

The aporia of ἡ ἐκ παντὸς in *Posterior Analytics* II.19

ADAM CRAGER

<https://orcid.org/0000-0003-2452-512X>

University of California, Los Angeles

Department of Philosophy

Los Angeles, CA

USA

acrager@humnet.ucla.edu

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Abstract: This article sketches, and works to motivate, a controversial approach to *Posterior Analytics* II.19. But its primary goal is to recommend a novel solution to one

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particular interpretive aporia that's especially vexed recent scholars working on *Post. An.* II.19. The aporia concerns how to understand the enigmatic $\bar{e} ek pantos...$ (\approx "or from all...") in the genealogical account of foundational knowledge at II.19 100a3-9. Our proposed solution to the aporia is discussed in connection with a number of larger philosophical issues concerning Aristotle's theory of *epistēmē*.

1 Introduction

For better or worse, *Post. An.* II.19 is today the most widely studied chapter in the whole of Aristotle's *Posterior Analytics*. The present article sketches, and works to motivate, a controversial approach to *Post. An.* II.19. Our primary goal, however, is to recommend a novel solution to one particular interpretive aporia that's especially vexed recent scholars working on *Post. An.* II.19.

The aporia in question concerns how to understand the enigmatic $\bar{e} ek pantos...$ (\approx "or from all...") that we read at 100a6 when we study the genealogical account of foundational knowledge at II.19 100a3-9. The philosophical interpretation of 100a3-9 is, of course, highly controversial. And many competing readings of 100a3-9 in particular—and *Post. An.* II.19 in general—turn on how one responds to this aporia about how to interpret 100a6's $\bar{e} ek pantos$. The solution proposed below doesn't seem to have been elsewhere discussed. But it strikes me as significantly more attractive than any alternative solution to the aporia I'm aware of.

We'll be turning to 100a3-9 and the aporia of $\bar{e} ek pantos$ soon, in Sections 3-5 below. But I begin with some preliminary remarks about *Post. An.* II.19 as a unit and how 100a3-9 is embedded within it.

2 The context, structure, and philosophical goals of *Post. An. II.19*

Post. An. II.19 is the concluding chapter of (what we now call) the *Posterior Analytics*. But it must also be emphasized that *Post. An. II.19* characterizes itself as the concluding chapter of the *Analytics* as a whole.¹

The unifying aim of Aristotle's "two" *Analytics* (i.e. *Prior* plus *Posterior*) is to elaborate and defend an account of a particular type of knowledge which Aristotle calls **demonstrative episteme** [*epistēmē apodeiktikē*].² To **have episteme** [*epistasthai*]³—in the techni-

¹With *Post. An. II.19* 99b15-19 cf. esp. *Pr. An. I.1* 24a10-11, I.4 25b27-31.

²A comment about my rendering of Aristotle's epistemic vocabulary is in order. In the *Analytics*, the Greek noun *epistēmē* almost always functions as a technical term naming a quite specific variety of high-grade knowledge that English doesn't have a name for. Here, as in other writings, I introduce the new English noun 'episteme' as stand in for *epistēmē* in the technical sense at issue in Aristotle's *Analytics*. (Note, however, that I always use adjectives like 'epistemic' and 'epistemological' in the ordinary sense of contemporary philosophical English: e.g. 'epistemic' ≈ 'of or related to justificational/knowledge phenomena [of some kind]', not 'of or related to episteme [specifically]'). The word 'knowledge', of course, is an etymological relative of the Greek noun *gnōsis*—and not *epistēmē*. The semantic range of 'knowledge' in ordinary English is fairly close that of *gnōsis* in the Greek of our period; and Aristotle never assigns to *gnōsis* (as he does to *epistēmē*) any kind of special technical sense beyond its everyday linguistic meaning. Thus, e.g.: *episteme*, *nous*, *technē*, and *phronēsis* are all (according to Aristotle) types of *gnōsis*; he thinks knowing what 'triangle' signifies is *gnōsis*; he thinks (human and non-human) animals can have *gnōsis* through exercising their perceptual faculties; he thinks that an experienced person, qua experienced, has *gnōsis* that an unexperienced person lacks. For these and other reasons, I deploy 'knowledge' to translate occurrences of *gnōsis* in Aristotle and render its verbal/adjectival correlates accordingly: *gignōskein* as 'know', *gnōstos* as 'known'. In the *Analytics*, Aristotle tends to use (i) the verbs *gignōskein* and *eidenai*, as well as (ii) the adjectives *gnōstos* and *gnōrimos*, as freely exchangeable synonyms. So I also employ 'known' to translate *gnōrimos* and 'know' to trans-

cal sense at issue in the *Analytiks*—is to have a rationally unshakeable, perfected knowledge of why some inexorable aspect of reality is in fact as it is and cannot be otherwise (*Post. An.* I.2 71b9-12, cf. 72b2-3). To possess **demonstrative** [*apodeiktikē*] **episteme** of (some particular *epistēton*) *X* is to have episteme of this *X* exactly in virtue of one's understanding—and assenting to the premises of—a demonstration that, through proving its conclusion, fully accounts for *X* in terms of prior causes. A **demonstration** [*apodeixis*], in this context, is much more than a valid argument (cf. *Post. An.* I.2 71b16-72a8): it's a syllogistic-proof [*sullogismos*] of a truth *T* which fully explains why *T* is the case by deriving it from starting-points that are, *by nature*, (i) explanatorily primitive in themselves and (ii) explanatorily prior to *T*. These demonstrative starting-points, for Aristotle, are *real* explanatory primitives that prior causes fail to account for; in effect, they are the ultimate whys from which demonstrations demonstrate. Aristotle himself calls them the **foundations** [*archai*] **of demonstrations** (cf. I.2 72a7-8). Since such *archai* aren't themselves fully accounted for by prior causes, Aristotle contends that demonstrative episteme of a demonstrative foundation is impossible in principle. But since demonstrative episteme of *X* is always based on one's assent to a corresponding demonstration's premises, Aristotle also insists that knowing demonstrative foundations is foundational for demonstrative episteme.

Aristotle's psychological works discuss episteme from the perspective of a theory of soul; his ethical works discuss episteme from the perspective of a theory of virtue and the human good. The distinctive strategy of Aristotle's *Analytiks* is to account for episteme from the perspective of a theory of *logoi*. I myself (see

late *eidenai* as well as instances of *gnōrizein* where it functions as a synonym for *gignōskein*.

below) take this investigative approach to stand behind the 99b17 words *t'auton gar esti* (“for they’re the same”) in the opening sentence of *Post. An. II.19*. But be this as it may, it’s time for us to turn to the text of *II.19* itself. The chapter’s elegant opening (99b15-19) can be translated³ as follows⁴:

And so, regarding **sylogistic-proof** and **demonstration**—what each of them is and how each comes to be—these things [are now] clear; also, regarding **demonstrative episteme**—[what it is and how it comes to be]—at the same time this [is now] clear. For, they’re the same [i.e. the latter illumination is the same as the former one].⁵ But regarding **the foundations** [*archai*]—(Q1) how they come to be known, and (Q2) what is the state of knowing [them]—from

³ Unless otherwise noted: (i) the translations I print are my own, (ii) the Greek text my *Analytiks* translations translate is that of Ross’ 1949 edition. Ross’ text for *Post. An. II.19* is primarily based on the testimony of four 9-11th cent. Byzantine *Post. An.* manuscripts—sigla: A, B, d, n. Subsequent research has shown there to be significant extant text-witnesses for the *Post. An.* that Ross failed to exploit. Here I’ll be making additional use of the following “direct” *Post. An.* text-witnesses:

D = Par. gr. 1843 (12-13th cent. *Post. An.* MS)

V = Barb. gr. 87 (9-10th cent. *Post. An.* MS)

G = Guelf. 24 Gud. graec. (12-13th cent. *Post. An.* MS)

All three manuscripts are digitized and can be accessed online via the relevant library websites.

⁴ περὶ μὲν οὖν συλλογισμοῦ καὶ ἀποδείξεως, τί τε ἐκάτερον ἐστὶ καὶ πῶς γίνεται, φανερόν, ἅμα δὲ καὶ περὶ ἐπιστήμης ἀποδεικτικῆς· ταῦτόν γάρ ἐστιν. περὶ δὲ τῶν ἀρχῶν, πῶς τε γίνονται γνωρῆμοι καὶ τίς ἡ γνωρίζουσα ἕξις, ἐντεῦθεν ἐστὶ δῆλον προαπορήσασαι πρῶτον.

⁵ The illumination is the same because the philosophical strategy of the *Analytiks* is to illuminate *epistēmē apodeiktikē* by illuminating *apodeixis*. 99b17’s *t'auton gar esti* (‘for they’re the same’) can’t be saying, because Aristotle doesn’t think, that *apodeixis* and *epistēmē apodeiktikē* are the same: see, e.g., *Post. An. I.4* 73a23-4, *I.2* 71b16-23.

where we are [*enteuthen*] these things are⁶ manifest to those who have first gone through the aporiai. (*Post. An.* II.19 99b15-19)

The *Analytics* proposes to investigate demonstrative episteme by investigating demonstration and to investigate demonstration by investigating syllogistic-proof [*sullogismos*] (cf. *Pr. An.* I.1 24a10-11, I.4 25b27-31). *Post. An.* II.19 opens with the announcement that this investigative programme has reached a philosophically successful conclusion and proceeds to articulate a pair of questions about foundations: (Q1) and (Q2).

The ‘foundations’ [*archai*] whose knowledge is at issue in questions (Q1) and (Q2) are foundations of a demonstration: i.e. demonstrative starting-points in the sense rehearsed above (*archai apodeixeōs*). In asking how the foundations of a demonstration become ‘known’ [*gnōrimoi*], (Q1) is specifically asking how animals like us come to know such objects if/when we do come to know them and achieve the “state of knowing” [*hē gnōrizousa hexis*] mentioned in (Q2).⁷ To be in the “state of knowing” mentioned in (Q2) is

⁶ Reading the lectio *difficilior est* (‘is’/‘are’) with A, B, d, D, V, G, Themistius, Bekker, Waitz where Ross prints *estai* (‘will be’) which is attested by n alone. Translating—and perhaps over-translating—Ross’ text, Barnes renders 99b18-19 (1993 ed. p. 72, my emphasis): ‘[the truth regarding (Q1) and (Q2)] this **will be plain from what follows** [*enteuthen estai delon*], when we have first set out the puzzles [*proaporēsasi prōton*]’. I take 99b18-19 to be making a weaker claim than that which Barnes’ translation seems to suggest. Prima facie, Barnes’ construal of *enteuthen* might seem more linguistically likely than mine; but I think my alternative philosophically superior given the actual discussion the remainder of *Post. An.* II.19 contains.

⁷*Post. An.* displays an especially strong preference for *gnōrimos* over *gnōstos*, using *gnōstos* at 82b38 but nowhere else. I take it that articulating (Q2), Aristotle is using the verb *gnōrizein* as a synonym for *gignōskein/eidenai*; I take it that he prefers *gnōrizein* over *gignōskein/eidenai* in articulating (Q2) because the verbal correlative of *gnōrimos* is *gnōrizein* and he’s just used *gnōrimos* in articulating (Q1).

to know the foundations of some demonstration. More specifically, as II.19 later puts it, the type of knowledge at issue in **(Q2)** is a knowledge of *archai* (i.e. *archai apodeixeōs*) that, qua knowledge, is **itself an archē** (an *archē epistēmēs*) because it furnishes the ultimate basis [*archē*] on which episteme of some *X* is founded (100b9-16). In the language of *Post. An. I.2* (cf. esp. *Top. VI.4* 142a9-11), question **(Q2)** asks us to identify the kind of knowledge that's prior to demonstrative episteme "by nature" (in the order of reasons and causes); question **(Q1)** inquires of the knowledge that's prior to demonstrative episteme "for us" (in the temporal order of human learning).

So, the opening lines of *Post. An. II.19* articulate a pair of questions; and these questions ask

Regarding the foundations $F(D)$ of an arbitrary demonstration D :

(Q1) How do we come to know $F(D)$?

(Q2) What kind of knowledge is the knowledge of $F(D)$ which grounds demonstrative episteme secured though D ?

These questions' level of generality bears emphasis. For the responses to **(Q1)** and **(Q2)** which *Post. An. II.19* presents are supposed to hold for *any* value of D . But from Aristotle's perspective, what D demonstrates could be a *theorem of mathematics*, a *theorem of physics*, or a *theorem of metaphysics*.⁸

Whatever else it might be, *Post. An. II.19* is centrally some kind of attempt to address questions **(Q1)** and **(Q2)**. The chapter's opening lines (99b15-19) present it as such. And these same remarks mani-

⁸I submit that one reason why II.19's replies to **(Q1)** and **(Q2)** are highly abstract is that Aristotle is abstracting away from (what he himself takes to be) significant differences between the epistemology of foundational knowledge in mathematics, physics, and metaphysics.

festly imply that the *Analytics*' preceding chapters do not suffice for philosophical clarity about (Q1) and (Q2). Emphasizing this latter point, Brunschwig has argued that students of the *Post. An.* shouldn't suppose "que le problème de la connaissance des principes a été traité avant son ouverture officielle au début du chapitre II.19" (1981, p. 96). However, the *Analytics*' preceding chapters have in fact given extensive attention to many substantive issues concerning demonstrative foundations and their epistemology. Moreover, before "officially introducing" (Q1) and (Q2), II.19's opening sentence asserts that philosophical clarity regarding the nature and coming to be of **demonstrative episteme** has *already* been achieved (99b15-17). In connection with this assertion, I think the indicative mood of (Q1) and (Q2) is important to appreciate. As raised in *Post. An.* II.19, questions (Q1) and (Q2) *presuppose* demonstrative foundations exist and *presuppose* that demonstrative foundations—though impossible to demonstrate—are nonetheless capable of being known with a kind of knowledge that suffices to ground genuine episteme. I submit that Aristotle took himself to be entitled to these presuppositions in *Post. An.* II.19 because earlier chapters of the work argue for these claims at length.⁹ *Post. An.* II.19 is not—as it's sometimes assumed to be—an obscure and philologically underwhelming attempt to *defend* the claim that the indemonstrable foundations of demonstrations are knowable by a knowledge which

⁹On my own reading of the *Post. An.*, the core of Aristotle's case for the former presupposition (= that demonstrative foundations exist) is provided by *Post. An.* I.19-22 while the core of his case for the latter presupposition (= that demonstrative foundations can be known with the relevant type of knowledge) is provided by *Post. An.* II.1-10. I elaborate and defend this controversial interpretation of the text in my "Aristotle's Finest Theorem and the Project of his *Analytics*" (draft available on request).

sufficies to ground episteme.¹⁰

I further submit (NB note 6 above) that the opening lines of *Post. An. II.19* shouldn't be read as ambitiously promising a philosophically sufficient account of the complete truth concerning (Q1) and (Q2). For, 99b15-19 needn't be so read; moreover, it must be admitted—and Aristotle couldn't possibly have been unaware—that II.19 leaves its reader with quite a few more philosophical puzzles about (Q1) and (Q2) than it adequately resolves. But be this as it may, what the opening of *Post. An. II.19* most precisely tells us (99b18-19) is that to achieve philosophical clarity regarding how to answer (Q1) and (Q2), we must first work through certain aporiai [*proaporēsasi prōton*]. And this said, Aristotle immediately (99b20-30) proceeds to lay out two such aporiai:¹¹

Now, it's previously been said¹² that having episteme through a demonstration is impossible if one doesn't know the primitive unmediated¹³ foundations. But regarding the [requisite] knowledge of the un-

¹⁰For scholarly endorsements of the assumption about II.19 I'm *rejecting* here see, e.g., Smith (1986, p. 55) and Tuominen (2010, p. 115).

¹¹ὅτι μὲν οὖν οὐκ ἐνδέχεται ἐπίστασθαι δι' ἀποδείξεως μὴ γινώσκοντι τὰς πρώτας ἀρχὰς τὰς ἀμέσους, εἴρηται πρότερον. τῶν δ' ἀμέσων τὴν γνῶσιν, καὶ πρότερον ἢ αὐτὴ ἐστὶν ἢ οὐχ ἢ αὐτῇ, διαφορήσειεν ἂν τις, καὶ πρότερον ἐπιστήμη ἑκατέρου ἢ οὐ, ἢ τοῦ μὲν ἐπιστήμη τοῦ δ' ἕτερόν τι γένος, καὶ πρότερον οὐκ ἐνοῦσαι αἰ ἕξεις ἐγγίνονται ἢ ἐνοῦσαι λελήθασιν. εἰ μὲν δὴ ἔχομεν αὐτάς, ἄπορον συμβαίνει γὰρ ἀκριβεστέρας ἔχοντας γνῶσεις ἀποδείξεως λανθάνειν. εἰ δὲ λαμβάνομεν μὴ ἔχοντες πρότερον, πῶς ἂν γνωρίζομεν καὶ μανθάνομεν ἐκ μὴ προὔπαρχούσης γνώσεως· ἀδύνατον γάρ, ὥσπερ καὶ ἐπὶ τῆς ἀποδείξεως ἐλέγομεν.

¹²The apparent back reference looks to be *Post. An. I.2 72a25 ff.*

¹³Here, as in more than a few other *Post. An.* passages, the adjective *amesos* ('unmediated', 'lacking a middle [*meson*]') is basically a synonym of *anapodeiktikos* ('indemonstrable', 'lacking a demonstration [*apodeixis*]').

mediated [foundations of a demonstration], one might press the aporiai [*diaporēseien*]:

(a2) Is it the same—or not the same—[kind of] knowledge? I mean [*kai*]: Is episteme [the knowledge] of each [i.e. *not only* what's demonstrable *but also* indemonstrable foundations]? Or not?—Is there rather episteme of the one [i.e. what's demonstrable] and another kind of knowledge of the other [i.e. indemonstrable foundations]?

(a1) Are the[se foundation-knowing] states engendered [in us] without [always already] existing within [us]? Or, [always already] existing within, do they go unnoticed? On the one hand it'd be strange if we [always already] have these [states of knowledge]—for this means our having of knowledges more exacting than demonstration isn't noticed. On the other hand, if we acquire [these states of knowledge]—being previously without them—how could we get this knowledge and learn it from non-prior knowledge? For this is impossible (as we were also saying concerning demonstration). (*Post. An.* II.19 99b20-30)

The remainder of *Post. An.* II.19 is generally agreed to consist of two discourses: 99b30-100b5 and 100b5-17. Rounding out II.19's stylistically pleasant double chiasmus,¹⁴ 99b30-100b5 address aporia (a1) and ques-

¹⁴That Aristotle structured II.19 so that its train of thought would weave an elegant ABBA ABBA pattern is easy to see:

A: What are syllogism and demonstration? (99b15-16)

B: How do syllogism and demonstration come to be? (99b16)

B: How do the foundations of demonstration come to be known? [= question (Q1)] (99b17-18)

A: What is the knowledge that knows these foundations? [= question (Q2)] (99b18)

A: An aporia that picks up on (Q2) is set out [= aporia (a2)]

tion (**Q1**) while 100b5-17 addresses aporia (**a2**) and question (**Q2**).

In the philosophical practice of Aristotle, the work of discovering, developing, and solving the relevant aporiai plays a central role. An aporia, in this context, is any *outstanding problem* or *unresolved philosophical disagreement* that stands in the way of philosophical progress in the investigation at hand.¹⁵ The language (99b19, 99b23) with which *Post. An.* II.19 introduces (**a1**) and (**a2**) invites us to view (**a1**) and (**a2**) as aporiai in this sense—as aporiai the *Analyt-ics*' preceding chapters do not solve, as aporiai that (qua unsolved) impede us from giving philosophically adequate answers to questions (**Q1**) and (**Q2**).

As I myself read II.19, the unit 99b30-100b5 works towards progress on (**Q1**) by sketching (what Aristotle takes to be) the truth concerning (**a1**); the unit 100b5-17 works towards progress on (**Q2**) by sketching (what Aristotle takes to be) the truth concerning (**a2**). I submit, in other words, (i) that *in the first instance* 99b30-100b5 and 100b5-17 set out views which respond to (**a1**) and (**a2**) respectively, and (ii) that Aristotle's goal in so doing is to draw out what the truth concerning (**a1**) and (**a2**) teaches us about (**Q1**) and (**Q2**) respectively.¹⁶ There are aspects of questions (**Q1**)

(99b22-24)

B: An aporia that picks up on (Q1) is set out [= aporia (a1)] (99b25-30)

B: A view addressing (a1)+(Q1) is set out (99b30-100b5)

A: A view addressing (a2)+(Q2) is set out (100b5-17)

¹⁵For Aristotle on the investigative significance of aporiai, the locus classicus is *Metaphysics* B 995a24-b4. It bears recalling that many of the aporiai *Met.* B proceeds to rehearse (cf. *Met.* K.1-2) are not simply *puzzles* but *puzzlement-inducing philosophical disagreements* (i.e. one group asserts φ and denies ψ ; another group asserts ψ and denies φ ; neither position is obviously mistaken; there are compelling arguments on both sides; so, who is right? and who is wrong?; the truth is far from clear).

¹⁶That 100b5-17 addresses (**Q2**) by addressing (**a2**) is not

and **(Q2)** on which *Post. An.* II.19's handling of **(a1)** and **(a2)** sheds pretty much no light whatsoever—e.g. the vexing problem of how one can come to know of a foundation *that it is a foundation*. I think that all such matters are quite outside the scope of *Post. An.* II.19. The chapter does not, in fact, assert that aporiai **(a1)** and **(a2)** are the only yet-to-be-resolved aporiai that impede us from giving philosophically adequate answers to **(Q1)** and **(Q2)**. In writing *Post. An.* II.19, Aristotle seems to have thought that beyond **(a1)** and **(a2)** the most important additional aporiai that impede us from giving philosophically adequate answers to **(Q1)** and **(Q2)** are aporiai about the soul and how cognition actually works.¹⁷

Our main focus below will be 99b30-100b5's discussion of **(a1)**/**(Q1)**. But before turning to 99b30-100b5, it will prove useful to rehearse a few basic points concerning 100b5-17's discussion of **(a2)**/**(Q2)**. Regarding the kind of non-demonstrative knowledge *K* on the basis of which a person with demonstrative episteme assents to an episteme-yielding demonstration's premises, **(a2)** asks whether *K* is episteme or some different kind [*genos*] of knowledge. 100b5-17 famously opts for the latter option, contending that *K* is not episteme but another type of knowledge which Aristotle calls *nous*. On the final analysis, the English translation that best captures the basic sense and semantic range of the term *nous* in Aristotle's Greek

difficult to see: all that 100b5-17 really says about **(Q2)** is that the knowing state at issue is something called *nous* which isn't episteme. To appreciate that 99b30-100b5 likewise addresses **(Q1)** by addressing **(a1)** compare 99b25-34 with 100a10-11. The latter looks to be the central conclusion that 99b30-100a9 works toward. And 100ba12-100b5 presents itself as an elaboration of 100a10-11.

¹⁷Insofar as Aristotle wrote an *On the Soul*, 100a13-14's unexplained assertion "the soul exists as the sort of being capable of undergoing this [progression]" looks like a pretty obvious invitation to consult it.

quite generally is probably ‘understanding’. Aristotle sometimes uses *nous* to indicate (what we might call) *the understanding*: i.e. the *faculty of understanding/rational intelligence*. But he also uses *nous* to mean *a (perfected) understanding (of something)*: i.e. an acquirable *intellectual virtue* that a rational intelligence might, or might not, achieve. The *Analytics* univocally employs *nous* in the latter sense as a label for a quite specific perfection of intellect which (according to Aristotle) is epistemically superior to the intellectual virtue of episteme.¹⁸ A form of knowledge, paradigmatic instances of this intellectual virtue of *nous* consist (at least on my own reading of Aristotle) in perfected conceptualizations of essences through their real definientia.

In a word, then, *nous* is Aristotle’s 100b5-17 answer to question (Q2). According to 100b5-17: *nous* is the type of knowledge on the basis of which a person with demonstrative episteme assents to an episteme-yielding demonstration’s premises. The intellectual virtue of *nous* is the “foundation of episteme [*archē epistēmēs*]” (100b13). Now, getting clear on the exact account of *nous* that the *Analytics*’ theory of episteme presupposes would require an extended discussion, and is quite unnecessary for present purposes. It will, however, prove useful to have an unambiguous name for the kind of knowledge question (Q2) asks us to identify. So for ease of expression in what follows, let the (English neologism) ‘nous’ be just such a noun—a la-

¹⁸As far as *Post. An. II.19* goes, occurrences of the noun *nous* are limited to 100b5-17. That it’s an **intellectual virtue** called *nous* which is at issue in 100b5-17 is readily verified by studying 100b5-17 in the light of *NE VI.1-3*, 6 (NB 100b5-9’s employment of the tag “always true” [*aei alēthē*]). Outside of 100b5-17, we find the term *nous* in only three further passages in the whole of Aristotle’s *Analytics*: 85a1, 88b35-89a1, 89b8. What Aristotle means by *nous* in the latter three passages is exactly what he means by *nous* in 100b5-17.

bel for the kind of knowledge (**Q2**) asks us to identify and nothing more. Setting other senses of (the Greek word) *nous* aside, the basic thrust of (**Q1**) can then be restated as: How do we develop nous of demonstrative foundations?

3 From (a1)/(Q1) to the aporia of ἡ ἐκ παντὸς

It is not, of course, uncommon for humans to have knowledge that they presently can neither consciously access nor in any way exercise. (Consider, e.g., an expert cobbler or geometer who is severely drunk or in the midst of a panic attack). What's at issue in aporia (**a1**) is whether embodied human beings (i) are born lacking and need to acquire [*lambanein* 99b28] nous of foundations, or (ii) always already have [*echein* 99b26] this knowledge but initially lack—and must work to later develop—the ability to access and fully exercise it.¹⁹

Post. An. II.19 famously opts for alternative (i). Scholars have tended to identify alternative (ii) with Plato's theory that humans learn (mathematical and other kinds of philosophical) knowledge by a kind of recollecting [*anamnēsis*]. Yet it must be admitted that the letter of II.19 hardly requires this identification. Aristotle was, moreover, a careful student of Plato's *Phaedo*. But in an attempt to clarify the *Meno*'s far swifter 85b8-86b5 presentation of the Platonic theory of recollection, the *Phaedo* (73b3-76e7, esp. 75c7-76d6) manifestly takes great pains to *distinguish* the theory of recollection from the kind of strong innatism embodied in (ii). For recall that on the theory of recollection, our pre-embodied souls come into some sort of direct contact²⁰ with imperceptible unchanging

¹⁹With aporia (**a1**) cf. *Met.* A.9 992b24-993a2.

²⁰With *Meno* 81c5-7, cf. *Phaedrus* 247c2 ff.

essences—the so-called “Forms”—and, as a result, acquire [*lambanein*] the correct understanding of each of them. *Phaedo* 75c7-76d6 explains that although our pre-embodied souls did indeed come to possess this kind of perfected knowledge of Forms, the process of embodiment must somehow destroy it [*apollunai*] because the vast majority of embodied humans souls do not in fact have [*echein* 75c7, d9, 76d2] any such knowledge. On the theory of recollection, the *Phaedo* explains, we embodied humans really do need to acquire [*lambanein* 74b4, c9, cf. 73d1] knowledge of Forms; we need, more precisely, to re-acquire [*analambanein* 75e4, e6] such knowledge as a good our souls previously did—but at birth do not—possess. We do this (according to the theory) by drawing on innate “true opinions” [*alētheis doxai*] which, while not themselves knowledge, importantly constitute *surviving remnants* of the no-longer-extant knowledge our pre-embodied souls used to have.²¹

²¹Socrates’ authoritative and careful presentation of the theory of recollection at *Phaedo* 73b3-76e7 is supposed to *correct*—and should be *contrasted with*—Cebes’ overly swift 73a7-b2 sketch of the theory. For the latter, which unsubtly refers us to the *Meno*, is instructively inaccurate on several important points. Contra Cebes (*Phd.* 73a7-8), when Meno’s slave is questioned by Socrates he makes mistakes and importantly does not αὐτὸς λέγει πάντα ἢ ἔχει (cf. *Men.* 82b9-85b). Contra Cebes (*Phd.* 73a8-10), the argument of *Meno* 81e3-86b5 does not in fact show that *epistēmē* and the correct *logos* are already present within [*enousa*] Meno’s slave before Socrates questions him (cf. *Men.* 85b8-d4, 86a7-8: ἐνέσοντα αὐτῷ [= the slave] ἀληθεῖς δόξαι αἱ ἐρωτήσῃ ἐπεγερωθεῖσαι ἐπιστήμαι γίγνονται). Most basically: in giving his swift *Phaedo* 73a7-b2 account of recollection, Cebes has forgotten about the crucial role of “forgetting” (= the destruction of pre-natal knowledge) in the theory. Socrates’ corrective discussion (esp. *Phd.* 75c7-76d6) works to clarify—and strongly emphasizes—this latter component of the Platonic theory of recollection. Insofar as τὸ εἰδέναι and τὸ ἐπίστασθαι is λαβόντα του ἐπιστήμην ἔχειν καὶ μὴ ἀπολωλεκέναι (75d8-10), it is strictly speaking both *false* and *at odds with the theory of recollection* to say that *epistēmē* of Forms is present within [*enousa*]

So on Plato's own interpretation of the theory of recollection, its proponents should actually agree with *Post. An.* II.19's claim that we *don't* always already **have** [*echein* 99b26] nous of foundations and *do* need to **acquire** [*lambanein* 99b28] this knowing state [*hexis*]. To this extent, Plato and Aristotle effectively respond to aporia (**a1**) in the same way: by rejecting alternative (ii) and developing alternative (i). The Platonic theory of recollection, however, would maintain that for humans to successfully acquire nous of a given foundation *X* we crucially need to access innately present *X*-specific information. And this is something that Aristotle will adamantly deny. Human beings, according to Aristotle, are naturally endowed with innate *faculties of knowledge reception* (like perception and a "blank" faculty of understanding); we are born with innate *learning-conducive behavioral dispositions* (like a compulsion to memetic imitation), and even an innate *attraction to knowledge*.²² But nature does not, he insists, supply us with any kind of innate *contentful grasps*.

On these grounds, among others, Aristotle will contend that the Platonic theory of recollection has to be false. And yet, while the details of II.19's response to (**a1**)/(**Q1**) are, to be sure, at odds with the theory of recollection, scholars are quite wrong to characterize *Post. An.* II.19 as attempting to *argue against* the Platonic theory of recollection and *in favor of* some alternative theory of Aristotle's. The chapter does not characterize itself as giving such an argument. Moreover, any philosophically serious Aristotelian attempt to do so would centrally involve explaining why the theory of recollection isn't needed for solving the philosophical problems that motivated Plato to introduce it.

Meno's slave from birth.

²²Cf. e.g.: *Met.* A.1 980a21 ff., *Poet.* 4 1448b5 ff., *DA* II.5, II.12, III.4-8.

But these are *hard* problems tied up with complex issues of metaphysics and mind.²³ And neither *Post. An. II.19* in particular—nor the *Analytics* in general—really works to explain how Aristotle proposes to handle these problems without giving up on the various rationalist and realist commitments he shares with Plato. *Post. An. II.19*, as we shall see, claims that humans can acquire nous of foundations by a process that begins in sense-perception; but an intelligent Platonist who fails to see *how* this could occur unless something like the theory of recollection is true will hardly find much help in *II.19*. *Post. An. II.19*'s responses to (a1)/(Q1) are most definitely not Plato's; but in truth, the chapter does vanishingly little to show why its responses are better than Plato's, or why we should believe the theory of recollection is false. That *Post. An. II.19* aspires to be some kind of profound critical engagement with the Platonic theory of recollection is, I submit, a myth.²⁴

²³E.g. “poverty of stimulus” problems connected to questions like Why does the human intellect produce reliably true intuitions about mathematical objects (e.g. perfect squares) and unchanging essences (e.g. the nature of justice)? (NB that I'm using the term ‘intuition’ here in the loose and non-loaded sense favored by contemporary Anglophone philosophers).

²⁴I contend, in sum, that the rejected alternative (ii) of aporia (a1) is not the theory of recollection. And I contend that if *II.19* were to be read an to attempt to refute the theory of recollection and show the superiority of an Aristotelian alternative, we should have to judge its discussion as thoroughly inadequate and highly question-begging. Scholars are wrong to suppose that 99b25-34 refers to the Platonic theory of recollection. And scholars are wrong to interpret 99b26-27 as an argument against the theory of recollection. To further appreciate the implausibility of the latter interpretative thesis, recall that Plato *agrees* with Aristotle that it would be “strange” [*atopon*] and “wondrous” [*thaumaston*] (*Post. An.* 99b26, *Met.* 993a1) if the theory of recollection were true. Plato's basic idea in texts like the *Meno* and *Phaedo* is that the theory of recollection is a *hypothesis* worth adopting because (i) it solves certain hard philosophical problems, and (ii) upon investigation, it's not as implausible

But let us return to the aporia of $\bar{\epsilon} \text{ ek pantos}$ ($\tilde{\eta} \epsilon\chi \text{ παντὸς}$). This aporia (to repeat) arises in connection with 100a3-9 which, in turn, lies at the heart of 99b30-100b5. The task of 99b30-100b5 (as we've said) is to make progress on **(Q1)** by sketching what Aristotle takes to be the truth regarding **(a1)**. Now, aporia **(a1)** concerns the question of whether humans (i) need to acquire nous of foundations, or (ii) always already have this knowledge. Aristotle himself endorses the former alternative. And the basic problem **(a1)** poses for alternative (i) is that acquiring new knowledge seems to essentially involve exercising *prior* knowledge we already have (99b28-30). For, having argued in *Post. An.* I.1 (71a1-2 ff.) that “all teaching and all learning, of the intellectual kind [*dianoētikē*], comes to be **from prior knowledge** [*ek prohuparchousēs gnōseōs*]”, 99b28-30 asks: “if we acquire [nous of foundations]—being previously without [it]—how could we get this knowledge and learn it **from non-prior knowledge** [*ek mē prohuparchousēs gnōseōs*]?”

Aristotle's *Post. An.* II.19 response to **(a1)** centrally emphasizes two points (99b30-34, cf. 100a10-

as it may first seem. Finally, a remark about 71a29 is in order. The *Post. An.* I.1 71a29 phrase *to en tōi Menōni aporēma* refers **neither** to the puzzle which *Post. An.* I.1 71a17-31 claims to solve [*luein* 71a31] **nor** to what we call “Meno's paradox”. The latter is a puzzle argument—an *apparently valid* argument from *apparently true* premises to an *apparently absurd* conclusion; the puzzle which 71a17-31 claims to solve is a different puzzle entirely; and the referent of *to en tōi Menōni aporēma* at 71a29 isn't an *argument* at all but a *paralyzing objection*—an absurd consequence that allegedly results [*sumbainei* 71a30] if one rejects Aristotle's proposed solution to the puzzle which *Post. An.* I.1 71a17-31 claims to solve. This absurd consequence is analogous to, but not identical with, the absurd conclusion of the “eristic logos” (*Meno* 80d-e) that we call Meno's paradox. The sense of *to en tōi Menōni aporēma* needs to be understood accordingly. Neither *Post. An.* I.1, nor any other *Analytics* text, presents Aristotle's response to the puzzle argument (we call) Meno's paradox.

11). The first is that in cases where we do acquire new knowledge by exercising knowledge we already have, the old knowledge needn't be *more epistemically valuable than* nor *prior by nature* to the new knowledge. The second is that, like other animals, humans in fact possess *primitive faculties of knowledge acquisition* whereby we can gain new knowledge without exercising any pre-existing knowledge at all. All animals, Aristotle explains (99b34-35), have at least one such primitive faculty of knowledge acquisition: “the innate [*sumphutos*] faculty of discrimination [*dunamis kritikē*] that people call perception [*aisthēsis*]”. Some animals, he adds, have no knowledge [*gnōsis*] of perceptible objects when they're not perceiving them; but other animals are so structured that exercises of perception suffice for bringing about lasting dispositional knowledge and developing further epistemic powers (99b36-100a3). Thus some animals are of such a nature that by simply perceiving they acquire memories. And other animals are so constituted that after much perceiving and forming many memories, rationality [*logos*] is engendered within them.²⁵ I take 100a1-3 to be saying that humans are not *born with* rationality, but rather *acquire* rationality from the world by perceiving and remembering what we perceive. As for how this occurs—and why one would be wrong to think that the theory of recollection is needed for explaining this kind of occurrence—such matters are passed over without comment.

Thus, in sum, 99b30-100a3. The remainder of *Post. An.* II.19's response to (a1)/(Q1) comprises 100a3-

²⁵Like Bronstein (2016) and others, I think the *Met.* A.1 parallel (980a27 ff.) tells strongly in favor of taking *logos* at 100a2 to mean *reason* in the sense of *rationality* (NB *logismois* at 980b28). Barnes' case against this construal of *logos* at 100a2 is not convincing. For further discussion I esp. recommend Gregorić and Grgić (2006, pp. 21-4), Gasser-Wingate (2016, pp. 7-8).

100b5. Turning away from knowers in general, and towards human knowers in particular, 100a3-100b5 sketches a highly abstract account of the multi-stage epistemic progression whereby we humans would proceed from ignorance to nous. It bears emphasis that what 100a3-100b5 describes isn't a *justificational procedure* or *heuristic method* that one might either adopt or fail to adopt. 100a3-100b5 concerns the type of *intellectual progression* that (according to Aristotle) is always successfully traversed when humans acquire nous of demonstrative foundation(s). At issue in 100a3-100b5 is something which "the [human] soul is capable of **undergoing** [*paschein*]" (100a14).

And so finally we arrive at *Post. An.* 100a3-9, the passage wherein our problematic *ē ek pantos* (100a6) is embedded. To work up the aporia of *ē ek pantos*, let us start by laying out Ross' Greek text for 100a3-9 together with Barnes' influential translation of the passage:

ἐκ μὲν οὖν αἰσθήσεως γίνεται μνήμη, ὥσπερ λέγομεν, ἐκ δὲ μνήμης πολλάκις τοῦ αὐτοῦ γινομένης ἐμπειρία, αἱ γὰρ πολλαὶ μνήμαι τῷ ἀριθμῷ ἐμπειρία μία ἐστίν. ἐκ δ' ἐμπειρίας ἢ ἐκ παντὸς ἡρεμήσαντος τοῦ καθόλου ἐν τῇ ψυχῇ, τοῦ ἐνὸς παρὰ τὰ πολλά, ὃ ἂν ἐν ἅπασιν ἐν ἐνῇ ἐκείνοις τὸ αὐτό, τέχνης ἀρχὴ καὶ ἐπιστήμης, ἐὰν μὲν περὶ γένεσιν, τέχνης, ἐὰν δὲ περὶ τὸ ὄν, ἐπιστήμης.

Thus from perception [*aisthēsis*] there comes memory [*mnēmē*], as we call it, and from memory (when it occurs often in connection with the same item) experience [*empeiria*]²⁶; for memories which are many in

²⁶Recall that *empeiria* ("experience") is Aristotle's name for the type of knowledge we ascribe when we call a person "experienced" (*empeiros*) in or with respect to something.

number form a single experience. And from experience, or from all the universal which has come to rest in the soul (the one apart from the many, i.e. whatever is one and the same in all these items), there comes a principle [*archē*] of art [*technē*] or of understanding [*epistēmē*]²⁷—of art if it deals with how things come about, of understanding if it deals with how things are.

Taking *pantos* to modify *tou katholou*, Barnes translates 100a6's *ek d' empeirias ē ek pantos ēremēsantos tou katholou en tēi psuchēi* as "And from experience, **or from all** the universal which has come to rest in the soul". This mereological reading of *pantos* ('all' in the sense of 'the entirety of') is arguably a bit linguistically difficult due to the position of the article. But Barnes' construal is grammatically possible. And because *ē ek pantos ēremēsantos tou katholou en tēi psuchēi* simply cannot mean "from every universal which has come to rest in the soul", the *pantos* in question is widely assumed to modify *tou katholou* and yield the meaning 'all the universal', i.e. 'the entire universal'.

This much is basically uncontroversial.²⁷ But it does leave us with the question as to why Aristotle

²⁷Or rather: today this much is basically uncontroversial. While the vast majority of 20-21st cent. scholars construe 100a6's *pantos* with *tou katholou* in the very manner that Barnes does, Pseudo-Philoponus construes 100a6-9 in a strikingly different way (cf. the translation of 100a3-9 in Bolton and Code (2012) p. 67). Pseudo-Philoponus' gloss on 100a6 explains (*CAG* 13.3 436,2-5): τὸ ἡ ἀντὶ τοῦ καὶ ληπτέον. ἔστι δὲ τοιοῦτον ἐκ δὲ τῆς ἐμπειρίας καὶ ἐκ παντὸς αἰσθημάτων τοῦ ἡρεμήσαντος ἐν τῇ ψυχῇ καὶ ἐδραιωθέντος γίνεται ἡ γνῶσις τοῦ καθόλου τοῦ ἐνὸς ὄντος παρὰ τὰ πολλά. Taking *pantos* to modify an implied *aisthēmatos*, and *pantos aisthēmatos* as the subject of *ēremēsantos en tēi psuchēi psuchēi*, Pseudo-Philoponus seems to effectively read *tou katholou* as an objective genitive (governed by an implied *gnōsis* if not *technēs archē kai epistēmēs* at 100a8)!

is being so obscure in speaking of ‘all the universal’ rather than just ‘the universal’. Should *all* the universal be opposed to *some* or *most* of it? Aristotle simply does not use such locutions elsewhere, and the passage at issue does not seem to furnish any disambiguating hints. So why does he write ‘*all* the universal’ here? Why not simply write ‘the universal’? Various conjectures can be, and have been, given. But no-one seems to have convinced anyone else to adopt their own proposed conjecture; and most of us don’t find any of the proposals terribly promising.

So, part of the obscurity of 100a6’s *ē ek pantos* is due to the *pantos* (‘all’). But there’s also, of course, the ambiguity of the Greek the particle *ē* (‘or’). In fact, the debate about how to interpret *ek d’ empeirias ē ek pantos ēremēsantos tou katholou en tēi psuchēi* (“from experience or from all the universal which has come to rest in the soul”) is best viewed as centered around the question of how one should read this *ē* (‘or’). In an influential passage of his 1992 book, McKirahan explains the issue as follows:

After saying that memory arises from perception and experience arises from memory, [Aristotle] says

II.19 100a6-9 ‘From experience, or from the whole universal at rest in the soul, the one beside the many, which is one identical thing in all of them (the many), [arises] the principle of art and science.’

The issue in interpreting this passage is how to take the conjunction ‘or’ (*ē*). Is it (a) disjunctive (the principle of science comes *either* from experience *or* from the universal in the soul), (b) explicative (it

comes from experience, *that is to say*, from the universal in the soul), or (c) progressive (it comes from experience, *or rather* from the universal in the soul, which is the next stage after experience)? The first can be eliminated straight off. [...] The second is adopted by most translators and commentators, but it contradicts the *Metaphysics* view that experience remains on the level of particulars. The parallels between *Metaphysics* A.1 and *APo.* II.19 are so close that we should be loath to find any significant disparity in the conceptions of experience present in the two chapters. Accordingly I prefer the third interpretation of ‘or’, on which ‘the universal at rest in the soul’ is a stage intermediate between experience and scientific knowledge. (McKirahan 1992, p. 243)

McKirahan’s terminology of “disjunctive”, “explicative”, and “progressive” has been taken up in many subsequent discussions of our passage.²⁸ McKirahan’s contention that the “explicative” reading is the one “adopted by **most** scholars and translators” is less *obviously true* today than it was in 1992 when McKirahan wrote it. For quite a few recent authors—e.g. Charles (2000), Tuominen (2010), Bronstein (2016), Gasser-Wingate (2016)—have followed McKirahan in defending the “progressive” reading against the “explicative” construal adopted (e.g.) in influential publications of LeBlond (1939/1970), Ross (1949/1957), Barnes (1975/1993), and Bolton (1976). Hasper and Yurdin (2014)—who defend the “explicative” construal against the “progressive” alternative—aren’t *obviously wrong* to character-

²⁸Some authors prefer “corrective” as an alternative label for the construal that McKirahan calls “progressive”; nothing much turns on this.

ize the “explicative” construal as (still) the reading favored by “most scholars” (p. 122-123, n.7). But my own impression of the present scholarly landscape is that researchers who’ve worked on *Post. An.* II.19 are more-or-less evenly split on the “explicative” vs. “progressive” question. (For excellent reasons, the highly unlikely reading McKirahan calls “disjunctive” has never been seriously endorsed).

So scholars are divided as whether 100a6’s *ē ek pantos...psuchēi* (“or from all the universal having come to rest in the soul”) should be given a “explicative” or “progressive” reading. On the “explicative” reading, *ē ek pantos...psuchēi* is saying that experience somehow constitutes a grasp of “the entire universal”; and 100a3-9 would then be describing a *four stage* cognitive progression whereby nous is acquired:

perception → memory → experience → nous

On the “progressive” reading, *ē ek pantos...psuchēi* is saying that a grasp of “the entire universal” is some kind of intermediate cognitive achievement superior to experience but inferior to nous; and 100a3-9 would then be describing a *five stage* cognitive progression whereby nous is acquired:

perception → memory → experience → grasp of
all the → nous
universal

Neither construal is obviously incorrect. And nothing in the remainder of *Post. An.* II.19, or elsewhere in the *Corpus Aristotelicum*, is thought to decisively rule out either interpretive possibility.

Now, I don’t myself think that 100a3-9 is supposed to present some boldly inventive piece of anti-Platonic epistemology; I don’t myself think that 100a3-9 articulates a centrally important component of the theory of episteme that the *Analytics* works to develop; and I don’t myself believe of *Post. An.* II.19 that

100a6-8 “makes the central claim of the chapter as a whole” (Adamson 2010, p. 9). But on all of these counts, many recent scholars have thought otherwise. One result of this is that *Post. An.* scholarship has come to contain a great multiplicity of philosophically-interesting, albeit highly speculative, interpretive proposals developed out of the “progressive” and “explicative” readings of 100a6’s *ē ek pantos* respectively. The “progressive” vs. “explicative” question has become highly contentious. And many competing interpretations of 100a3-9 in particular—and *Post. An.* II.19 in general—now crucially require adopting one of these two construals of 100a6’s *ē ek pantos* and rejecting the other.²⁹

²⁹For a taste of this, one can compare (e.g.) Bronstein’s version of the “progressive” reading with Sorabji’s version of the “explicative”. In a 2010 article Sorabji writes:

[In *Post. An.* II.19] Aristotle is providing an alternative to Plato by showing how concepts can be formed on the basis of sense perception. There is in that case, he thinks, no need for Plato’s alternative, argued in *Phaedo* 72e-77a, of concepts stored in the mind from the soul’s existence before birth. In 100a3-8, Aristotle says that many memories of the same type of perceived thing, let us say of oxen, constitute experience (*empeiria*) of oxen. And then, on my interpretation, he uses the word ‘or’ (*ē*), to equate experience, or many memories, with a rudimentary universal concept of oxen. At any rate, he speaks of experience, or (*ē*) the whole universal (*katholou*) in the soul. Admittedly, the word ‘or’ can mean ‘or rather’. But if he were here talking of experience or rather the whole universal [as Aristotle would be on the “progressive” reading], he would have left unexplained the very thing he is trying to explain, how, contrary to Plato’s view, remembered sense perceptions are enough to give us at least a rudimentary universal concept. The explanation is that to have a rudimentary universal concept of oxen just is to have enough memories of oxen to react with experience to them. It is not a further step beyond

many memories. (Sorabji 2010, p.3)

Pace Sorabji, his “explicative” construal of 100a6 does not in fact yield a text that (my emphasis) “explains how, contrary to Plato’s view, remembered sense perceptions are enough to give us at least a rudimentary universal concept”. If *Post. An.* II.19 *was* (which I dispute) written to accomplish the philosophical task Sorabji describes, the effect of adopting his “explicative” reading of *ē ek pantos* would be a flagrant begging of the question. Sorabji’s case in the passage above that the “explicative” reading ought to be preferred because it’s *philosophically superior* to the “progressive” is hardly compelling.

While Sorabji’s reading of *Post. An.* II.19 requires adopting the “explicative” reading of 100a6’s *ē ek pantos* and rejecting the “progressive” alternative, Bronstein’s depends on adopting the “progressive” reading and rejecting the “explicative” alternative:

[In 100a3-9] Aristotle identifies four stages prior to *nous* which he here calls the “principle of craft and scientific knowledge”: perception, memory, experience, and the grasp of “the entire universal”. By ‘universal’ Aristotle means, I take it, a proposition of the form ‘all As are B’. We reach this universal by induction which he discusses [at 100a14-b5]. However, knowing this universal is not equivalent to knowing a first principle. Aristotle is clear that *nous*, the state we are in when we know first principles, comes after knowing this universal. [...] Nor is it the case that we reach knowledge of first principles directly after grasping this universal. Rather, I suggest that the universal we reach by induction is a preliminary account required for scientific inquiry. Aristotle omits the important stages between grasping the universal and *nous*, and so there is a gap in his account. However, this gap is not filled by further inductive activity alone or by the allegedly intuitive activity of [some faculty of] *nous*; rather, it is filled by the methods of inquiry he sets out earlier in Book 2. (Bronstein 2016, pp. 236-237)

Proponents of the “progressive” reading have set out various competing proposals regarding (i) what kind of cognition “the universal having come to rest in the soul” amounts to, (ii) how *nous* is supposed to emerge from this kind of cognition, and (iii) how this kind of cognition differs from experience. Bronstein’s own account of (i)-(iii) is highly speculative. Alternative accounts of (i)-(iii) given by other proponents of the “progressive”

In the next section I'll be proposing a novel response to the aporia of *ē ek pantos*. But before bringing this section to a close, it's worth rehearsing the main and most powerful arguments that have been adduced for the "explicative" and "progressive" construals of 100a6's *ē ek pantos* respectively.

The chief argument in favor of the "explicative" reading and against the "progressive" alternative is that the "explicative" construal of *ē ek pantos* looks quite a bit linguistically easier than the "progressive".³⁰ Now, proponents of the "explicative" reading are (I think) correct on this point of language. But proponents of the "progressive" reading of *ē ek pantos* are reasonably unmoved by the argument. For as a matter of Greek, the "progressive" construal really *does* seem to be linguistically possible. And in the interpretation of Aristotle, considerations of linguistic naturalness need to be weighed against many other considerations, hermeneutical and philosophical.

The chief argument in favor of the "progressive" reading and against the "explicative" alternative is that the "progressive" coheres better with a closely parallel text in *Metaphysics* A.1. In language impressively

reading differ and tend to be no less speculative than Bronstein's.

³⁰Hasper and Yurdin, for instance, develop this line as follows:

A sentence of the form 'from *x* or from *y*, *z* comes about' is more plausibly interpreted as meaning either that *x* and *y* are two separate sources for *z* or that '*y*' is an alternative way of specifying or picking out the same thing as is picked out by '*x*', one that makes it clear what aspect of *x* is relevant to its being a source for *z*. As the former does not apply here [i.e. the former gives an implausible reading of 100a6's *ē ek pantos*...] Aristotle is using 'experience or a universal having come to rest as a whole in the soul' in the latter way. (Hasper and Yurdin 2014, pp. 122-3 n.7)

similar to that of *Post. An.* II.19, *Met.* A.1 980a27 ff. explains the development of *technē* (craft-knowledge) as follows:³¹

By nature, animals are born with perception. And from perception, memory is engendered in some of them, while in others it's not. [...] The other animals live by impressions and memories, yet have little share of experience. But the human race lives [not only by impressions and memory but] also by *technē* and reasonings. And experience comes to humans from memory. For many memories of the same thing furnishes the power of one experience. Experience, indeed, seems a bit similar to the science of *technē*.³² But in fact, the science of *technē* result for human beings through

³¹I'm translating the *Met.* A.1 980a27-981a16 text of Primavesi (2012): φύσει μὲν οὖν αἰσθησιν ἔχοντα γίνεταί τὰ ζῷα, ἐκ δὲ τῆς αἰσθήσεως τοῖς μὲν αὐτῶν οὐκ ἐγγίγνεταί μνήμη, τοῖς δὲ γίνεταί. [...] τὰ μὲν οὖν ἄλλα τοῖς φανταστικαῖς ζῆ καὶ τοῖς μνήμασι, ἐμπειρίας δὲ μετέχει μικρόν· τὸ δὲ τῶν ἀνθρώπων γένος καὶ τέχνη καὶ λογισμοῖς· γίνεταί δ' ἐκ τῆς μνήμης ἐμπειρία τοῖς ἀνθρώποις· αἱ γὰρ πολλὰ μνήμασι τοῦ αὐτοῦ πράγματος μιᾶς ἐμπειρίας δύναμιν ἀποτελοῦσιν· καὶ δοκεῖ σχεδὸν ἐπιστήμη καὶ τέχνη ὅμοιον εἶναι ἢ ἐμπειρία, ἀποβαίνει δ' ἐπιστήμη καὶ τέχνη διὰ τῆς ἐμπειρίας τοῖς ἀνθρώποις· ἢ μὲν γὰρ ἐμπειρία τέχνην ἐποίησεν, ὡς φησὶ Πῶλος ὀρθῶς λέγων, ἢ δ' ἀπειρία τύχην· γίνεταί δὲ τέχνη ὅταν ἐκ πολλῶν τῆς ἐμπειρίας ἐννοημάτων μία καθόλου γένηται περὶ τῶν ὁμοίων ὑπόληψις· γίνεταί δὲ τέχνη ὅταν ἐκ πολλῶν τῆς ἐμπειρίας ἐννοημάτων καθόλου μία γένηται περὶ τῶν ὁμοίων ὑπόληψις· τὸ μὲν γὰρ ἔχειν ὑπόληψιν ὅτι Καλλιὰ κάμνοντι τῆνδὶ τὴν νόσον τοδὶ συνήνεγκε καὶ Σωκράτει καὶ καθ' ἕκαστον οὕτω πολλοῖς, ἐμπειρίας ἐστίν· τὸ δ' ὅτι πᾶσι τοῖς τοιοῖσδε κατ' εἶδος ἐν ἀφορισθεῖσι, κάμνουσι τῆνδὶ τὴν νόσον, συνήνεγκεν, ὡς τοῖς φλεγματώδεσιν ἢ χολώδεσιν πυρέττουσι καύσῳ, τέχνης· πρὸς μὲν οὖν τὸ πράττειν ἐμπειρία τέχνης οὐδὲν δοκεῖ διαφέρειν, ἀλλὰ καὶ μάλλον ἐπιτυγχάνοντας ὀρώμεν τοὺς ἐμπείρους τῶν ἄνευ τῆς ἐμπειρίας λόγον ἔχόντων· αἴτιον δ' ὅτι ἢ μὲν ἐμπειρία τῶν καθ' ἕκαστον ἐστὶ γνῶσις ἢ δὲ τέχνη τῶν καθόλου...

³²In view of the discussion's practically exclusive focus on

experience. For experience, as Polus says (speaking correctly), makes *technē*, while inexperience makes luck [*tuchē*]. And *technē* arises when from the many conceptions of experience one universal grasp [*mia katholou hupolēpsis*] concerning similar things comes about. For [what's characteristic] of experience is to have a grasp that when Callias gets ill with *this* disease *this* helps, and Socrates too, and similarly in many particular [cases]. But [what's characteristic] of *technē* is to have a grasp that *this* helps everyone of a certain constitution—in one demarcated class—who gets ill with *this* disease. [...] The reason [why the experienced are more successful than unexperienced people with the correct accounts] is that experience is knowledge of the particulars [*gnōsis tōn kath' ekaston*] while *technē* is knowledge of the universals [*tōn katholou*]. (*Met.* A.1 980a27-980b21, 980b25-981a16)

The linguistic, narrative, and philosophical congruences between *Post. An.* II.19 99b34-100a9 and this *Met.* A.1 parallel are quite remarkable. Now, according to the latter text, what the experienced person without *technē* **characteristically lacks** is a grasp [*hupolēpsis*] and knowledge [*gnōsis*] of the universal [*tou katholou*]. But on the “explicative” reading of *Post. An.* II.19 100a6, *ē ek pantos...psuchēi* serves to **identify** experience with grasping “the entire universal”. And this, it is alleged, tells against construing 100a6’s *ē ek pantos...psuchēi* as “explicative” and supports construing it as “progressive”.

Proponents of the “explicative” reading of *ē ek pan-*

technē, I’ve translated *epistēmē kai technē* as a hendiadys. Effectively, I take the relevant *epistēmē kai* to emphasize that it’s intellectual/scientific aspect of *technē* which is at issue here.

tos haven't found this argument terribly persuasive. And neither do I. For note that our *Met.* A.1 parallel describes a cognitive progression in *four*, and not *five* stages:

perception → memory → experience → *technē*

So there's also some tension between *Met.* A.1 and the “progressive” reading of *ē ek pantos...psuchēi* in *Post. An.* II.19. Is the alleged tension between *Met.* A.1 and the “explicative” reading of the phrase *really* all that worse? If their appeal to *Met.* A.1 is to be helpful, proponents of the “progressive” reading need us to grant (i) that *Met.* A.1 and *Post. An.* II.19 provide compatible, parallel accounts of the same general progression, and (ii) that the passages' differing contexts can easily explain why one (*Met.* A.1) gives a four stage analysis while the other (*Post. An.* II.19) gives a five stage analysis. But if we are to grant (ii) to proponents of the “progressive” reading, shouldn't we also grant proponents of the “explicative” reading that the differing contexts of *Post. An.* II.19 and *Met.* A.1 could easily have motivated Aristotle to use “universal” [*katholou*] in two different senses—meaning one thing by *katholou* in *Post. An.* II.19 (100a3-9) and another by *katholou* in the *Met.* A.1 parallel?

4 A new solution the aporia of *ē ek pantos*

We are left, then, with the following aporia concerning how to understand *ē ek pantos...* (“or from all...”) at *Post. An.* II.19 100a6. Numerous competing interpretations of *Post. An.* II.19 in general—and 100a3-9 in particular—require adopting one *and not another* construal of this *ē ek pantos*. Some scholars read the relevant *ē* (‘or’) as “progressive” while others read it as “explicative”. Arguments have been adduced in favor of both possibilities. But neither of the two cases is terribly strong; and it's far from clear that either case

is significantly stronger than the other. Why 100a6 speaks of “**all** [*pantos*] the universal coming to rest in the soul”—rather than simply “the universal coming to rest in the soul”—is anyone’s guess.

My proposed solution to this aporia is more a dissolution than a resolution of the puzzle. It sets out from a simple observation I haven’t found elsewhere discussed: the words *ē ek pantos* that we read in modern printings of 100a6 are unattested in some quite important witnesses to the text of *Post. An. II.19*.

4.1 Evidence of “direct” witnesses to the text of 100a6

Given the present state of scholarship on the Greek *Post. An.* manuscript tradition, the most evidentially important “direct” witnesses to the text of *Post. An. II.19* look to be (i) manuscripts A, B, d, and n consulted by Ross (1949), and (ii) manuscripts D, V, and G of which Ross was ignorant.^{33,34}

³³For sigla see note 3 above. The especially significant evidentiary value of D (= Par. gr. 1843) for the *Post. An.* has been stressed by Brockmann (2004) and is confirmed in my “Towards a Text History of Aristotle’s *Analytics*” (draft available on request). Among the most important results of Brockmann 2004 is that folios 127-207v of manuscript D give us a careful copy of the (now highly fragmentary) 9th-10th cent. manuscript Sin. gr. M138 newly discovered in 1975 (on which see Reinsch 2001). Folios 127-207v of D cover *Pr. An.* 30b37 - *Post. An.* end; unfortunately, *Post. An. II.19* is not extant in surviving fragments of Sin. gr. M138.

³⁴The sense in which Ross was “ignorant” of manuscript D is qualified and merits comment. The *Organon* siglum ‘D’ actually goes back to the 1831 *Organon* edition of Bekker whose (very sparse) apparatus uses ‘D’ to index selected variants Bekker found in the BnF manuscript Par. gr. 1843. Unfortunately, instead of (correctly) stating that D = Par. gr. 1843, the front matter to Bekker’s edition incorrectly reports that D = Cois. 170. But as Waitz pointed out in the introduction to his own 1844-46 enlarged critical edition, the latter BnF manuscript (i.e. Cois. 170) doesn’t in fact contain any of the *Organon*. The true codicological identity of Bekker’s D was to remain a scholarly

As for the relative genealogy of the group of manuscripts {A, B, d, n, V, G, D} it is readily shown that:

1. our *Post. An.* manuscripts A, B, d, V, and G all descend from a (no-longer-extant) common ancestor α from which neither D nor n descend
2. our *Post. An.* manuscripts D and n descend from a (no-longer-extant) common ancestor β from which none of A, B, d, V, or G descend

It's with reference to the above that we speak of ' α -family' and ' β -family' *Post. An.* manuscripts.

At the 100a6 text-location *empeirias...ēremēsantos* in our α -family manuscripts, we find that A, B, d, V, and G furnish a number of variant readings:

ἐμπερίας ἦ ἐκ παντὸς ἡρεμήσαντος BG

ἐμπερίας ἦ ἐκ παντὸς ἡρεμίσαντος A

ἐμπερίας ἦ ἐκ παντὸς ἡρεμήσαντος V

ἐμπερίας ἦ ἐκτὸς ἀριθμήσαντος d

But at the same text-location in both our β -family witnesses, n¹ and D¹, the words *ē ek pantos* (ἦ ἐκ παντὸς) are omitted. For 100a6's *empeirias...ēremēsantos*:

ἐμπερίας ἡρεμήσαντος nD

This latter variant, as we shall see, is also found in significant "indirect" witnesses to the text of 100a6.

mystery for next 100+ years. Now, as Waitz did in his 1844-46 *Organon* edition, Ross includes some of Bekker's 1831 reports of D variants in the apparatus to his 1949 *Analytics* edition. But confusing matters even further, the front matter of Ross 1949 falsely prints that D = Cois. 157, thus misidentifying Bekker's D with *another* BnF manuscript—one which, unlike Cois. 170, does at least contain the *Organon*. That the manuscript corresponding to Bekker's siglum 'D' is in fact Par. gr. 1843 was finally discovered by H. D. Saffrey about a decade after Ross' 1949 *Analytics* edition was published. (Ross credits Saffrey with this discovery in his 1959 *Topics* OCT).

4.2 Evidence of “indirect” witnesses to the text of 100a6

The oldest *Post. An.* commentary of whose contents we have any substantial knowledge is that of Alexander of Aphrodisias (fl. 2-3rd cent. CE). Originally a quite massive work, commenting on both of the *Posterior Analytics*’ two books, the bulk Alexander’s *Post. An.* commentary is no longer extant. Numerous fragments from Alexander’s *Post. An.* commentary do, however, happily survive. The *Analyticorum Posteriorum Paraphrasis* of Themistius (ca. 317-390 CE) survives in full, and in paraphrasing “the meaning” [*ta boulēmata*] of *Post. An.* I-II often follows Aristotle’s Greek quite closely. As for Neoplatonic commentators, while there can be little doubt that Proclus (d. 485 CE) gave influential lectures on the *Post. An.* in Athens, it is far less clear that these lectures were ever circulated in the form of a book. The *Post. An.* lectures of Proclus’ student Ammonius, however, did form the basis for a written commentary by Philoponus (fl. 6th cent. CE). And Philoponus’ commentary on *Post. An.* I is fully extant. Philoponus, conceivably, might also have commented on *Post. An.* II. But the commentary on *Post. An.* II attributed to Philoponus in the *Commentaria in Aristotelem Graeca* (*CAG*) series is the work of a medieval Byzantine author (= Leo Magentinus, according to Ebbesen) and not Philoponus himself. The so-called “Anonymous Commentary” on *Post. An.* II (i.e. *Anonymi in Analyticorum Posteriorum Librum Alterum Commentarium* in *CAG* 13.3) isn’t exactly a commentary in the traditional sense. Commenting on much, though not all, of *Post. An.* II, the “Anonymous Commentary” presents itself as a sequence of excerpts. Due to the important study of Moraux (1979), we now know the primary—and perhaps exclusive—source of these excerpts to be the largely lost *Post. An.* com-

mentary of Alexander.³⁵

Now, among the excerpts one finds in the “Anonymous Commentary” on *Post. An.* II, there turn out to be two discussions (602,2 ff. and 600,26 ff.) that actually quote 100a6. And on both of these occasions, the “Anonymous Commentary” quotes 100a6 in a version that omits the 3 words $\bar{\epsilon} \text{ ek pantos}$ ($\bar{\eta} \text{ ἐκ παντὸς}$). The text for 100a6’s $\text{ek d’ empeirias...katholou}$ that whoever wrote these discussions read in their copy/copies of the *Post. An.* was:

$\bar{\epsilon} \kappa \delta' \text{ ἐμπειρίας ἡρεμήσαντος τοῦ καθόλου}$

and *not*, as one reads in modern editions:

$\bar{\epsilon} \kappa \delta' \text{ ἐμπειρίας ἢ ἐκ παντὸς ἡρεμήσαντος τοῦ καθόλου}$

So the “Anonymous Commentary” testifies to the same 100a6 variant as our β -family manuscripts n and D.

Boethius’ 6th cent. translation of the *Post. An.* into Latin seems to have been lost not long after it was produced. And we have no evidence that the *Post. An.* was re-translated into Latin before the 12th cent. The Syriac *Post. An.* translations of Athanasius of Balad (d. 687) and especially Ishāq Ibn Ḥunayn (d. 910/911) seem to have fared much better than Boethius’. But neither of them, nor any other Syriac *Post. An.* translation, presently survives. The oldest extant *Post. An.* translation in any language is the Arabic *Post. An.* due to Abū Bishr Mattā (d. 940). While the oldest Greek *Post. An.* manuscripts that survive today date to the 9-10th cent., the no-longer-extant Greek *Post. An.* manuscript(s) on which Abū Bishr’s Arabic most immediately depends are early 9th cent. at the latest

³⁵For an insightful and pleasantly concise discussion of the Greek tradition of *Post. An.* commentaries, I esp. recommend Ebbesen 2012.

and likely much older.³⁶

If we attend to Abū Bishr's Arabic translation of *Post. An.* 100a3-9, we find no trace of the 3 words *ē ek pantos* in his rendering of 100a6.³⁷ The Greek that corresponds to Abū Bishr's Arabic for 100a6's *ek d' empeirias...tou katholou* is

ἐκ δ' ἐμπειρίας ἡρεμήσαντος τοῦ καθόλου

Abū Bishr's translation presupposes a Greek source that contained the same version of 100a6 which we find in our β -family *Post. An.* manuscripts—the same version of 100a6 which the “Anonymous Commentary” quotes.

Themistius' 4th cent. CE reworking of *Post. An.* II.19 in his *Paraphrasis* furnishes no clear evidence as

³⁶ Abū Bishr's Arabic *Post. An.* translation is extant in the celebrated 11th cent. scholarly manuscript Par. ar. 2346 (edited by Badawī 1948-52). It was most immediately based on the Syriac *Post. An.* of Ishāq Ibn Ḥunayn (d. 910/911). Unfortunately, no other medieval Arabic translations of *Post. An.* II.19 are presently extant in Arabic. As Walzer 1953's comparative study of Abū Bishr's translation and manuscripts A, B, d, n already suggests, the Greek manuscript(s) on which Abū Bishr's Arabic *Post. An.* is ultimately based look to be β -family. For a concise introduction to 20th cent. scholarship on Arabic/Syriac *Post. An.* translations and related issues, see the entry “Aristote de Stagire, *Organon*—Tradition syriaque et arabe” in Goulet (1989).

³⁷ Abū Bishr translates 100a3-9 as follows:

فمن الحس يكون حفظ كما قلنا؛ ومن تكرير الذكر
مرات كثيرة تكون تجربة، وذلك أن الأحفاظ الكثيرة في
العدد هي تجربة واحدة. [= ἐκ δ' ἐμπειρίας] ومن
التجربة [= ἡρεμήσαντος τοῦ καθόλου] عندما يثبت
ويستقر الكلي [= ἐν τῇ ψυχῇ] في النفس الذي هو
واحد في الكثير، ذلك الذي هو في جميعها واحد بعينه
هو مبدأ الصناعة والعلم. وذلك إنه إن كان لما في
الكون فهو مبدأ الصناعة، وإن كان فيما هو موجود فهو
مبدأ للعلم.

to whether *he* read the words \bar{e} *ek pantos* in the version of 100a6 known to him. As far as the Greek *Post. An.* commentary tradition goes, the earliest commentators that we do positively know to have read the words \bar{e} *ek pantos* at 100a6 turn out to be 12-13th cent. Byzantine scholars like Eustratius (*CAG* 21.1 264,8 ff.) and Pseudo-Philoponus (*CAG* 13.3 436,2 ff.). The enormously influential 12th cent. Latin *Post. An.* translation due to James of Venice (see *AL* IV.1) renders 100a6: *ex experimento autem aut ex omni quiescente* [= ἡ̄ ἐκ παντὸς ἡ̄ρεμῆσαντος] *universalis in anima*. And this was the version of 100a6 known (e.g.) to Aquinas.³⁸

³⁸The 13th cent. revision of James' translation by William of Moerbeke (see *AL* IV.4) gives us a Latin 100a6 perfectly identical with James' original. The so-called "Translatio Anonyma sive 'Ioannis'" (see *AL* IV.2) gives us a Latin 100a6 minimally different from James': *ex experimento autem illud quod aut ex omni quiescente universalis in anima*. We noted above that Abū Bishr's is the only medieval Arabic translation of *Post. An.* II.19 presently extant in Arabic. The 12th cent. Latin *Post. An.* translation of Gerard of Cremona (see *AL* IV.3) is thought to be based on an Arabic text for the *Post. An.* substantially different from Abū Bishr's. It's not entirely clear whether the latter Arabic text is best regarded as a later reworking of Abū Bishr's translation, or a fresh translation rendered in a far freer and more paraphrastic style than Abū Bishr's. But in any case, it's clear enough that compared to Abū Bishr's Arabic *Post. An.*, Gerard's highly paraphrastic Arabo-Latin *Post. An.* is of significantly less evidential value for establishing the original Greek. Gerard's rendering of 100a3-8 reads (NB the lack of an *aut ex omni*):

Quod est quia virtus ymaginativa et memorialis non suscipiunt eas nisi ex virtute sensibili; et virtus memorialis, quando servat formas rerum a vice post aliam, lubratur ex eis assimilationem rebus, ex huiusmodi assimilationibus comprehensivis pervenit universale anime. Et universale quidem est forma una procedens ex formis multis, et est existens in unaquaque earum; et hec forma est una eadem, et est principium scientie et artis.

4.3 The text of 100a6 in some notable printed editions

Moving forward a few centuries, at 100a6 in the 1495 Aldine *Organon* one reads (sic)

ἐκ δ' ἐμπειρίας, ἡ ἐκ παντός ἡρεμήσαντος
τοῦ καθόλου

But if one turns to *Post. An. II.19* in Pacius' influential 1592 *Organon*, one reads at 100a6 (the better) α-family variant

ἐκ δ' ἐμπειρίας ἡ ἐκ παντός ἡρεμήσαντος τοῦ
καθόλου

By the 19th cent., the version of 100a6's *ek d'empeirias ...katholou* printed by Pacius seems to have decisively established itself as the vulgate text. Bekker—who for *Post. An. II.19* consulted the 3 manuscripts: A, B, and D—prints Pacius' text for 100a6 in his 1831 edition without recording the β-family alternative that omits *ē ek pantos* in his apparatus. While Ross (1949) and Waitz (1844-46) had no access to Abū Bishr's Arabic and were unable to consult manuscript D, both correctly note the omission of *ē ek pantos* at 100a6 in the first hand of manuscript n. But Ross (1949) and Waitz (1844-46) both print the vulgate text of Bekker/Pacius for 100a6. Due largely (I suspect) to their incomplete knowledge of the available evidence, neither editor bothers to justify doing so.

4.4 The proposal

It turns out to be clear that in the early medieval (and probably late ancient) world, two quite different versions of 100a6 were in circulation: a version that contained the words *ē ek pantos* and a version which didn't.³⁹ The *Post. An. II.19* that Aristotle actually

³⁹For purposes of this sentence, *ē ek pantos* is a stand in for the letter string HEKPIANTOS of which both ἡ ἐκ παντός and ἡ ἐκ παντός would be instances.

wrote wouldn't have contained both versions of 100a6. So text-critical reasoning is needed to determine what we ought to believe the authentic 100a6 to read.

We can speak, in particular, of the following two versions of 100a6's *ek d'...katholou*:

Version 1

ἐκ δ' ἐμπειρίας ἢ ἐκ παντὸς ἡρεμήσαντος τοῦ καθόλου

Version 2

ἐκ δ' ἐμπειρίας ἡρεμήσαντος τοῦ καθόλου

We've noted that **Version 1** is supported by (i) the "direct" testimony of certain α -family manuscripts, as well as (ii) the "indirect" testimony of certain 12-13th cent. Byzantine *Post. An.* commentaries and certain 12-13th cent. Latin *Post. An.* translations. We've noted that **Version 2** is supported by (i) the "direct" testimony of our β -family manuscripts, as well as (ii) the "indirect" testimony of Abū Bishr's 10th cent. Arabic *Post. An.* translation and the so-called "Anonymous commentary" on *Post. An.* II (whose discussions Moraux has shown to be excerpted largely, and perhaps exclusively, from Alexander). **Version 1** is printed by Pacius, Bekker, Waitz, and Ross and presupposed by all modern discussions of 100a3-9 I'm aware of. But significant evidence—some quite unknown Pacius, Bekker, Waitz, and Ross—supports **Version 2**.

Ultimately, I find it difficult to resist the following conclusion. Careful scrutiny of the relevant text-genealogical, linguistic, hermeneutical, and philosophical considerations tells strongly in favor of taking **Version 2** to preserve what Aristotle in fact wrote, and rejecting **Version 1** as spurious. I contend that the words \bar{e} *ek pantos* one reads at 100a6 in all modern editions of the *Post. An.* were not put there by Aristotle; I contend that in the transmission history of the text these 3 words were erroneously interpolated into

the α -family exemplar. This, in a nutshell, is my proposed response to the *aporia* of \bar{e} *ek pantos*.

To establish the basic viability of this, let's start with the most pressing text-genealogical issue it raises. If one adopts the hypothesis that **Version 2** of 100a6 is correct, the erroneous appearance of \bar{e} *ek pantos* in α -family manuscripts needs accounted for. Now, this can in fact be done in several plausible ways. But for present purposes, it suffices to rehearse two such plausible explanations—both appealing to one of the most common and widely recognized mechanisms of accidental interpolation.⁴⁰

If **Version 2** of 100a6 is correct, the erroneous emergence of **Version 1** could easily have resulted from a process like one of the following. (**Option 1**) The closeness of these uncial letter patterns is striking:

Η ΕΚ ΠΑΝΤΟΣ
ΗΡΗΜΗΣΑΝΤΟΣ

This suggests the following hypothesis. In the early transmission history of the *Post. An.*, a scribe erred in transcribing 100a6 by erroneously writing ἡ ἐκ παντός where s/he ought to have written ἡρεμήσαντος (perhaps the text of the source-manuscript was semi-legible at 100a6). As a result, ἡ ἐκ παντός enters the manuscript tradition as a *variant* for ἡρεμήσαντος. (NB that ἐκ δ' ἐμπειρίας ἡ ἐκ παντός τοῦ καθόλου ἐν τῇ ψυχῇ isn't non-sense). Later, a diligent scholar records ἡ ἐκ παντός as a *variant* for ἡρεμήσαντος in some α -ancestor (perhaps in supralinear position, perhaps in the left margin beside a line initial ἡρεμήσαντος). Finally, the scribe of some subsequent α -ancestor conflates this *reported variant* for a *proposed insertion* and erroneously writes ἡ ἐκ παντός in front of ἡρεμήσαντος. (**Option 2**) Scholars in the Greek world have long used

⁴⁰The following paragraph has greatly benefitted from conversations with David Blank.

the particle ἦ to introduce explanatory glosses and the like. This suggests the following hypothesis. At some point in the transmission history of the *Post. An.*, a scholar transcribes ἦ ἐκ παντός into her copy of the *Post. An.* as a meta-textual comment on 100a6 (perhaps as a kind of gloss on καθόλου, perhaps to indicate the manner of ἡρεμήσαντος τοῦ καθόλου ἐν τῇ ψυχῇ that's requisite for the emergence of τέχνης ἀρχῇ καὶ ἐπιστήμης). Later, the scribe of some α -ancestor conflates this *meta-textual comment* for a *proposed insertion* and erroneously writes ἦ ἐκ παντός in front of ἡρεμήσαντος.

For present purposes, we needn't dwell further on Options 1 and 2. Both can be tweaked in various ways; it can be argued that one of them is more likely than the other; and the same explanatory work can undoubtedly be done otherwise. All that matters here is that it needs to be admitted as a not-at-all-unlikely historical possibility that **Version 1** entered the *Post. An.* manuscript tradition through some such \bar{e} *ek pantos* interpolating event. And this much should now be clear.

At a minimum, the last few pages have shown that the collective testimony of our most important surviving text-witnesses to 100a6 no more *disfavors* the hypothesis that **Version 2** is correct than it *disfavors* the competing hypothesis that **Version 1** is correct. I submit, moreover, that there are strong linguistic, hermeneutical, and philosophical considerations that support adopting **Version 2** and rejecting **Version 1**. To start with the obvious, **Version 1** gives us a text with an unfortunate ambiguity (\bar{e}) and unnecessary obscurity (*pantos*). **Version 2**, in contrast, reads much more smoothly. In fact, with \bar{e} *ek pantos* out of the picture, the 100a3-9 we are left with is a well-balanced, and kind of beautiful, piece of Aristotelian prose.

To dig deeper, let's take a closer look at 100a3-9. We need to ask how 100a3-9 will need to be interpreted if **Version 2** of 100a6 is adopted. And we'll do well by starting with some points of grammar. The first thing to note is the prominence of the *ek men oun aisthēseōs...ek de mnēmēs...ek d' empeirias* structuring of 100a3-6. The finite verb *ginetiai* that's explicit in the *ek men* unit will need to be supplied twice: both with *empeiria* (100a5) to get the main clause of the first *ek de* unit, and also with *archē* (100a8) to get the main clause in the second *ek de* unit. (NB that 100a7-8's *tou henos...to auto* is in apposition to 100a6's *tou katholou*). Note finally, that in view of the text's pronounced *men...de...de* structure we'll want to take the participial clauses *pollakis tou autou ginomenēs* (100a4) and *ēremēsantos tou katholou en tēi psuchēi* (100a6) as grammatical parallels. Given the genders of the relevant participles, it seems that *mnēmēs* will have to be the (implied) subject of 100a4's *ginomenēs*, and that *tou katholou* will have to be the subject of 100a6's *ēremēsantos*.

Adopting **Version 2** of 100a6, I therefore propose translating 100a3-9 as follows:

So, **from perception** (as we say) memory comes to be. And **from memory**—when it comes to be of the same thing many times—**experience** comes to be (for, the memories, numerically many, [constitute] one experience). And **from experience**—**when the universal has come to rest in the soul** (the one over the many, whichever one it is that's present in all of those things the same)—**a foundation** [*archē*] of episteme or of craft-knowledge [*technē*] comes to be. (It's of craft-knowledge if it's [an *archē*] for generating; it's of episteme if it's [an *archē*] for being).

ἐκ μὲν οὖν αἰσθήσεως γίνεται μνήμη, ὥσπερ λέγομεν, ἐκ δὲ μνήμης πολλάκις τοῦ αὐτοῦ γινομένης ἐμπειρία, αἱ γὰρ πολλαὶ μνήμαι τῷ ἀριθμῷ ἐμπειρία μία ἐστίν. ἐκ δ' ἐμπειρίας ἡρεμήσαντος τοῦ καθόλου ἐν τῇ ψυχῇ, τοῦ ἐνὸς παρὰ τὰ πολλά ὃ ἂν ἐν ἅπασιν ἐν ἐνῇ ἐκείνοις τὸ αὐτό, τέχνης ἀρχὴ καὶ ἐπιστήμης, ἐὰν μὲν περὶ γένεσιν, τέχνης, ἐὰν δὲ περὶ τὸ ὄν, ἐπιστήμης.

If the authentic 100a3-9 is the one I've printed above, Aristotle's basic train of thought would look to be the following.

100a3-9 is sketching a highly abstract account of the intellectual progression whereby humans would acquire nous—a knowledge of demonstrative foundations that's suitable for grounding demonstrative episteme. The account is highly abstract because it's supposed to be general enough to cover all possible cases of demonstrative episteme. The account aims, that is, to capture *not only* how humans would develop states of nous needed to ground demonstrative episteme regarding (say) the natural world, *but also* how humans would develop states of nous needed to ground demonstrative episteme concerning truths studied in mathematics and metaphysics. (This bears emphasis because as *NE* 1142a16-20 makes clear there's a sense of “from experience” [*ek empeirias*] on which Aristotle will *deny* that nous of mathematical foundations is “from experience”). In fact, 100a3-9 presents its account as **so** abstract that it even captures how humans would acquire the kind of foundational knowledge on which craft-knowledge [*technē*] is based. But putting *technē* aside, we can say that 100a3-9 introduces four knowledge-furnishing states [*hexeis*] that humans can possess: (i) perception [*aisthēsis*], (ii) memory [*mnēmē*], (iii) experience [*empeiria*], and (iv) nous: i.e. the “foundation

of episteme” [*archē epistēmes*].

If the authentic 100a6 is **Version 2**, 100a3-9 will be presenting a highly abstract sketch of an intellectual progression in four stages:

perception $\xrightarrow{1}$ memory $\xrightarrow{2}$ experience $\xrightarrow{3}$ nous

100a4’s *pollakis tou autou ginomenēs* (“when [memory] comes to be of the same [thing] many times”) evidently describes a necessary condition for the occurrence of transition-2. And 100a6’s *ēremēsantos tou katholou en tēi psuchēi* (“when the universal has come to rest in the soul”) will likewise describe necessary a condition for the occurrence of transition-3. 100a5’s parenthetical *hai gar pollai mnēmāi tōi arithmōi empeiria mia estin* (“for, the memories, numerically many, are an experience that’s one”) strongly suggests that 100a4’s *pollakis tou autou ginomenēs* is intended as a rough-and-ready characterization of a necessary and sufficient condition for the occurrence of transition-2. And if this is correct, our text’s pronounced *men...de...de* structure will suggest that *ēremēsantos tou katholou en tēi psuchēi* correspondingly names a necessary and sufficient condition for the occurrence of transition-3. In fact, given a parallel passage in the *Phaedo* (96a6-b8)⁴¹

⁴¹ *Phd.* 96a6-c1 (NB 96b6-8 which I’ve bolded): ἐγὼ γάρ, ἔφη, ὦ Κέβης, νέος ὢν θαυμαστῶς ὡς ἐπεθύμησα ταύτης τῆς σοφίας ἦν δὴ καλοῦσι περὶ φύσεως ἱστορίαν· ὑπερήφανος γάρ μοι ἐδόκει εἶναι, εἰδέναι τὰς αἰτίας ἐκάστου, διὰ τί γίγνεται ἕκαστον καὶ διὰ τί ἀπόλλυται καὶ διὰ τί ἔστι. καὶ πολλὰκις ἑμαυτὸν ἄνω κάτω μετέβαλλον σκοπῶν πρῶτον τὰ τοιαῦτα· ἄρ’ ἐπειδὴν τὸ θερμὸν καὶ τὸ ψυχρὸν σηπεδόνα τινὰ λάβη, ὡς τινες ἔλεγον, τότε δὴ τὰ ζῶα συντρέφεται· καὶ πότερον τὸ αἶμά ἐστιν ᾧ φρονοῦμεν, ἢ ὁ ἀήρ ἢ τὸ πῦρ· ἢ τούτων μὲν οὐδέν, ὁ δ’ ἐγκέφαλός ἐστιν ὁ τὰς αἰσθησεις παρέχων τοῦ ἀκούειν καὶ ὄραν καὶ ὁσφραίνεσθαι, ἐκ τούτων δὲ γίγνοιτο μνήμη καὶ δόξα, ἐκ δὲ μνήμης καὶ δόξης λαβούσης τὸ ἡρεμεῖν, κατὰ ταῦτα γίγνεσθαι ἐπιστήμην· καὶ αὐτῶν τὰς φθορὰς σκοπῶν, καὶ τὰ περὶ τὸν οὐρανόν τε καὶ τὴν γῆν πάθη, τελευτῶν οὕτως ἑμαυτῷ ἔδοξα πρὸς ταύτην τὴν σχέψιν ἀφυγῆς εἶναι ὡς οὐδὲν χρήμα.

as well as Aristotle's well-known epistemic uses of the verb *hērmein* elsewhere,⁴² I think that our default assumption needs to be that on **Version 2** of 100a6, *ēremēsantos tou katholou en tēi psuchēi* does name a necessary and sufficient condition for the occurrence of transition-3. The noun phrase *tou katholou* (“the universal”) would then refer to the object of nous. Now, there are scholars who take “the universal” mentioned at 100a6 to be a *universal proposition*. But this proposal is severely undermined by Aristotle's own 100a7-8 gloss of the relevant phrase.⁴³ For 100a7-8 describes the universal in question as a “one over many” [*hen para ta polla*]: as something that can be uniformly “present within” [*enēi*] a plurality of things; and this is simply very hard to square with Aristotle's usual ways of thinking/speaking about universal propositions [*protaseis*]. Far more likely, I submit, is that “the universal” that “comes to rest in the soul” is an eternal and unchanging *universal nature*—roughly, an Aristotelian analogue of a Platonic Form. This very conceptual analogy, I suggest, is the basic philosophical point behind 100a7's self-consciously Platonic turn of phrase “one over the many” (cf. *Post. An.* I.11 77a5 ff., I.22 82a32-35).

Before drawing this section to a close, permit me a few final remarks on the relationship between *Post. An.* 100a3-9 and the *Phaedo* passage mentioned in the preceding paragraph (*Phd.* 96a6-b8). The opening of the so-called “philosophical autobiography”, the text of *Phd.* 96a6-b8 might be translated as follows (for Plato's Greek see footnote 41):

“O Cebes,” said [Socrates], “when I was young, I became incredibly passionate for

⁴²See, e.g. *DA* I.3 407a32 ff., *Phys.* VII.3 247b9 ff.

⁴³Further evidence against this proposal is that the items 100a15-100b5 calls “universal” are things like *animal* and *human being*.

the kind of wisdom which people call natural history [*historia peri phuseōs*]. For I thought it sublime—to know the explanations [*tas aítias*] of each thing: [to know] why each thing comes to be, why it perishes, and why it is. And many times I would turn myself back and forth, examining first of all the following sorts things: Is it the case, as some were claiming, that living things are assembled precisely when the hot and the cold start to decay? And it is *blood* by which we are wise [*phronoumen*]? Or is it *air*? Or *fire*? Or is it none of these, but it is rather *the brain* that furnishes the senses [*aisthēseis*] of hearing, seeing, and smelling? **And is it the case [as some were claiming]⁴⁴ that from the senses, memory [*mnēme*] and opinion [*doxa*] come to be, and from memory and opinion—when it has acquired fixedness [*to hērmein*—along these lines *epistēmē* comes to be?** (*Phd.* 96a6-b8)

The linguistic parallels between *Phd.* 96b6-8 (bolded) and *Post. An.* 100a3-9 are hard to exaggerate. Given the context and grammar (NB footnote 44) of the *Phaedo* text, it's quite likely that *Phd.* 96b6-8 and *Post. An.* 100a3-9 are both making conscious reference to some earlier Presocratic source. On the final analysis, I suspect Aristotle himself would have viewed *Post. An.* 100a3-9 as distilling a small handful of more-or-less widely accepted *endoxa* [≈ “reputable opinions”] about how humans develop intellec-

⁴⁴ I'm supplying ὡς τινες ἔλεγον (“as some were claiming”) from 96b3 as is grammatically necessary. Note the accusative-cum-infinitive of indirect speech γίγνεσθαι ἐπιστήμην at 96b8, and that γίγνοιτο at 96b7 is an optative of indirect discourse from the past.

tual virtue—*endoxa* drawn (I suspect) not only from Presocratic natural philosophy, but also from ancient debates about the epistemology of *technē*.⁴⁵

Our *Phaedo* passage (96b6-8) speaks of *epistēmē* emerging when an opinion/view [*doxa*] “has acquired fixedness” [*labousēs to hērmein*]. This latter idea is famously developed in the *Meno* (97e-98a) which explains that states of *epistēmē* come about when correct opinions/views [*orthai doxai*] are tied down. Above we translated the *Post. An.* 100a6 phrase *hērmēsantos tou katholou en tēi psuchēi* as “when the universal comes to a rest [*hērmēsantos*] in the soul”. But the verb *hērmein* from which *hērmēsantos* derives can indicate *unmovable presence* (“standing firm”) as well as *unmoving presence* (“standing still”). It’s arguable that an alternative translation like “when the universal has become fixed in the soul” better captures the thought behind 100a6’s *hērmēsantos tou katholou en tēi psuchēi*. At any rate, Aristotle’s considered view in the *Analytics* is that because a person’s episteme through a demonstration *D* must be rationally unshakeable [*ametapeiston*], the nous from which this person assents to *D*’s premises must itself be *no less* unshakeable (cf. *Post. An.* I.2 72a25-b3 to which the II.19 text 99b20-22 apparently refers).

5 Conclusion

The preceding sections have sketched, and worked to motivate, a controversial approach to *Post. An.* II.19—one

⁴⁵NB *Metaphysics* A.1’s 981a3-5 reference to the historical rhetorician Polus and/or the character Polus at *Gorgias* 448c; with *Metaphysics* A.1’s 981a7 ff. remarks on the epistemology of medicine cf. esp. *Laws* IV 720a ff., IX 857c ff. In speaking of *Post. An.* 100a3-9 as distilling *endoxa* concerning how humans develop intellectual virtue, I don’t mean to suggest—for, I see no reason to think—that Aristotle’s endorsement of 100a3-9 is “merely dialectical” or *qualified* in any such way.

considerably more deflationary than most. But we have not rehearsed a complete reading of the chapter.⁴⁶ For our main goal has been to recommend a novel solution to the aporia of *ē ek pantos*. The proposed solution, as I've said, is more a dissolution than a resolution of the underlying puzzle. But this dissolution I propose seems to me considerably more philosophically, hermeneutically, and textually satisfying than any alternative solution I'm aware of. For let us return to the chief arguments marshaled in favor of the "explicative" and "progressive" construals of 100a6's *ē ek pantos* respectively.

The chief argument in favor of the "explicative" reading and against the "progressive" alternative was that the "explicative" is more linguistically natural than the "progressive". Be this as it may, I submit that the variant *ek d' empeirias ēremēsantos tou katholou* is more linguistically plausible Aristotelian Greek than *ek d' empeirias ē ek pantos ēremēsantos tou katholou*. So with respect to considerations of linguistic naturalness, our proposed solution to the aporia of *ē ek pantos* in an important way looks to fare better than the "explicative" reading of *ē ek pantos*.

The chief argument in favor of the "progressive" reading of 100a3-9 and against the "explicative" alternative was that the "progressive" reading more closely coheres with a parallel text in *Metaphysics* A.1: i.e. 980a27-981a16. But this paper's proposal gives us a reading of 100a3-9 that coheres even better with 980a27-981a16 than the "progressive" reading does. For, recall that 980a27-981a16 describes a four stage in-

⁴⁶We have not, e.g., discussed the important question of what's meant by *epagōgē* at 100b4. For what it's worth, I think *epagōgē* at 100b4 does not mean what it does in the *Topics*; and I think that while translating *epagōgē* at 100b4 as "induction" can help illuminate later episodes in the history of philosophy, this translation significantly obscures what Aristotle himself is trying to say.

tellectual progression wherein the object grasped at stage-four is called ‘the universal’. Our proposed solution to the aporia of $\bar{e} ek pantos$ likewise has 100a3-9 describing a four stage progression wherein the object grasped at stage-four is called ‘the universal’; the upshot of the “progressive” reading of 100a3-9, in contrast, is a five stage intellectual progression wherein ‘the universal’ names the object grasped at a mysterious penultimate stage which Aristotle simply doesn’t seem to discuss anywhere else.

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