McKirahan (1992: 253)), and not only that we perceive particulars, but also that *perception* is of particulars (*APo* I.18 81b6). So we should not read too much into the phrasing of his remark.

⁴For now I will treat universals as entities that are “predicated of many things,” and particulars as entities that are not so predicated (cf. *De Int* 17a38-40). On this interpretation universals are simply *types*, and particulars *tokens*. However I will be arguing below that this does not always account for Aristotle’s usage—especially when he uses these terms to describe what we perceive.

⁵See Barnes (1993: 266), Bronstein (2016: 245), Caston (2015: 46–47), Ferejohn (1988: 105), McKirahan (1992: 249), Modrak (1987: 168), and Moss (2012: 153–54) for recent examples, and see also Sorabji (2010: 3–26) for some precursors in the commentary tradition. I think versions of this reading can be found in Eustratius (*In APo* 266.14–29), Philoponus(?) (*In APo II* 437.15–438.2), and Themistius (*In APo* 64.2–9).

⁶Aristotle’s perceptual contents need not be *propositions*, as I’ll be arguing below. For now, propositions can simply be taken as a plausible candidate for what the content of our perception is when we perceive *that* something is the case (when we have *aisthēsis hoti* something).

lines: perception relates us to particular objects, but these objects must instantiate certain universals, and so perception will be “of universals” at least insofar as universals are always encoded in the contents of our perceptual experiences. The challenge then becomes to explain what it is for universals to be “encoded” in perceptual contents, and why this feature would make perception an appropriate starting-point for our learning (I’ll investigate some options below).

Though I think solutions of this sort get something right about Aristotle’s treatment of perception, I’ll be arguing here that they don’t explain the sense in which perception is “of universals.” They tell us something instructive about the logical status of perceptible entities, and about the sorts of terms that might feature in the contents of perceptual states. But they don’t tell us how perceiving subjects are *related* to the universals their perceptions are “of,” and don’t explain why our perceptions would, specifically, be “of” the very universal explanations or causes (*aitiai*) we might understand scientifically. In what follows I will argue that these concerns are the ones that motivate Aristotle’s remark about perception in *APo* II.19, as well as his related account of the particular and universal aspects of various cognitive states in *APo* I.31. I’ll then defend an alternative interpretation of his remark, on which we perceive particulars in the sense that we perceive things *as they are at some time and place*, and our perceptions are “of universals” in the sense that certain universals *cause* or *determine* the features to which we’re perceptually responsive at that time and place. If this is right, perception’s universality does not reflect a fact about the logical status of perceptible entities or perceptual contents, but rather a fact about the causes that govern our broader perceptual responsiveness to the world: we are perceptually responsive to features caused by universals we cannot directly perceive.

Understanding our perception of universals in these terms better fits our text, and, I will argue, provides a more philosophically appealing picture of perception’s place as a starting-point for our learning. It also shows that Aristotle had an interesting and defensible view of the relationship between perception and more advanced cognitive states like experience (*empeiria*) and scientific understanding (*epistēmē*)—a point on which he is often thought to have had nothing (or nothing good) to say.

1 Perception’s Place in Aristotle’s Epistemology

Aristotle’s epistemic ideal is a form of demonstrative understanding: we *understand* (have *epistēmē* of) some domain when we can demonstrate the truths in that domain in a way that reveals why these truths must hold. On Aristotle’s view, the principles from which our demonstrations begin provide the fundamental explanatory grounds for some scientific domain. Since demonstrations explain

their conclusions, these principles cannot be demonstrated—we learn them in some other, nondemonstrative way. The last chapter of the *Analytics* tells us how: we learn scientific principles by *induction*, a type of cognitive development that starts with a basic form of perceptual knowledge and eventually leads, through the formation of *empeiria* and a grasp of universals, to an understanding of the basic principles proper to some science, and what these principles serve to demonstrate.⁷ Thus demonstrative understanding, for Aristotle, is developed from various, increasingly sophisticated forms of nondemonstrative knowledge. The knowledge provided by perception serves as a starting-point for this development.

It's a key part of this developmental account that our initial perceptual knowledge be relatively unsophisticated. Indeed, Aristotle intends his account as an alternative to a certain sort of innatist view, according to which scientific understanding is always present within us in some latent form, and we come to *actually* understand things by making this latent knowledge manifest.⁸ Aristotle thinks that this kind of innatism is absurd: he thinks it posits the latent existence of a sophisticated kind of knowledge that simply couldn't exist in a latent form. On his view, our understanding develops from progressively less sophisticated forms of knowledge, and, ultimately, from *perceptual* knowledge—a form of knowledge available to even the most basic animals. In his words:⁹

we must possess some sort of capacity, but not one which will be more valuable than these states [which know first principles] in respect of exactness. And this certainly seems to be the case for all animals: they have an innate discriminatory capacity called perception. (*APo* II.19 99b32-35)

Naturally other animals won't have the capacities required to develop their perceptual knowledge into demonstrative understanding. But it's important that on Aristotle's account we all share the same humble beginnings: our ability

⁷See Gasser-Wingate (2016) for some suggestions on how to interpret the notion of induction at play in this development—as well as a defense of the view (implicit in my description here) that *empeiria* and the grasp of universals that results from it are indeed distinct stages. In what follows I'm going to use “knowledge” to refer to *gnōsis* broadly construed, which includes demonstrative and non-demonstrative knowledge, and “understanding” to refer to the kind of demonstrative expertise described above (i.e. *epistēmē*, in the technical sense at play in *APo*). On this usage, understanding is a form of knowledge, but there are many forms of knowledge besides understanding. On perception as a *gnōsis*, see Burnyeat (1981: 114).

⁸To take a familiar example, *recollection*, for Plato, is the process responsible for activating our innate, latent knowledge of the Forms—that is, the process by which we acquire the manifest understanding of the Forms an expert might display.

⁹Strictly speaking, Aristotle tells us here that all our knowledge develops from our *capacity* to perceive, rather than the knowledge resulting from this capacity's exercise. But we can ignore this wrinkle: the thought is plainly that exercising the capacity would (under normal circumstances) yield the required knowledge.

to understand things scientifically is not the result of our accessing some special latent knowledge within us, but rather the result of our progressive development from an unsophisticated form of perceptual knowledge to a sophisticated form of theoretical understanding.

Aristotle's rejection of innatist views thus depends on perception being a relatively basic starting-point for our learning. And it's natural to think that perception's *particularity* is what qualifies it for this role. For Aristotle frequently emphasizes that it's our grasp of universals that sets us apart from other, non-rational animals, and serves as the key mark of epistemic progress. Perception, though a helpful way to know that fire is hot or that Socrates looks pale, say, would never yield the sort of *wisdom* ascribed to those who grasp universal causes (*Met* A1 981b10-13).¹⁰

Yet Aristotle thinks that when we perceive particulars our perceptions are nonetheless *of universals*. Here's the passage:

[1] When one of the undifferentiated things makes a stand, there is for the first time a universal in the soul; for although we perceive particulars, perception is of universals, e.g. of human being, not of Callias-the-human-being. And again a stand is made among these, until something partless and universal makes a stand—for instance “such-and-such an animal” [makes a stand], until “animal” [does]; and likewise with “animal.” Thus it's clear that we must get to know the primitive [first principles] by induction; for this is how perception creates universals in us. (*APo* II.19 100a15-b5)

This passage offers a very compact description of our epistemic ascent from perception to scientific understanding (which Aristotle describes here as a grasp of “primitive” first principles). Aristotle characterizes this ascent in terms of universals making consecutive “stands” in our souls. Though it's not fully explicit here, we can understand each stand as marking a grasp of the relevant universal in its explanatory role—for instance, a grasp of what some entities' being *human* might explain about them. Induction is the process through which universal stands of this sort take place—the process through which universals are “created in us” from the things we perceive—and repeated inductive stands eventually lead to an understanding of explanatorily primitive first principles.¹¹

¹⁰See *Met* A1 as a whole for the contrast between universal and particular states and their relative sophistication (and see *Met* A2 982a11-12 on perception's basic character). This contrast is implicit in many of Aristotle's arguments—for instance his explanation that lower animals cannot be akratic because they lack universal knowledge (*EN* VII.3 1147b3-5).

¹¹For an extended defense of the claims summarized here, see Gasser-Wingate (2016). I've taken the universal “stands” to reflect a sophisticated form of explanatory knowledge—knowledge of universal causes as universal causes. For the purposes of my present argument, however, what matters is that the universals making a “stand” be universal causes, whether or not our knowledge

How exactly all this is achieved need not concern us at this point (I'll be emphasizing some key points below). What's important for now is that perception's being *of universals* is said to be what makes it possible for the first universal stand to take place. That is, even though we only perceive particulars, perception serves as an *adequate* starting point for our cognitive development because (*gar*) it *also* relates us, in some way, to universals like "human being"—the sorts of universals we might eventually understand scientifically, as causes for some range of phenomena (e.g. some range of human features or behaviors).

So Aristotle considers perception the starting-point for all our learning. His account of our ascent from perception to scientific understanding requires that perception provide us with an *unsophisticated* form of knowledge: this is how Aristotle contrasts his view with innatist alternatives he finds absurd. Perception's unsophisticated character is tied to its particularity—all animals can perceive particulars, but any grasp of universals (the true sign of wisdom) will require some more advanced cognitive capacity. Yet Aristotle *also* seems to think that perception is "of" the universals we might understand scientifically, and suggests that this explains how perception could serve as an adequate starting-point for our learning.

The interpretive challenges identified at the start of this paper are therefore especially pressing. For it's hard to make sense of Aristotle's account of our perceptual beginnings without any further explanation of what perceiving a particular like Callias would tell us about the universal "human being." More broadly, it's hard to see how Aristotle could reconcile *any* perceptual grasp of universals with the thought that perception is an especially basic capacity, if indeed universality is the key mark of epistemic sophistication.

In what follows I'll be considering the merits of common attempts to resolve these difficulties. But first, I want to flag an assumption I'll be making about the *sort* of perception Aristotle invokes in this context. The assumption is that perception here is perception *broadly construed*—that is, perception that includes as its objects not just qualities like color, hardness, or motion, which Aristotle labels *per se* (*kath' hauta*) perceptibles, but also things like "Callias" or "the son of Diares," which he labels *accidental* (*kata sumbebēkos*) perceptibles. There are complex interpretive questions about the relationship between *per se* and accidental perceptibles, and whether accidental perceptibles are indeed things

of them involves a recognition of their explanatory role. (It does seem to me there's good evidence for the stronger claim: these stands are supposed to supply an understanding of scientific principles *as explanatory primitives* (*nous* of principles), and so, plausibly, each stand should itself represent some form of knowledge of universals sensitive to their explanatory role—*pace* Bronstein (2012). The association of universals with explanations is also explicit in *Met* A1 and *APo* I.31, on which more below.)

Aristotle thinks we *perceive*. I won't consider them here.¹² For these questions are orthogonal to the claims Aristotle makes about our perception of universals: in passage [1], we're told that we perceive of *Callias* that he's a human being, and *Callias* is *already* an accidental perceptible—indeed one of Aristotle's paradigmatic cases thereof. So whatever we might want to say about the sense in which *Callias* is or is not (or is not *fundamentally*, or *strictly*) perceived, it's a further mystery what our perceiving *Callias* has to do with our perception of the universal “human being,” and how our perception of this universal would contribute to our learning.

I'll be assuming, then, that Aristotle's account of our cognitive development is not meant to shed any light on the relationship between accidental and *per se* perceptibles: Aristotle never seeks to explain how we could perceive *Callias* rather than merely sensing his colorful humanoid surface, but rather takes it for granted that we do indeed *perceive* *Callias*, and seeks to explain our cognitive development from there. No doubt this starting-point will disappoint those who expected from Aristotle an account detailing the derivation of advanced forms of knowledge from our most basic apprehension of *per se* perceptible qualities.¹³ But these expectations are misplaced. For Aristotle, *per se* perceptibles are fundamental in a psychological sense: they serve to define the few sensory capacities whose operation underlies all perceptual activity. It does not follow that they are fundamental in an epistemological sense, too—that our *knowledge* of *per se* perceptibles should be taken to serve as an exclusive basis for all our learning. Aristotle's description of our epistemic development as something that begins with *Callias* rather than a pale humanoid surface is good evidence that he does not endorse this latter (to my mind, less plausible) view.

It remains a further question, once we agree to this broad reading of perception, what our perceiving particulars like *Callias* might tell us about universals like “human being,” and how Aristotle could ever allow that such universals be grasped by an unsophisticated cognitive capacity we share with all animals.

¹²See Block (1960: 94), Hicks (1907: 360–64), Kahn (1992: 368–69), Miller (1999: 180–81), and Ross (1961: 271) for different views on which accidentals are not *actually* perceived. I am sympathetic to views on which accidental perceptibles are indeed *perceived* (as Aristotle indicates at *DA* II.6 418a24): views of the sort defended in Cashdollar (1973), Moss (2012: 39–40), Shields (2016: 227), or Sorabji (1992: 196–202).

¹³This seems one key source of concern for Anagnostopoulos (2009: 106n5), Barnes (1993: 266), Stein (2009: 32), and Taylor (1990: 128). See also Kahn (1992: 367ff), who takes the implausibility of such a derivation to motivate the thought that our noetic capacities must be involved at every stage in our cognitive development. It seems to me that Everson (1997: 227), Johansen (2012: 184), Moss (2012: 40) and Whiting (2002: 188) are right to stress that even if we must have *learned* that some humanoid creature was *Callias*, *Callias* is still perceived once the learning is in place. One might still worry that Aristotle does not say enough about this basic kind of learning—but I won't be considering this worry here, as it isn't addressed in *APo* II.19.

I'll now turn to a common interpretation of this remark, before suggesting an alternative that I think better fits our textual evidence and the philosophical context at play in *APo* II.19.

2 Universals & Perceptual Content

When discussing perception, Aristotle speaks both of the *things* or *objects* perception relates us to and of the *contents* of our perceptual experiences—on his usage, we can perceive some object x (*aisthēsis x*), and also perceive *that* something or other is the case (*aisthēsis hoti p*, where p is something that can be true or false). It's clear that Aristotle thinks these two sorts of perception are closely linked: when you perceive some x you can also be said to perceive *that x is F*, or at any rate to perceive *something* about x that can be assessed for truth.¹⁴

So one might think that when Aristotle tells us that we perceive particulars but have perceptions of universals, he is simply focusing on different *aspects* of our perceptions: perception puts us in touch with particular token entities, but we perceive *that* this or that token is of a certain *type*, and so types will have to feature in (what I'm calling) the propositional content of our perceptions. So for instance when you stare at the sunset you perceive a particular: *the sun*. But a universal nonetheless features in the content of your perception: you perceive that the sun is *red*. Thus on this reading of Aristotle's remark, your perception would be "of" the universal red, even though the object of your perception remains a particular—the sun.

The claim that universal types "feature" in the propositional content of some perceptual experience could be understood in different ways.¹⁵ On one reading, Aristotle would be telling us that:

(PCS) Perception is a conceptual state. To have a perception "of human being" is to recognize a human being *as such*, and this requires (at a minimum) the ability to *think* of human beings as entities of some kind and draw certain *inferences* about them.¹⁶

¹⁴This is not just the case for perception, but for cognitive states in general: to grasp x is to grasp some proposition (or some range of propositions) in which x will be a term. See Barnes (1993: 271), Kahn (1981: 393–95), or Modrak (1987: 164) for further discussion of this usage. In what follows I will refer to perceptual content as *propositional*, but this shouldn't be taken to imply that we *always* perceive something that can be assessed for truth *just as a proposition would*. It seems, for instance, that our perception of *per se* perceptibles (which Aristotle typically describes as infallible—cf. *DA* III.3 427b12, III.6 430b29, or *Sens* 442b4–9) can be true in a different sense (cf. *Met* Θ10 1051b17ff).

¹⁵There are of course more fine-grained ways of spelling out the view. But (PCS) and (PCC) should capture our main options.

¹⁶What exactly is required will depend on one's views concerning concept possession. Here we can take as a plausible minimal requirement for conceptual thought the generality constraint

Interpretations along these lines have been defended, but they seem to me inadequate for two reasons.¹⁷ First, I argued above that Aristotle’s argument in this passage relies on the thought that perception is a relatively basic capacity, which *all* animals possess (as Aristotle emphasizes at *APo* II.19 99b32-35). But animals cannot think or draw inferences. So (PCS) seems unlikely in this context. Even if Aristotle’s account were restricted to humans, part of the point of *APo* II.19 is to describe how we could ever come to develop the concepts at play in scientific demonstrations—assuming that they are already available to us in perception would simply be begging the question.

The second reason is that Aristotle explicitly says at *Met* A1 981a7-12 that thinking and drawing inferences (e.g. about diseases) in general terms is something distinctive of craft knowledge—a state we reach *after* perception, memory, and experience on our path towards scientific understanding. This strongly suggests that even states more advanced than perception would not require the ability to engage in conceptual thought of the sort (PCS) demands—and therefore *a fortiori* that perception itself would not require such an ability. If this is right we have good grounds for resisting interpretations that would make perception a conceptually demanding cognitive achievement.

It seems plausible, then, that perception in this context is meant to be a non-conceptual state: even perceivers without the universal concepts relevant to their observations might have perceptions “of” universals. So we might think that Aristotle is telling us instead that universals feature in the *contents* of our perceptions, in the following sense:

(PCC) Perception has conceptual content. To have a perception “of human being” is to be related to some proposition containing “human being” as one of its terms—e.g. the proposition *that Callias is a human being*. We can be so related even if we cannot articulate or understand the proposition and its terms: it’s sufficient that the propositional content *could* be understood using the universal concept “human being.”

On this interpretation, Aristotle would be telling us something about the content of our perceptions—in particular, that this content will contain universal types, even for a perceiving subject who cannot recognize them as such. Thus on (PCC) an infant might see an otter at the zoo, and have a perception “of otter” even though she hasn’t yet developed the concepts relevant to her observation. Once she develops her conceptual repertoire she might return to the zoo and perceive the otter *as such*—that is, she might perceive *that there is an otter*, and also be able

presented in Evans (1982: 100–105).

¹⁷Defenders of some form of (PCS) include Goldin (2013: 203), Kahn (1992: 368), and Taylor (1990: 127–28).

to *articulate* and *think* (and draw inferences) about what it is she perceives. But on this reading her perception was “of otter” even before this: the universal “otter” was encoded in the content of her perception before she acquired the concepts that would enable her to articulate and think about what she perceived.¹⁸

I think the idea that perception has conceptual, universalizable content captures an important part of Aristotle’s treatment of perception. If his remarks about the many, complex things we perceive are a good guide, it’s plain that the contents of Aristotelian perceptions are quite rich, and that their expression will require type-level terms (whether or not a perceiver recognizes this). Indeed this seems true for even the most basic forms of perception: Aristotle tells us that when perceiving a color we have a perception—an *infallible* perception—that something is colored, or at least some particular color (*hoti chrōma*, *DA* II.6 418a15). Quite apart from Aristotle’s usage, it seems odd to think he would deny this.¹⁹ For that would imply that our perceptual experiences are not only particular, but moreover such that they simply could not be expressed in universal, type-level terms. Some contemporary philosophers do think that perceptual contents resist conceptual description, but it’s hard to see what alternative view Aristotle could have been arguing against here. I therefore think we should endorse the view that perception has universal content in the sense articulated by (PCC), that is, content that *could* be expressed in general terms.

It’s a further claim, however, that this is what Aristotle means when he tells us that perception is “of universals.” I think there are good textual grounds to resist this further claim, which I will discuss in our next section. But note, as a preliminary reason for doubt, that (PCS) and (PCC) tell us very little about how a subject would be perceptually related to universals. On (PCS), a perceiving subject would already have to have certain conceptual resources to perceive universals at all. On (PCC), the content of our perceptions would be something we *might* understand in universal terms—but that explains little about the *actual* relation a perceiving subject would bear to the universals her perceptions are “of.” Neither view, moreover, accounts for the fact that we perceive universal causes, specifically—that the universals our perceptions are of are not just any type whatsoever, but rather the very ones that “make a stand” in our soul, and which we might go on to understand scientifically. This focus on *explanatory* universals is in fact a point of emphasis in Aristotle’s discussion of particular and universal states in *APo* I.31, to which I now turn.

¹⁸On this way of speaking about content, her conceptual development changes her *relation* to the content of her perception, but not the content itself: she perceived *that there is an otter* both before and after she developed the conceptual tools necessary to articulate what she perceived. See Bronstein (2016: 245), Modrak (1987: 168), or Moss (2012: 154) for views in this direction.

¹⁹As Irwin is right to point out (1988: 320–1).

3 Particularity & Universality in *APo* I.31

Both (PCS) and (PCC) share a common assumption. The common assumption is that Aristotle's remark concerns the *logical status* of certain perceptible entities. Specifically, Aristotle would be telling us that we necessarily perceive, of some token x , *that x is F* , for some type F . The two interpretations differ on what it takes to perceive this, but on this much they agree: to say we perceive particulars is to say we perceive *tokens* (things that are *not* "predicated of many things") and to say our perceptions are of universals is to say they are perceptions of *types* (things that *are* "predicated of many things," cf. *De Int* 17a38-40).

But this assumption does not sit well with Aristotle's discussion in *APo* I.31—the only other text in the corpus that explicitly mentions perception's particular and universal aspects. Consider how perception is distinguished from scientific understanding:

[2] You can't understand anything through perception. For even if perception is of what is such-and-such and not of what is this so-and-so, you must still perceive a this so-and-so at a place and at a time. It's impossible to perceive what's universal and in every case, for that's not a this at a certain time ([if it were] it wouldn't be a *universal*, since we call universal what's always and everywhere). Thus since demonstrations are universal and universals impossible to perceive, it's clear it isn't possible to understand anything through perception. (*APo* I.31 87b28-35)

Aristotle begins his argument here by echoing the thought voiced in passage [1], namely, that perception is "of what is such-and-such," but that we nonetheless perceive "a this so-and-so" at some definite time and place.²⁰

So the fact that we always perceive "a this so-and-so" (i.e. that we perceive *particulars*) is supposed to disqualify the things we perceive from being universals, since, as Aristotle puts it, universals exist "always and everywhere." Now Aristotle cannot mean by this that universals exist *independently* of their perishable instances, or that universals are somehow *always* instantiated. After all, think of the universal "eclipse," which Aristotle treats as a paradigmatic object of scientific understanding. We can *understand* eclipses even if they don't in fact occur always and everywhere.²¹ Thus his point here is not that universals are literally "always

²⁰I'm assuming here that Aristotle is using "what is such-and-such" (*to toionde*) to denote universals and "this so-and-so" (*tode ti*) to denote particulars. This isn't always the case, but in this context it's clearly what Aristotle has in mind: in this passage already he freely moves from "what is such-and-such" to *universal*, and later in *APo* I.31 he names *particulars* (*kath' hekaston*) as objects of perception (87b38; cf. also 88a4).

²¹Note also that Aristotle thinks some *token* entities are eternal and unchanging, like the sun—in fact *ouranos* is even characterized as a token entity that's eternal and unchanging and *everywhere*

and everywhere,” but rather that we can only understand phenomena that are *eternally recurring*, and that scientific demonstrations primarily explain general, unchanging facts about these eternally-recurring phenomena. This is a point familiar from *APo* I.8, where Aristotle argues that we cannot demonstrate facts about perishable entities, because “nothing holds of them universally, but only at some time and in some way” (75b24-26).

Thus it’s not because we only perceive *tokens* that it’s impossible to perceive universals. The reason we can’t perceive universals is that our perception is always tied to a specific time and place, and that it therefore can’t tell us about universals *universally*, that is, *as* the sorts of entities that might explain a range of eternally-recurring phenomena. In other words, Aristotle’s argument in [2] isn’t based on the logical status of the sorts of things we perceive or understand, but rather on the *manner* perception and understanding put us in touch with their objects: perception only tells us about things *as they are here and now*, understanding about things *as they are always and everywhere*.

This point is vividly brought out by the subsequent discussion of perception’s limitations:

[3] Rather, it’s plain that even if it *were* possible to perceive that triangles have angles equal to two right angles, we’d seek a demonstration, and not, as some say, already understand it. For we must perceive particulars, but understanding is by knowing the universal. (*APo* I.31 87b35-39)

In this passage, Aristotle is asking us to suppose that we could perceive that triangles have angles equal to two right angles (henceforth: “2R”), and noting that even this wouldn’t yield the kind of knowledge we have when we grasp a demonstration—and again, the reason invoked is that perception has particular objects, while understanding is reached by knowing universals.²²

It’s clear that in this counterfactual we’re meant to be perceiving a *general* fact about *all triangles*, and not a fact that concerns only some given triangle token. So passage [3] is good evidence that Aristotle can’t just be saying that our perception of triangles is particular because it only tells us about tokens and doesn’t tell us about *all* triangles, or because it doesn’t really relate us to the *type triangle*. For his thought here is that *even if* we perceived a general fact about all triangles, our

(*DC* I.9 278b3-7). So not all scientifically-relevant types are “always and everywhere,” and some things that *are* “always and everywhere” are not types. (See also *Met* Λ 3 1073b5-6.)

²²The point of the counterfactual here is not that it’s impossible to perceive triangles, and thus, *a fortiori*, impossible to perceive that triangles have 2R. For the assumption isn’t just that we can perceive triangles, but that we can perceive of triangles *that they have 2R*. And the thought is that even if we somehow perceived this, we still wouldn’t understand it. For we would still be perceiving particulars.

perception would still be the perception of particulars, and therefore wouldn't yield understanding on its own.

In this case too, Aristotle is best understood as making a point about the *manner* in which perception puts us in touch with its objects. The point is that merely *perceiving* that all triangles have 2R wouldn't tell us what the *connection* is between being a triangle and having 2R, and that understanding the universal triangle *as a universal* requires some grasp of this connection. This is consistent with his earlier remarks about universal knowledge:²³

[4] Even if you prove of every triangle, either by one or by different demonstrations, that each has 2R—separately of the equilateral and the scalene and the isosceles—you do not yet know of triangles that they have 2R, except in the sophistical way; nor do you know it of triangles universally (*kath' holou trigōnou*) not even if there are no triangles aside from these. For you do not know it of triangles as triangles, nor even of every triangle, except in number—not of every triangle according to the form [triangle], even if there is no triangle of which you do not know it. (*APo* I.5 74a25-32)

Thus even once we have a series of proofs establishing, for each species of triangle, that triangles of that species have 2R, we won't know that triangles have 2R *universally*. Universal knowledge is achieved only once we recognize that these species of triangles exhaust their genus, and understand that their belonging to this genus *explains* why they have 2R (i.e. understand that it's "according to the *form* triangle" that they have 2R).²⁴

In the counterfactual scenario we're being asked to consider in [3], then, perception (rather than a series of proofs) tells us that each and every triangle has 2R. But it doesn't tell us *that these are all the triangles*, and that it's precisely *because* they are triangles that they have 2R. And it therefore fails to yield knowledge of the *universal* triangle: it only tells us of the triangles we're *currently perceiving* that they have 2R, and it just happens to be the case that these are all the triangles there are. Thus perception fails to yield universal knowledge because perception is a capacity whose exercise depends on the presence of its objects—or, as Aristotle puts it in this context, because "we must perceive particulars."

APo I.31 is the only place outside [1] where Aristotle explicitly discusses perception's particular and universal aspects. So it's especially significant that in this chapter perception's particularity is tied to the *manner* in which it relates us to its objects, rather than the logical status of these perceived objects. When

²³Here I follow Barnes' reading of the manuscripts and slightly adapt his translation.

²⁴On the sense of universality at play here, see also *APo* I.4 73b26-32. In this case, what has to be shown is that it's *in virtue of being triangles* that triangles have 2R. Separate proofs might establish this for all instances of triangles, but not of triangles *qua triangle*, or of triangles *per se*. On this point see also Hasper and Yurdin (2014: 131–32).

Aristotle argues that we never perceive universals, he doesn't simply point out that we don't perceive general facts, or that we perceive tokens and not types—recall that on Aristotle's usage here we would be perceiving particulars *even if* we could perceive a general fact about triangles. Nor, when discussing our scientific understanding of universals, does he tell us that we only understand general, type-involving facts. Here too, his emphasis is on our grasping universals *universally*, in a manner sensitive to their explanatory role.

I think there are two related conclusions to draw from this evidence. The first is that the claim that we perceive particulars is not just the claim that we perceive tokens. It is, rather, a broader claim about the limitations of perception as a mode of apprehension, whatever its objects may be. Because its exercise is tied to present circumstances, perception cannot yield an understanding of the universal causal connections governing eternally-recurring phenomena—this is what makes it a particular capacity, and an appropriately basic starting-point for our cognitive development.²⁵

This shouldn't really be a surprising result. It's clear from Aristotle's psychological works that perception is supposed to be a capacity whose exercise is realized in a *material* process, when some perceptible object impinges on our sense-organs. Aristotle often identifies perceptible objects as those that occupy space and subsist in matter, and *infers* from this that we perceive particulars (see for instance *DC* I.7 275b5-11 and I.9 278a10-11, or *DA* III.4 429b10ff). He tells us at *DA* III.3 427b22-24 that we perceive particulars, and that this explains why perception is triggered by external objects, and thus why it isn't up to us to perceive whenever we wish. So it's natural to read the claim that we perceive particulars as closely connected to the *process* by which we perceive things: we perceive through a *material* process, which is necessarily always tied to some specific time and place, and therefore only perceive *particulars*, that is, only perceive things *as they appear to us at some time and place* (cf. also *Met* Z11 1036b33ff and Λ 3 1070a9ff).

The second conclusion is that the sort of universality attributed to cognitive states like understanding is tied to the role universals play as *explanations* for a range of eternally-recurring phenomena. On the way of speaking Aristotle adopts in passages like [2] and [3], perception cannot yield a grasp of universals because it cannot yield a grasp of universals *in their explanatory role*. This lends further support to the preliminary point raised above: the fact that types feature in perceptual contents, though correct as far as it goes, fails to capture the relevant aspect of Aristotle's conception of universality, at least as it plays out in these texts,

²⁵On some conceptions of the token/type distinction, it might *follow* from this that perceptual objects must be tokens. My claim is only that this is not what Aristotle intends in *APo* I.31. For more on Aristotle's conception of particulars, see Harte (2010).

which is that universals explain, and particulars do not. We would thus expect the universals our perceptions are “of” to be *explanatory* universals, specifically, and not just any type instantiated by some perceived token.

In what follows I’ll develop an interpretation of our perception of universals that does justice to these considerations. For now I hope to have established that Aristotle’s treatment of particular and universal states tells against the shared assumption motivating (PCS) and (PCC). Aristotle’s focus is not on the logical status of whatever terms feature in the contents of our perceptions. His focus is, rather, on the manner perception presents its objects to us: we perceive things as they are at some time and place, not as they are always and everywhere, and this is what distinguishes perception from *universal* states, which would enable us to explain why things are the way they appear to us to be.

4 Universal Causes and Perceptible Particulars

Aristotle makes it clear that perception alone won’t provide any theoretical understanding of universals—perception doesn’t yield any knowledge of the causal or explanatory relations between universals, or, as he puts it in *APo* I.31, any grasp of universals as they are “always and everywhere.” In what sense could perception be “of” such universals nonetheless? Aristotle never directly answers this question, but I think we can reconstruct a plausible view by considering his other descriptions of the relationship between universal and particular cognitive states.

Consider, for instance, how he distinguishes perception from thought in this passage in *DA* III.4:²⁶

We discriminate flesh and what it is to be flesh by different means. [...] It’s by means of our perceptual capacity [*tōi aisthētikōi*] that we discriminate hot and cold, and those things of which flesh is the account [*logos*]. But it’s by means of something else [i.e. by means of our capacity for rational thought] that we discriminate what it is to be flesh. (*DA* III.4 429b12-18)

Aristotle tells us here that we perceive hot and cold, and the qualities of which flesh is the “account,” but that this account itself—what it is to be flesh—must be grasped by some other, rational means. We are, in other words, perceptually responsive to the sensible qualities *caused* by certain formal features of flesh—we sense hot and cold the way we do because flesh is what it is. Psychological theorists might seek an account of what flesh is, and investigate its sensible effects. But even for those of us innocent of psychological theory, our perceptions of hot and cold, on any particular occasion, are what they are because flesh is structured

²⁶See also *DA* I.5 409b31ff.

the way it is (and our perceptual organs structured the way they are). This, on the view I will be spelling out below, is just what it is for our particular perceptions to be “of” the universal flesh: we do not perceive the universal itself, and need not understand it independently, but are nonetheless perceptually responsive to its effects—that is, to perceptible features explained by what flesh essentially is.

Now, Aristotle’s discussion of flesh doesn’t explicitly mention particulars or universals. But his treatment of experience and craft in *Met* A1 rests on a similar distinction between theoretical, thought-involving cognitive states and their non-theoretical counterparts—and there the states are picked out as having universal and particular objects, respectively. Here are the two key passages:²⁷

[5] To have a judgment that when Callias was ill of this disease this did him good, and similarly in the case of Socrates and in many particular cases, is a matter of experience; but to judge that it has done good to all persons of a certain constitution, marked off in one class, when they were ill of this disease, e.g. to phlegmatic or bilious people when burning with fever, this is a matter of craft. (*Met* A1 981a7-12)

[6] We think that knowledge and expertise belong to craft rather than experience, and we take those with craft-knowledge to be wiser than the experienced [...] because the former know the [universal] cause, but the latter do not. For the experienced know the “that” [i.e. the particulars, cf. 981b10-13] but don’t know why, while the others know the “why” and the cause. (*Met* A1 981a24-30)

So an experienced doctor would (*qua* experienced) know only how to deal with the patients and symptoms in front of her, at some determinate time and place—experience is a *particular* state, in the sense articulated above.²⁸ Someone with craft-knowledge of medicine, by contrast, would be able to reason (i.e. engage in *logos*-involving thought) about types of patients and treatments without reference to any particular case, and understand the universal *causes* underlying her practice. She would understand *why* certain kinds of patients should be treated some way, rather than merely recognizing *that* some treatment is called for in this or that case. She would thus know universals *universally*.

On Aristotle’s view, craft-knowledge of medicine emerges from experience: we begin with a practical, particular grasp of medicine, and eventually come to understand the universal causes underlying our practice. For instance, we

²⁷I adapt Ross’ translation.

²⁸This leaves open the possibility that experience is universal in content, in the sense that fully spelling out what an experienced doctor knows will require general claims about types of patients and treatments (*we* might describe their knowledge in general terms, even if they themselves are unable to articulate the general principles underlying their practice, being responsive only to the particular patients they face).

might identify some universal (“malarial”) present in all feverish phlegmatics, and recognize that this universal explains their symptoms and the effectiveness of certain treatments (so that the fact that some patients are *malarial* might be taken to explain the effectiveness of treating them with leeches). So there’s a close connection between the universal objects of craft-knowledge and the particular practice of those with experience: a craft treats theoretically and in explicit terms the explanatory structure that underpins the reliably successful practice of those with experience—just as, in Aristotle’s example later in the chapter, a master worker in some craft knows “the causes of things done” by manual laborers, who simply act as they do out of habit (*Met* A1 981a30-b6).²⁹

This contrast provides a helpful model on which to think of our perception of universals. For though he doesn’t make it explicit in [5] and [6], Aristotle often emphasizes that experience requires little more than our perceptive and associated mnemonic capacities: he tells us that experience arises out of “repeated memories of the same thing,” and, even more strongly, that “many memories constitute a single experience” (*Met* A1 980b28-a1; *APo* II.19 100a4-6).³⁰ Thus in our medical example, the experienced doctor is meant to be *perceptually* responsive to her patients, *seeing* them each as feverish, and such that they should be leeches. And in doing so she is perceptually responsive to features these patients have *in virtue* of being malarial—though she doesn’t know this, it’s *because* they have malaria that Socrates and Callias are feverish and cured by leeching. In general, someone with experience in some domain will be perceptually responsive to the features certain things have *because* they instantiate some universal—which is just to say (on the reading I’m suggesting here) that their experience results from their perceptions being perceptions “of” the universal in question.

Now, in the case under consideration, some sort of medical training was presumably necessary to form the relevant experience. The doctor’s perception is *trained* perception—the sort of perception Aristotle also takes to be at play in morally virtuous behavior (cf. *EN* VI.11 1143b13-14). But it’s clear that the required training is meant to be non-intellectual: it does not require our rational capacities or any understanding of universal causes. We can, after all, be trained to leech malarial patients without understanding *why* leeching is the right remedy,

²⁹A similar point is made at *Rhet* I.1 1354a1-11, where Aristotle argues that rhetoric must admit of systematic treatment. His evidence is that people obviously *practice* rhetoric, sometimes in skillful, successful ways, and so it must be possible “to study the cause through which those who succeed through habit or spontaneously [do so], [which] is the function of craft.”

³⁰So for instance many memories of some range of symptoms and corresponding treatments would constitute a single experience of some disease—and an experienced doctor would presumably rely on many such experiences. For more on the way an experienced subject might internalize a range of connected memories, see Gregorić and Grgić (2006: 9–10).

just as, Aristotle tells us, children can learn to distinguish their fathers from other men without yet learning the *definition* of “father,” or understanding what *makes* a father a father (*Phys* I.1 184b12-14). It’s therefore a kind of perceptual responsiveness we could plausibly ascribe to less sophisticated animals (as Aristotle suggests; *Met* A1 980b26-7). Thus a lion perceiving a buffalo might perceive it as something to be hunted, to be avoided when in groups, and so on. As with our experienced doctor, it would perceive the buffalo this way *because* the buffalo is a certain kind of animal, though of course a lion couldn’t recognize that this is the case.³¹

In cases of this sort, then, a subject perceives some particular *x* (something as it appears to them *here and now*), but there is some universal *Y* such that their behavior is responsive to features *x* has in virtue of being a *Y*. This, I suggest, is just what it means for the subject’s perception to be *of* the universal in question. So to say that a lion has a perception *of* the universal “buffalo,” on this reading, is just to say that the lion’s behavior is responsive to a range of features the buffalo displays *qua* buffalo. To say that an experienced doctor has a perception *of* the universal “malarial” is just to say that the doctor’s behavior is responsive to a range of features her malarial patients display *qua* malarial. Our perceptions are of universals when we are perceptually responsive to the features or phenomena these universals explain.

This kind of responsiveness is something Aristotle often emphasizes when discussing perception’s role in animal behavior. Here’s a representative passage:³²

³¹One might object that responding to our environment in these ways must require more than mere perception. On a common interpretive line, it’s not just perception that allows us to be responsive in the ways just described, but our capacity to perceive augmented by *phantasia*—either because *phantasia* allows us to *represent* what we perceive *as* things to be pursued or avoided (cf. Nussbaum (1978: 221–269)), or because *phantasia* enables us to imagine prospective courses of action (cf. Lorenz (2006: 148–173)). I am sympathetic to this sort of view, and I think perception, on the broad sense at play here, might well include the operation of *phantasia*. This would not threaten Aristotle’s general point, for he makes it clear that perception and *phantasia* share the same objects (*DA* III.3 428b10ff), and that the *phantastikon* and *aisthētikon* parts of our soul are the same, and to be distinguished from parts of our soul responsible for intellectual thought (cf. *Insomn* 458a33-b2 and 459a8ff). So even if we take *phantasia* to play some role in soliciting behavioral responses on our part, it remains the case that it’s *the perceptive part of our soul* that enables us to do so, rather than its intellectual counterpart, and that this perceptive part responds to *particular situations* rather than thinking in general about how and why we should act some way—or how and why things appear to us the way they do. Thanks to an anonymous reviewer for pressing this point.

³²The translation here is partly based on Beare’s. See also *DA* III.12 434b16-18 and *EN* III.10 1118a18-23 on the pursuit and avoidance of food in animals, *DA* II.2 413b23-24, III.7 431a8-11, III.9 433a27ff, III.13 435b19-24, and *PA* II.17 661a6-8 on our appetites and the perception of pleasurable things, and *MA* 701a34-36 and 702a15-19 on animal locomotion, desire, and perception. In general, see Moss (2012: 30–40) for an extensive treatment of our perception of things as “to be pursued.”

[7] The non-contact senses—i.e. smelling and hearing and seeing—belong to all self-moving animals. In all these animals they are present for the sake of their preservation: based on past perceptions they pursue their food and shun things that are bad or destructive. But in animals who also have intelligence (*phronēsis*) they are present for the sake of their well-being: they report many distinctive qualities of things, from which both theoretical and practical wisdom is generated in the soul. (*Sens* 436b18-437a3)

Perception is a means of preservation, then, because it tells us what's to be pursued or avoided. In animals equipped with more advanced cognitive capacities it's also the basis for more advanced forms of knowledge: we humans perceive not just for the sake of our survival, but in a way that allows us to develop practical and theoretical knowledge. Perception provides this basis (I suggest) not by delivering a theoretical or conceptual grasp of universals from the start, but rather by conveying the many “distinctive qualities” things around us have *in virtue* of instantiating various universals—and doing so in a way that solicits a certain set of behaviors on our part, and thus allows us to develop *experience* about them, and eventually come to understand the relevant universals *as causes*.

Our perception is “of universals,” then, because we are naturally constituted so as to be perceptually responsive to the effects of certain universal forms—in ways that allow for the development of the sort of experience described above. The fact that our perception is of universals explains how we can develop any such experience on the basis of our perceptions: if there were no universal causes in virtue of which things reliably appeared to us the way we perceive them to, we would never form the coherent sort of practice typified by the experienced doctor described in *Met* A1. The first steps of our epistemic development would therefore not be possible were it not for our perception of universals—and so neither would the universal “stand,” as Aristotle indicates in [1].

So when perceiving Callias, to return to our main example, we might perceive Callias as someone to have a conversation with, to be treated as a living being, capable of a range of virtuous activities, and so on.³³ If Callias appears to us this way *because* he is human, our perception will be a perception of the universal human being. And it will be a perception of the universal human being even though its object is Callias as he appears to us here and now—that is, even though what we perceive is the *particular* Callias. By perceiving Callias and other human beings we might develop *experience* of the universal “human being,” that is, develop a grasp of human behavior that informs how we deal with the various humans we encounter, but doesn't require us to *reason* about them *as human*

³³Aristotle never makes it clear exactly what our knowledge of the universal “human being” would serve to explain—but presumably the explananda would include some set of distinctively human behaviors and capacities.

beings, or even to think of humans apart from the ones we face at some particular time and place.

If this is right, Aristotle’s remark extends a familiar point about perception’s teleological role. It’s widely acknowledged (and made explicit in [7] and at *DA* III.13 435b19-24) that perception serves the good or well-being (*to eu*) of the creature in which it is present. This must mean, at a minimum, that perception tells us what to pursue and avoid for the sake of our survival. But in human creatures the point goes further: perception tells us about the world in a way that would allow us to *understand* it, by developing a perceptually-based form of practical experience from which a theoretical grasp of universal causes—our *telos* as rational creatures—might emerge. It does so by enabling us to respond to the features caused by these universals in a manner that coherently solicits some behavior on our part. Perception can do this without engaging in any *logos*-involving thought, and despite always depending for its exercise on the presence of its objects. It thus remains an appropriately basic starting-point for our epistemic development, as Aristotle’s rejection of innatism requires.

5 Conclusion

Recall the two puzzles driving this paper: can perception be basic if it involves universals? And what does it mean for our perception to be “of” universals in the first place—what *relation* do we bear to the universal “human being” when we perceive Callias or Socrates?

On the interpretation I’ve defended, perception can indeed be basic and involve universals. For perception’s *particularity* is what makes it basic, and perception’s particularity, as I understand it, doesn’t conflict with our perception of universals: we perceive things as they are at some time and place, and universals determine some of the features to which we’re perceptually responsive at that time and place—and at other times and places.

We are thus related to the universals our perceptions are “of” by being related to their effects. Perception allows us to discriminate the many features particulars possess, and respond to the many different ways they appear to us in different situations. In animals who can remember things, repeated perceptions of some type can develop into a certain kind of productive or practical skill—for instance, in the human case, the skill someone with medical experience has to leech people. Perception’s being “of universals” explains this part of our cognitive development by explaining how perception can yield such experience: some things regularly appear to us some way *because* they belong to some universal, and this (together with our mnemonic capacities) explains how it might be possible for us to become *reliably* responsive to perceptions of some given type. Understood this way, and

granting some of Aristotle's background teleological assumptions, our perception of universals provides a plausible explanation of what perception might contribute to our learning, and how certain universal causes might come to make a "stand" in our souls.

To say this much still leaves open a range of questions about our perceptual responsiveness to universals. For instance, we might still want to know how we come to grasp universals *as universal causes* on the basis of our experience. And we might wonder about the nature of the non-intellectual training involved in developing such experience in the first place: how exactly does perception become "trained" perception, and how should we understand the difference between novice and trained perception? Such questions become central for later Hellenistic epistemology, and in particular for Stoic treatments of the relationship between our perceptual impressions, concepts, and beliefs.³⁴ Allowing for the perception of universals, as I see it, is a first step towards these broader debates about the interplay between our rational and non-rational cognitive lives—many of which are, in some form or another, still with us today.³⁵

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³⁴On which see Shogry (2018).

³⁵Many thanks to Patricia Marechal and Ben Morison, who commented on an early draft of this paper, and to audiences at Boston University and at the 37th Annual Ancient Philosophy Workshop at Temple University and the University of Pennsylvania. Many thanks also to Sukaina Hirji, Robert Howton, Dhananjay Jagannathan, Katy Meadows, and Evan Rodriguez, who helped me think through a number of these ideas. Finally, I am grateful to two anonymous reviewers for this journal, whose suggestions led to numerous improvements.

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