

POSTERIOR ANALYTICS 2.19: A DIALOGUE WITH PLATO?*

PETER ADAMSON

There is not much that is uncontroversial about the last chapter of Aristotle's *Posterior analytics*. But there does seem to be widespread agreement that the chapter contains at least two allusions to Plato. First, one of the problems Aristotle raises looks to be closely related to the problem set out in the *Meno*, of how learning is possible.¹ Second, the part of the chapter in which Aristotle describes our ability to reach universals on the basis of sense-perception, has a clear source in Plato:

Phaedo 96b4-8 (Grube trans., modified): Do we think with our blood, or air, or fire, or none of these, and does the brain provide our senses of hearing and sight and smell, from which come memory and opinion, and from memory and opinion which has come to rest, arises understanding (ἐκ τούτων δὲ γίγνεται μνήμη καὶ δόξα, ἐκ δὲ μνήμης καὶ δόξης λαβούσης τὸ ἡρεμεῖν, κατὰ γίνεσθαι ἐπιστήμην)?

APo 2.19, 100a3-8: So out of sense-perception comes to be memory, as we say, but from frequently coming to be memories of the same thing, [arises] experience. For memories that are many in number are a single experience. And from experience, or from the entire universal that has come to rest (ἡρεμήσαντος) in the soul [...] [arises] the principle of skill or of understanding (τέχνης ἀρχὴ καὶ ἐπιστήμης).²

The quote is not exact, and the differences between the two passages will occupy us below. But the parallel is strong enough that Barnes has gone so far as to say that 'the source of B 19 is to be found in Plato', citing this passage from the *Phaedo*.³

In the final section of this paper, I will propose that there is at least one additional Platonic reference in *APo* 2.19: the invocation of *nous* as a state of knowing superior to *epistêmê*. If this is right, then the three sections of 2.19 – the setting out of the problems (99b20-32), the explanation of 'how we come to know' the principles (99b32-100b5), and the identification of the 'state' which knows the principles (100b5-17) – all contain allusions to Plato. This suggests a hypothesis: Aristotle thinks Plato's puzzle about how we learn is applicable to the case of learning principles, so he uses Platonic materials

* This paper is heavily indebted to Verity Harte and M. M. McCabe, and not only for their detailed comments on a previous draft. My thanks to both of them.

¹ See e.g. J. Barnes, *Aristotle's Posterior analytics*, 2nd edition (Oxford 1994) 260-1; M. Ferejohn, *The origins of Aristotelian science* (New Haven 1991) 46; D. Hamlyn, 'Aristotelian epagoge', *Phronesis* 21 (1976) 167-80, at 173.

² Translations are mine unless otherwise noted.

³ Barnes, *Aristotle's Posterior analytics* (n.1, above) 259.

throughout his entire treatment of the question. This is not to say that Aristotle *agrees* with Plato concerning the process by which we get principles. It is rather to say that Plato is the dialectical opponent with whom Aristotle is engaged in 2.19. Aristotle confronts a Platonic difficulty, and deploys Platonic ideas and terminology in his solution, even though the solution he offers is non-Platonic.

Setting out the problems

Aristotle begins 2.19 by saying that it has now become clear what syllogism and demonstration (*sullogismos* and *apodeixis*) are, and how they come about. These questions have thereby been answered for demonstrative knowledge itself, ‘since this is the same’ (99b15-17). What remains is a question about *non*-demonstrative knowledge: ‘regarding the principles, how they become known and what is the state of knowing them, this will be clear shortly, once the problems have first been set out (περὶ δὲ τῶν ἀρχῶν, πῶς τε γίνονται γνώριμοι καὶ τίς ἢ γνωρίζουσα ἕξις, ἐντεῦθεν ἔσται δῆλον προαπορήσασαι πρῶτον)’ (99b17-19). Actually, Aristotle mentions two questions here: how principles become known, and what is the state of knowing them. As several commentators have noted, these two questions will be answered separately, which gives the ‘positive’ part of the chapter its structure.⁴ However, Aristotle says that he will first ‘set out problems’, which are evidently distinct from the two questions. Thus we have an aporematic section (99b20-32) which precedes the solutions to the two questions. It reads as follows:

That it is impossible to understand through demonstration without knowing the first immediate principles, has been said before. With regard to knowledge of the immediates, one might pose the problem whether it [*sc.* the knowledge] is the same or not, and whether there is understanding of each [or not⁵], or there is understanding of the one and something of a different sort of the other, and whether the states are not in us and come to be, or are in us without our being aware of them. If we do have them, this is strange. For it would mean that we have instances of knowing more exact than demonstration, but are unaware of them. But if we acquire them, not having had them before, how will we know and learn them without it being from pre-existing knowledge? For that is impossible, just as we said in the case of

⁴ See Barnes, *Aristotle's Posterior analytics* (n.1, above) 260, 268; see also *e.g.* T. Engberg-Pedersen, ‘More on Aristotelian *epagoge*’, *Phronesis* 24 (1979) 301-17 (314); L. A. Kosman, ‘Understanding, explanation and insight in Aristotle's *Posterior analytics*’, in *Exegesis and argument*, eds E. N. Lee *et al.* (Assen 1973) 374-92 (385); C. C. W. Taylor, ‘Aristotle's epistemology’, in *Companions to ancient thought I: Epistemology*, ed. S. Everson (Cambridge 1990) 116-42 (127). It is vital to distinguish between the two questions, because it helps dispel the notion that there are two rival accounts of how we come to know the principles: on the one hand an ‘empiricist’ doctrine that invokes *epagôgê*, on the other a ‘rationalist’ doctrine that invokes *nous*. As emphasized especially by Barnes, *nous* is not a name for the process or faculty by which we derive principles. It is the name for the *hexis* that results at the end of that process, where the principles are being grasped.

⁵ ἢ οὐ is deleted in W. D. Ross (ed.), *Aristotelis Analytica priora et posteriora* (Oxford 1968), but retained by Barnes. W. D. Ross, *Aristotle's Prior and Posterior analytics* (Oxford 1949) 676 notes that ἢ οὐ ‘is clearly superfluous’ and unsupported by Eustratius and Philoponus.

demonstration. It is then clear that it cannot be either that one has them [already], or that they come to be after one is ignorant and has no state at all.

This opening section is typically, even self-consciously, dialectical. Not only do we have the statement of ‘problems’ (*aporiai*), from which the solution to our questions is supposed to emerge, but two positions are set out and then rejected, so that Aristotle’s solution may appear as a happy medium between them.

Let us first look at the three problems Aristotle sets out:

- (a) Is knowledge (*gnōsis*) of immediates the same as knowledge of what is demonstrated?
- (b) Is there understanding (*epistēmē*)⁶ of both, or is there understanding for one and another sort of knowledge for the other (τοῦ μὲν ἐπιστήμη τοῦ δ’ ἕτερόν τι γένος)?
- (c) Do the states of knowing come to be after not being present, or are they present without our being aware?

Problem (b) presupposes a negative answer to (a). That is, there is indeed a difference between the *gnōsis* of immediates – *i.e.* principles⁷ – and the *gnōsis* of what is mediated by demonstration. Given that they are different, problem (b) arises: is the *gnōsis* of principles *epistēmē*, which as we know is the appropriate word for the *gnōsis* of things demonstrated? Seen in this light, the problem at hand may seem to be merely terminological, so that it amounts only to asking whether we should call our knowledge of principles *epistēmē* or something else. But of course, the point is also a substantive one. Since, as already made clear in the first sentence of the chapter, demonstrative understanding (ἐπιστήμη ἀποδεικτική) is understanding through a demonstrative syllogism, Aristotle’s problem amounts to the question of whether we know the principles by means of a demonstrative syllogism.

The problem is one that has been mentioned already at *APo* 1.3.⁸ That chapter criticizes two unsatisfactory views, both of which assume that all understanding results from demonstration. Some argue that there must be first principles (πρώτα) to prevent an explanatory regress, but since principles are by their very nature undemonstrated, they cannot be understood. And if they are not understood, neither is anything based upon them. This group draws the skeptical conclusion that understanding is impossible. Others

⁶ For this translation of *epistēmē* and an illuminating discussion of epistemic terminology in Aristotle, see M. F. Burnyeat, ‘Aristotle on understanding knowledge’, in *Aristotle on science: the Posterior analytics*, ed. E. Berti (Padua 1981) 97-139. In this paper I will use the term ‘knowledge’ without qualification only in the broad sense that corresponds to *gnōsis*: in other words, I will use it inclusively of both *epistēmē* and *nous*.

⁷ For another use of *amesos* to refer to the *archai* see *APo* 1.2, 71b21. As noted by Barnes, *Aristotle’s Posterior analytics* (n.1, above) 94, ‘indemonstrable’ replaces ‘immediate’ at 71b26-8. As Barnes says, ‘to be immediate is to lack a middle term’, where I suppose that by ‘middle term’ he means a genuinely explanatory middle term. That is, if ‘all A’s are C’s’ is ‘immediate’ then it stands in need of no explanation, whether or not we could find some B such that all A’s are B’s and all B’s are C’s. Cf. also *APo* 1.10: ‘I call principles in each kind those items of which it is not possible to prove that they are (λέγω δ’ ἀρχὰς ἐν ἐκάστω γένει ταύτας ὡς ὅτι ἔστι μὴ ἐνδέχεται δεῖξαι)’ (76a31-2, Barnes trans.).

⁸ See also the closely related 1.22.

accept circular demonstration, and so are able to say that everything is genuinely understood, and understood in the same way. Aristotle has already told us his own view, in opposition to these rival theories:

APO 1.3, 72b18-25 (Barnes trans.): We assert that not all understanding is demonstrative: rather in the case of immediate items understanding is non-demonstrative. And it is clear that this must be so; for if you must understand the items which are prior and from which the demonstration proceeds, and if things come to a stop at some point (ἴστανται δέ ποτε), then these immediates must be indemonstrable. We argue in this way, and we also assert that there is not only understanding but also some principle of understanding (οὐ μόνον ἐπιστήμην ἀλλὰ καὶ ἀρχὴν ἐπιστήμης) by which we get to know the definitions (ἧ τοὺς ὄρους γνωρίζομεν).

On the one hand, this passage fits well with 2.19, because it denies that there are demonstrations of the first principles. This is presumably why Aristotle tacitly assumes a negative answer to problem (a) in 2.19: he has already given the answer explicitly in 1.3. On the other hand, in 1.3 Aristotle seems to accept that we could call our knowledge of the principles ‘understanding’. It would just not be *demonstrative* understanding. In 2.19, by contrast, he will go on to reserve the word *epistēmē* exclusively for the kind of knowledge that results from demonstration. I will later return to the question of why he operates with a more restricted meaning of *epistēmē* in 2.19.⁹

In any case, the aporetic section of 2.19 seems hereafter to drop problems (a) and (b), focusing instead on problem (c). Perhaps this is because we already know the answer to problem (a), while problem (b) is relevant to the second question of 2.19, namely ‘what is the state in which we know principles’. So it will be picked up in the last section of the chapter. Problem (c), by contrast, will push us towards considering the first question, about *how* we know principles. Yet problem (c) is not unrelated to what has come before. At first glance it is hard to see this, or even to see what problem (c) is asking about. Aristotle speaks simply of ‘states (ἔξεις)’: does this mean, for instance, both the state of demonstrative understanding *and* the state in which we know the principles of demonstration? What follows seems to rule this out, and to show that Aristotle is only asking about the states in which we know principles. For he says that if we have the states already, ‘it would mean that we have instances of knowing more exact than demonstration (ἀκριβεστέρας ἔχοντας γνώσεις ἀποδείξεως), but are unaware of them’ (99b27). So what problem (c) in fact does is to present two possible solutions to the regress issue already discussed in *APO* 1.3. As in 1.3, we are given two views, neither of which Aristotle accepts. But now, the views seem to be closer to what Aristotle *would* accept, because they presuppose that we can have a knowledge of principles (rather than saying principles

⁹ Another point of contrast between 1.3 and 2.19 is less important for us: Aristotle specifies in 1.3 that the ‘principle of understanding’ involves knowing *horoi*, which Barnes translates as ‘definitions’. The question of how the principles of demonstration relate to definitions is a difficult one, and I will avoid committing myself to any particular view on it. If I am successful in showing that 2.19 is a response to Plato, *and* one holds that 2.19 deals with definitions, then obviously it will be an interesting question whether and how 2.19 relates to Platonic discussions of definition. For this issue see M. Ferejohn, *The origins* (n.1, above).

could not be known, like the skeptics of 1.3, or that principles are unnecessary, like the circular reasoners of 1.3). The dilemma, then, is whether the instances of knowing the principles are acquired from nothing, or already possessed.

One way of reading this dilemma is that the first position is Aristotle's, and the second Plato's. On this reading it would be Aristotle who thinks that the principles 'are not in us and then come to be'. He would then explain how they come to be, in the following section on *epagôgê*. And it would be Plato who thinks that we have the principles all along but without being aware, because we have forgotten them. But this reading is obviously wrong, at least on the first score, because Aristotle concludes the aporetic section by dismissing both of the positions envisioned by problem (c). He rejects the 'acquisition from nothing' theory, saying that the states 'come to be after one is ignorant and has no state at all (μηδεμίαν ἔχουσιν ἔξιτιν)' (99b31-2). One might also translate 'and one has no having at all', since the noun *hexis* of course comes from the verb *echô*. What Aristotle is saying is that before we come to know a principle fully, we must have it in a sense and not have it in a sense. To put it another way, what problem (c) presents is a false dichotomy.

Now, we have seen Aristotle make a point like this before, in *APo* 1.1. Aristotle's mention of the need for pre-existing knowledge in order to gain new knowledge, and the phrase 'just as we said in the case of demonstration', would seem to refer back to *APo* 1.1. There, he distinguished between knowing something absolutely (ἀπλῶς) and knowing it universally. I know universally that every triangle has internal angles equal to two right angles, but I do not yet know it of *this* triangle absolutely because I do not yet know this triangle exists. So before I know this triangle exists, in a sense I have knowledge of it, and in a sense I do not. But we should not assume that Aristotle's distinction between absolute and universal knowledge is supposed to deal with the problem about regresses in demonstration. When he refers back to 1.1, he is only saying that the two problems are analogous (the Greek is ὡσπερ).¹⁰ In 2.19, the sense in which I both have and do not have a state of knowing the principles is rather that I have a 'power (δύναμις)' which makes it possible for me to know them. This is the solution that will be set forth in the first positive section, beginning at 99b32. It develops nicely out of this aporetic section, and especially problem (c), because it is presented as a compromise between the two views envisioned in that *aporia*. We neither acquire the states from nothing nor have them already. Rather, we are born with a power which is ultimately responsible for our knowledge of the principles.¹¹

What about the identification of the second rejected view (viz. that we have the principles already) with Plato's recollection theory? This is more tempting than ascribing the 'acquisition from nothing' theory to Aristotle, and as Barnes notes could be encouraged by

¹⁰ As Gail Fine's paper in the present volume points out, the issue in 1.1 is a rather narrow one: what happens when we learn something about a particular that we already knew universally. Because this is a special problem there is no reason to think the solution offered there would apply to all learning. A similar point is made by D. Hamlyn, 'Aristotelian *epagoge*', *Phronesis* 21 (1976) 167-80 (174). Hamlyn indeed specifies that the acquisition of principles would not be covered by the response to *Meno*'s paradox given in 1.1.

¹¹ Notice that *dunamis* can be invoked both with regard to the 1.1 problem and the 2.19 problem, since in the 1.1 case I 'potentially' know that this triangle is equal to two right angles. To actualize my knowledge I need only know that it exists and is a triangle.

the fact that Plato speaks of knowledge being ‘present in us’ before we recollect.¹² But it has its own difficulties. For one thing, Aristotle’s response to the view would be disappointingly abrupt and dismissive, if we assume it is Plato’s: he just says ‘if we do have them, this is strange (ἄτοπον)’, because these are such ‘exact’ states and yet we would ‘not be aware (λανθάνειν)’ of them. In fact, this doesn’t even look like a serious attempt to criticize Plato. Surely the whole point of saying we have forgotten our knowledge is to show how we could have it without being aware of it? Perhaps one could extract a better objection to Plato from what Aristotle says here. But it might be better not to try. A closer look at the *Phaedo* shows that Plato himself already presents the recollection theory as a compromise between two extreme views, much like the extreme views envisioned here in Aristotle’s problem (c). The *Phaedo* is famous for rejecting the possibility that we acquire ideas like ‘equality’ entirely from our sense-perception of equal things. But the *Phaedo* also rejects the possibility that we ‘were born with the knowledge (ἐπιστάμενοι) and all of us know it throughout life’ (76a4-5). For ‘a man who has knowledge (ἐπιστάμενος) would be able to give an account of what he knows’ (b5-6, Grube trans.), but in fact we see that people are unable to give an account. Plato’s position is very like Aristotle’s. He rejects two views, according to which knowledge is wholly acquired or wholly possessed, in favor of the claim that although in one sense we have knowledge from birth, in another sense we do not. If we did *actually* have it, we would know we had it and would be able to give an account.¹³ What the recollection theory claims is not that the learner actually has knowledge from birth, but that the learner had actual knowledge *before* birth, which now needs to be recovered through recollection.

Now, Aristotle may not be alive to this subtlety in Plato’s portrayal of recollection. Perhaps he does think that ‘we always have knowledge but are unaware’ is a reasonable way of characterizing the recollection theory. Alternatively, perhaps Aristotle thinks that recollection is a response to the problem of how we know principles on a par with his own response: a way of showing how we can both have and not have such principles. For my purposes, either interpretation will do. The more important point is that Aristotle assimilates the *Meno* problem to his own difficulty about the principles of demonstration, so that the recollection theory becomes an attempt to dissolve this difficulty. It seems

¹² Barnes, *Aristotle’s Posterior analytics* (n.1, above) 261, citing *Phaedo* 73a and *Meno* 85c.

¹³ The parallel between Aristotle and Plato is even stronger if, with Barnes (*ibid.* 261), we think Aristotle means at 99b27 that *other people* could not be unaware of someone’s knowing something (for instance, if an infant knew the principles, this could not escape the notice of those observing the infant). In that case, the ‘awareness’ in question could be closely linked to the idea of giving an account: for with his point that the knowledgeable man can give an account, Socrates too emphasizes that knowledge can be discerned by others. Despite this Barnes seems to assume throughout his commentary that the position criticized by Aristotle in 2.19 is simply Plato’s. I myself am skeptical of Barnes’s reading here, and would point to a different kind of parallel between Plato and Aristotle, on the assumption that it is the knower himself who is aware (or not) of his own knowledge. In that case, what Aristotle is assuming is that knowledge, or at least the kind of knowledge in question here, which is more exact even than demonstration, entails knowing (or at least not being unaware) that one knows. This is a constraint which Plato also frequently seems to endorse (for instance in the *Charmides*). It may be that Aristotle speaks of awareness, and not of giving an account, simply because it is problematic to speak of ‘giving an account’ in the case of first principles. See further n.21 below.

clear that he does make this assimilation, even if we decide that Plato's recollection theory should not straightforwardly be identified with the option presented in problem (c). There are several signs of this in the text. As noted above, the 'present in us' language used in problem (c) is borrowed from Plato. As also noted above, the demand for 'pre-existent knowledge' at 99b29 points us towards 1.1, which explicitly mentions the *Meno*.¹⁴ The mention of 'learning' in this sentence is another gesture towards the *Meno* problem. Finally, 2.19 will go on in the immediate sequel to discuss memory. As I will argue in the next section, this can be understood as a continuation of the engagement with Plato's recollection theory.

Before moving on to that part of 2.19, we should dwell for a moment on the question of whether Aristotle is right to see his problem (c) as intimately related to Plato's problem in the *Meno*. In one sense he seems justified. Both problems consist in a dilemma in which we cannot come to know something, because we either know it already or do not know it *at all* (compare ἀγνοοῦσι καὶ μηδεμίαν ἔχουσιν ἔξι in *APo* 99b31-2 to μὴ οἶσθα τὸ πᾶραπαν at *Meno* 80d6). It is only when we reflect on the context of Aristotle's problem that the parallel seems less persuasive. In 2.19 Aristotle is concerned not with the acquisition of any knowledge whatsoever, but with how we get to know first principles. In the *Meno*, by contrast, the problem seems to be a more general one, about the possibility of all learning. Admittedly, unless Aristotle can show how principles are knowable, all knowledge will for him be impossible; so this may be a distinction without a difference. And certainly Aristotle would be on firm ground in seeing his worry about how we get principles as a special case of Plato's worry in the *Meno* about how we learn. Still, if Aristotle is here in dialogue with Plato, we might expect him to turn his attention to Platonic passages that deal more directly with the issue of principles (*archai*). That, I will argue, is exactly what happens later in 2.19, with the invocation of *nous*.

II The first question answered: epagôgê and memory

The next, and longest, part of 2.19 is devoted to answering the first question: how do the principles become known? As we have seen, the aporetic part of the chapter has moved us towards the outline of a solution: we must both have and not have knowledge of them, which means having a *dunamis*, rather than having actual knowledge or having no relevant state at all. The *dunamis* in question is our capacity for sense-perception. However, Aristotle immediately adds that this power 'will not be superior in exactness to these (μὴ τοιαύτην δ' ἔχειν ἢ ἔσται τούτων τιμιωτέρα κατ' ἀκριβείαν)' (99b33-4), where the referent of 'these (τούτων)' would seem to be the *hexeis* back at line 25.¹⁵ In other words the power which is ultimately responsible for our knowledge of principles is less

¹⁴ One might add that another explicit mention of the *Meno* problem, in *Prior analytics* 2.21, 67a21-25, mentions *epagôgê*. This provides a link between that passage and 2.19, though it is clear that the *Prior analytics* passage has to do with the problem of *APo* 1.1 (even including the same example of the triangle), not the problem of getting principles.

¹⁵ Or, what amounts to the same thing, the 'instances of knowing more exact than demonstration' at line 27; I take it that the *gnôseis* are identical with the *hexeis*. Obviously the mention of exactness at line 27 is picked up here at line 34.

honourable than the knowledge of principles which arises from that power. In fact, much less honourable, as is shown by the next remark that this power ‘is present in all animals’.

This remark, I think, is meant to be jarring. How could the faculty which gives us knowledge about principles, and thus the summit of all knowledge, be present in even the lowliest animals? Aristotle’s comment about whether the power is ‘honourable’ ensures that we do not overlook how surprising this is. One is tempted to say that Aristotle is here moving on to a wholesale rejection of Plato’s epistemology, or even an inversion of it. For, as every undergraduate knows, Plato thought that sense-perception cannot lead to knowledge, and that it is the immaterial soul that knows through its direct confrontation with the Forms, from before we were born. Aristotle, by contrast, is claiming that sense-perception, shared even with the animals, can give us the knowledge of ‘the one over (παρά) the many’ as he goes on to say at line 100a7. Of course, for Aristotle the one over the many is a universal, rather than a Form, but the phrase helps to make the polemic clear. However, although it is right to say that the passage as a whole responds critically to Plato’s epistemology, a glance at the *Phaedo* again shows that Aristotle is closer to Plato than one might think:

Phaedo 74e9-75a8 (Grube trans.): Socrates: We must then possess knowledge of the Equal before that time when we first saw the equal objects and realized (ἐνενοήσαμεν) that all these objects strive to be like the Equal but are deficient in this.

Simmiās: That is so.

Socrates: Then surely we also agree that this conception of ours derives from seeing or touching or some other sense-perception, and cannot come into our mind in any other way, for all these senses, I say, are the same (ἀλλὰ μὲν καὶ τόδε ὁμολογοῦμεν, μὴ ἄλλοθεν αὐτὸ ἐννενοηκέναι μηδὲ δυνατόν εἶναι ἐννοῆσαι ἀλλ’ ἢ ἐκ τοῦ ἰδεῖν ἢ ἄψασθαι ἢ ἐκ τινος ἄλλης τῶν αἰσθήσεων· ταῦτόν δὲ πάντα ταῦτα λέγω).

What Plato says here is compatible with Aristotle’s claim that it is the *dunamis* of sense-perception that gives us knowledge. Indeed Plato emphasizes that there is no other way (μὴ ἄλλοθεν) to reach knowledge of the Equal than by sense-perception. The difference is, of course, what sense-perception gives rise to. For Plato, the result of sense-perception is *recollection*, whereas for Aristotle it is *memory*.

What is then the difference between recollection (ἀνάμνησις) and memory (μνήμη)? To find out we can turn to Aristotle’s treatise *On Memory*, which explicitly discusses the distinction at the beginning of its second chapter. In what I take to be a swipe at Plato’s recollection theory, Aristotle begins by saying that ‘recollection is neither the recovery nor the acquisition of memory. For when someone first learns or experiences something, he does not recover any memory, since none has preceded’ (451a20-3, Sorabji trans.).¹⁶

¹⁶ I take the point made at R. Sorabji, *Aristotle on memory*, 2nd edition (Chicago 2004) 89, that chapter 2 of *On Memory* does not have criticism of Plato as its ‘main purpose’. Rather, it seems to me that Aristotle’s goal is to explain what recollection would be in the context of his own epistemology. But this very goal presupposes a rejection of Plato’s epistemology, which is underscored by his remark here that when we *first* learn things we are not recovering them (τὸ πρῶτον μάθη). It has been argued that the first chapter of *On Memory* is more thoroughly a reaction

As is here implied, recollection is the recovery of some experience or knowledge after a period of absence, whereas memory can follow on immediately from an experience without any gap (451a31-b5). Another important difference between memory and recollection is that, as was already argued in *On Memory* chapter 1, memory belongs essentially to *phantasia* and is thus present even in some lower animals. The only requirement is that the animal must be able to perceive the passage of time (449b28-30). By contrast recollection is ‘a sort of reasoning (συλλογισμός τις)’, and is thus found only in humans (453a7-10). In short, recollection cannot be the explanation of how we come to know. This is because the recollection of knowledge presupposes that we have already *actually* had the knowledge (the very same knowledge we are now coming to know), and then ceased to have it actually. Aristotle, unlike Plato, thinks that the learner has never actually had knowledge.

Memory, by contrast, can help to explain how we come to know, because it ‘holds the sense-perceptions in the soul’ (*APo* 2.19, 99b49-100a1). After all, the *dunamis* that Aristotle invokes at 99b32-3 is not a *dunamis* for knowing principles, it is a power to perceive sensible particulars. So he owes us an account of how we can bridge the gap from the sort of sense-perception shared even with animals and the exalted state which he will go on to call *nous*. Memory helps to bridge this gap, but it is not enough by itself. We must also add the capacity for ‘experience (ἐμπειρία)’, which is possessed by a sub-group of those animals who possess memory.¹⁷ And now Aristotle makes the central claim of the chapter as a whole:

APo 2.19, 100a6-8: And from experience, or from the entire universal that has come to rest in the soul – the one over the many, which is one and the same in all those [many things] – [arises] the principle of skill or of understanding.

to Plato; see H. Lang, ‘On Memory: Aristotle’s Corrections of Plato’, *Journal of the History of Philosophy* 18 (1980) 379-93.

¹⁷ The same hierarchy of animals – those capable of sensation, those additionally capable of memory, those additionally capable of experience – is set out in *Metaphysics* A.1, 980a27-981a1 (Ross trans., modified): ‘By nature animals are born with the faculty of sensation, and from sensation memory is produced in some of them, though not in others. And therefore the former are more intelligent (φρονιμώτερα) and apt at learning (μαθητικώτερα) than those which cannot remember... The animals other than man live by appearances and memories, and have but little of experience (ἐμπειρίας δὲ μετέχει μικρόν); but the human race lives also by art and reasonings (τέχνη καὶ λογισμοῖς). And from memory experience is produced in men; for many memories of the same thing produce finally the capacity for a single experience (αἱ γὰρ πολλὰ μνήμαι τοῦ αὐτοῦ πράγματος μᾶς ἐμπειρίας δύναμιν ἀποτελοῦσιν).’ It’s interesting to notice that even too Aristotle draws a connection between memory and learning (μάθησις), and admits that here too animals can learn. For the relation between A.1 and *APo* 2.19, see Barnes, *Aristotle’s Posterior analytics* (n.1, above) 262; D. Charles, *Aristotle on meaning and essence* (Oxford 2000) 150ff.; M. Frede, ‘Aristotle’s Rationalism’ in *Rationality in Greek thought*, eds M. Frede and G. Striker (Oxford 1996) 158-173.

Though it has been said that this ‘sounds like pulling rabbits out of a hat’,¹⁸ in fact the passage has built up gradually to the point at which the ‘principle of understanding’ arises. A whole sequence, which delineates both a hierarchy of cognitive states and a hierarchy of the types of animals which have those states, culminates in this reference to the *archê*. As intimated above, the reason Aristotle gives this detailed exposition is to explain how such an honourable result could emerge from such a humble capacity as sense-perception. The nested capacities of memory and experience do the work that pre-existent knowledge is meant to do in Plato’s recollection theory. That is, they explain how one can begin from sense-perception and end up with knowledge.¹⁹

But how can we be so sure that Aristotle still has Plato in mind here? The most obvious reason is the one given at the beginning of this article. The sequence ‘sense-perception, memory, understanding (*ἐπιστήμη*)’ is taken from the *Phaedo*, which ironically is also one of the two dialogues to set out the theory of recollection. But perhaps this is not so much ironic as a case of Aristotle’s dialectical method. He says here to Plato, in effect, ‘your idea about recollection is unnecessary, because in the very dialogue where you discuss it you have given an adequate substitute mechanism: sense-perception which yields memory and thus, eventually, knowledge’. He ignores the fact that the passage on memory in the *Phaedo* comes at the outset of Socrates’ autobiography, and is in the form of a question – a kind of proposed topic of research on the part of the young Socrates. There is even less reason than usual to pluck this passage out of context and treat it as a Platonic doctrine, or even as a doctrine Plato would find attractive. But I suspect this is not carelessness on Aristotle’s part. Rather, he is deliberately exploiting a Platonic resource to answer a Platonic question, even though it was not so exploited by Plato himself. To this extent, the passage is an *ad hominem* polemic. But the polemic is a subtle one.

Aristotle’s procedure looks even more subtle when we make a closer comparison between *Phaedo* 96b and *APo* 100a3-8. Plato says that from sense-experience comes not only memory but also opinion, and that from *both* of these, when opinion comes to rest, there arises understanding. Aristotle retains the idea of ‘coming to rest’ but not its application to opinion: he says ἐκ δ’ ἐμπειρίας ἢ ἐκ παντὸς ἡμερήσιαντος τοῦ καθόλου. Here the force of ἢ is unclear. It may be exegetical, or may be a kind of correction in light of the fact that experience has to do with particulars rather than universals.²⁰ Either way,

¹⁸ C. H. Kahn, ‘The role of *nous* in the cognition of first principles in *Posterior analytics* 2.19’, in *Aristotle on science: the Posterior analytics*, ed. E. Berti (Padua 1981) 385-414 (401).

¹⁹ Notice that in a sense Plato’s epistemology as set out in the *Phaedo* is as ‘empiricist’ as Aristotle’s. As we saw, Plato says at 75a that there is no way other than sense-perception to reach conceptions like Equal. Likewise, in *APo* 2.19 Aristotle is concerned only with principles that emerge somehow from sense-perception. If there are principles that do not have their basis in sense-perception (perhaps principles of reasoning like the principle of non-contradiction would be an example), Aristotle is not interested in them here; but the same is true for Plato in our passage from the *Phaedo*.

²⁰ So Charles, *Aristotle on meaning and essence* (n.17, above) 149-50, referring us to *Metaphysics* A.1, 981a5-17: ‘experience concerns particulars, while skill concerns universals, and actions and productions are concerned with individuals’. But for instance Sorabji, *Aristotle on Memory* (n.16, above), xxi, reads the ἢ as exegetical. J. H. Lesher, ‘The meaning of *NOYΣ* in the *Posterior*

Aristotle has made two modifications. First, he gives memory an exclusive and indispensable role, whereas Plato apparently puts it on a par with opinion. Second, he eliminates *doxa* from the account entirely, and replaces it with experience, or the ‘whole universal’ which arises out of experience.

This may not be the only disappearing *doxa* in our passage. Aristotle has just spoken of a ‘principle of skill or of understanding (τέχνης ἀρχὴ καὶ ἐπιστήμης)’, and he goes on to explain the difference: ‘if it is coming-to-be that is in question, then skill, but if being, then understanding (ἐὰν μὲν περὶ γένεσιν, τέχνης, ἐὰν δὲ περὶ τὸ ὄν, ἐπιστήμης)’ (100a9). This contrast between *genesis* and *on* (or *ousia*) is familiar from Plato. To take two prominent passages, *Republic* VII (533e-534a) uses the contrast in the second account of the divided line; and *Timaeus* 27d-28a distinguishes a domain of coming-to-be from a domain which always is. Both passages make that which comes-to-be the object of *doxa* – in the *Republic* this is of course subdivided into *eikasia* and *pistis*. And both passages also make being the object of *noēsis* – which in the *Republic* is subdivided into *dianoia* and *epistēmē*. I will return to this welter of terminology in the next section of the paper. For now, I want to point out only that Aristotle may well have in mind Plato’s contrast between *genesis* and *on*. If so, he has made exactly the same modification as he did to *Phaedo* 96b, by eliminating *doxa* as that which grasps coming-to-be. This time he replaces it with *technē*, a notion also mentioned as the result of experience in *Metaphysics* A.1.

Why would he twice remove talk of *doxa* in this way, only to bring it up in the last section of 2.19, at 100b7? There are, I speculate, two reasons. First, and rather unsurprisingly, he thinks that knowing about the domain of *genesis* is an important undertaking, and thus honours it with the term *technē*. Second, and more important for us here, he wants to avoid Plato’s suggestion that opinion is a necessary step on the way towards knowledge of principles. It is not clear what Plato means by saying at *Phaedo* 96b that opinion must ‘come to rest’ in order to give rise to understanding. A natural thought is that it is the same requirement alluded to at *Meno* 97e-98a, when Plato says that true opinion must be ‘tied down’ by giving an *aitias logismos*. If this is what Aristotle understood Plato to mean, we can see why he resists the suggestion in the present context. Giving an *aitias logismos* sounds very like giving a demonstration, whereas what we are interested in here is undemonstrated principles. (Again, one should bear in mind that Aristotle’s concerns here in 2.19 are narrower than Plato’s concerns in the *Phaedo* and *Meno*: he is trying to explain how we know principles, not how we know anything whatsoever.) Of course it is controversial what exactly is involved in the experience or the universal ‘coming to rest’, which is the key step in the process that will be called *epagōgē* at 100b4. But it seems uncontroversial to say that whatever this process consists in, it cannot require giving anything like an explanation or account that transforms a true opinion into a principle. As Aristotle has already said in 1.3, if we needed to give an explanation, it would not be a principle.²¹

analytics’, *Phronesis* 18 (1973) 44-68 (59), mentions both options but finds the corrective reading (‘or rather’) to be ‘perhaps preferable’.

²¹ This point should be borne in mind when trying to understand the sense of ‘account (*logos*)’ at 100a2 (‘for some [animals] an account comes to be from the remaining of such things, and for some not’). This had better not mean anything like a demonstration, or even a justification, for the truth of some belief – even though *logos* is used with that very meaning later in the chapter (100b10).

For Aristotle, then, we get a principle when ‘the whole universal [comes] to rest in the soul’ (100a6-7). When this happens, the process of *epagôgê* ‘comes to a stop’.²² This is expressed by the famous simile of the soldiers, who bring the retreat to an end by each ‘making a stand’ (100a12). The verb ἵστημι (‘make a stand’ or ‘come to a stop’) is then used in a more metaphorical sense throughout the rest of this section (at 100a15, and twice at 100b2). It also appeared previously in *APo* 1.3: ‘for if you must understand the items which are prior and from which the demonstration proceeds, and if things come to a stop at some point (ἵσταται δὲ ποτε), then these immediates must be indemonstrable’ (72b20-22, Barnes trans.). In both cases, what Aristotle means by ‘making a stand’ is simply the fact that a principle is reached. But the two contexts are rather different. In 1.3, Aristotle means that a chain of demonstrative syllogisms ‘comes to a stop’ at the undemonstrated principle. Here in 2.19, by contrast, he means that our knowledge of a universal – or, as he describes at 100b1-3, several related universals – emerges from our repeated encounters with particulars.

Given the careful way that Aristotle has reworked the sequence from *Phaedo* 96b, it is all the more puzzling to notice that this famous simile of the soldiers who halt their retreat fails to capture Aristotle’s disagreement with Plato. I have argued that their disagreement is epitomized by the contrast between memory and recollection. Whereas memory naturally emerges from sense-perception, recollection consists in the recovery of knowledge or experience that has already been actually present, but subsequently become only potential. If we apply this to the case of the principles, then both Aristotle and Plato can say that the principles are present in one way (potentially), but not in another way (actually). The difference is that for Plato the potential presence is explained by *previous* actual presence, which needs to be *restored*. Now consider the soldiers: ‘like in a battle a retreat is stopped by one man standing, then another, until the initial formation is restored’ (100a12-13). Here ‘initial formation’ renders *archê*. This seems to be a play on words, and there is some uncertainty about how best to translate it and even whether the text might need emendation.²³ But whatever we make of *archê*, the simile seems to presuppose that the soldiers were *previously* in the correct formation or position, that this formation or position was lost as they broke into retreat, and that it needs to be *restored*.

Rather, I would suggest that the *logos* is something along the lines of an empirical observation about the particulars I have observed, and is achieved once one has not only memory but also *empeiria*.

²² On the topic of *epagôgê* see for instance T. Engberg-Pedersen, ‘More Aristotelian *epagoge*’ (n.4, above); D. Hamlyn, ‘Aristotelian *epagoge*’ (n.1, above); J. Hintikka, ‘Aristotelian Induction’, *Revue internationale de philosophie* 34 (1980) 422-40.

²³ Barnes, *Aristotle’s Posterior analytics* (n.1, above) 265 complains that the pun would be ‘frigid’ and says ‘I cannot imagine what “starting-point” the routed soldiers might come to’. He thus suggests *alkên* (‘a position of strength’) for *archên*. This is ingenious but I don’t think the emendation is required – if the pun is frigid, that would certainly not be without precedent in Aristotle. To my proposed translation, compare ‘original arrangement’, suggested by Charles, *Aristotle on meaning and essence* (n.17, above) 267, n. 44. Another possibility is that *archê* means that ‘rule’, in the sense of ‘command’ or ‘discipline’, has been reimposed on the troops (a meaning that is in fact given for *archê* in LSJ). See further Ross, *Aristotle’s Prior and Posterior analytics* (n. 5, above) 677.

The simile is thus perfect: but what it perfectly represents is Plato's view, not Aristotle's.²⁴

This calls for some explanation. It might help to reflect on what Aristotle wants to get out of the simile. Part of the point is clearly that the process of restoring order to the soldiers is gradual: one soldier stands, then another. (Presumably the individual soldiers represent the individual sense-perceptions which are retained in memory and grouped into experience.) I think he may also want us to see that the soldiers are the right *sort of thing* to take up the correct formation. That is, they are potentially arranged as they should be, even while they are retreating. This is supported by the remark that follows the simile of the soldiers: 'and the soul is such that it has the capacity to undergo this (ἡ δὲ ψυχή ὑπάρχει τοιαύτη οὕσα οἷα δύνασθαι πάσχειν τοῦτο)' (100a13-14). So Aristotle does get some mileage out of the vivid image. But still, it seems a badly chosen example if he is trying to distinguish his view from Plato's. On the other hand, perhaps the example is for this very reason *well* chosen. That is, it is one that Plato would find congenial. When Aristotle introduces the simile, he says that it depicts how it can be that 'the states are neither in us determinately, nor do they come to be from some other states of superior knowing (ἐξέων γνωστικωτέρων),²⁵ but from sense-perception' (100a10-11). This all seems to be common ground he shares with Plato's *Phaedo*.²⁶ But once the simile is offered Aristotle extracts from it only his own view, namely that the soul has a 'capacity to undergo' a gradual transition to its knowledge of principles. We do not need to postulate a previous state of actual knowing, which would be analogous to the previous formation of the soldiers.

Read this way, the simile is not clumsily chosen. Rather, the choice of simile, and the explanatory gloss that follows it, show Aristotle's awareness of the extent to which he both agrees and disagrees with Plato. He agrees, that is, that sense-perception is indispensable in the activation of knowledge. But he disagrees about the way in which knowledge is present in us prior to that activation. Here the word *dunamis* is doing much of the work for Aristotle: the principles are present in us *en dunamei* because we have the relevant *dunamis* or *dunameis* (sense-perception, memory, experience). One might worry that Aristotle is equivocating here, sliding between *dunamis* as meaning 'potentiality' and *dunamis* as meaning 'faculty'. But his point that 'the soul is such that it has the capacity (*dunasthai*) to undergo this' shows that both ways of translating *dunamis* are relevant to

²⁴ This tension is also felt, but dismissed as inadvertent, by Hamlyn, 'Aristotelian *epagoge*' (n.10, above), 178: 'it is to be presumed that one factor in the image – the fact that the stable formation that comes into being is the same as the original one – is irrelevant to the situation being described. Otherwise we should indeed be back with the Platonic solution to the problem of how learning is possible'.

²⁵ The 'other states of superior knowing' are ruled out because we are after principles, so we cannot use some other sort of pre-existing knowledge to get the knowledge we are after here (as we do in the triangle example from *APo* 1.1, where we have superior, universal knowledge which we then use to gain knowledge *haplôs* of this particular triangle).

²⁶ Here I assume that 'determinately (*ἀφωρισμέναι*)' means something like 'actually', and that Plato would therefore agree that the states are not 'in us determinately'. Compare Barnes, *Aristotle's Posterior analytics* (n.1, above) 265, who paraphrases 'are innately present in us in an actualized state'.

this passage. It is because the soul has a *faculty* that yields knowledge of principles that it *potentially* knows principles. Like the soldiers, the soul is the ‘right sort of thing’ to perform the task at hand. This is a more modest claim than the one made by Plato about knowledge in general: for him, we potentially know because we once actually knew, though we have forgotten.²⁷

III The second question answered: epistēmê and nous

I turn now to the final paragraph of the *Posterior analytics*, where Aristotle answers the second question of 2.19: what is the state of knowing the principles? Here is his answer:

APo 2.19, 100b5-12: If, of the states of thinking by which we hit on the truth (τῶν περὶ τὴν διάνοιαν ἕξεων αἷς ἀληθεύομεν), some are always true, but some are susceptible to falsehood, for instance opinion (δόξα) and reasoning (λογισμός), but understanding (ἐπιστήμη) and *nous* are always true, and no kind is more exact than understanding, apart from *nous*, and the principles of demonstration are known most of all, but all understanding comes along with an account (μετὰ λόγου), then there will not be understanding of the principles; but if there is nothing that can be more true than understanding apart from *nous*, then there will be *nous* of the principles.

Aristotle’s strategy is to itemize the ways of grasping truth, and by a process of elimination, identify *nous* as the only way that could be appropriate for principles. Conducting a process of elimination presupposes an exhaustive list of ways to grasp truth, yet Aristotle makes no attempt to explain why this list is exhaustive, nor, crucially, what the various items on the list are supposed to mean. One gets the unsettling feeling that we are supposed to know what he means already, or even that the list is meant to be familiar to us, so that it stands in no need of explanation. For some of the terms in question this is true enough. *Epistēmê* clearly means ‘demonstrative understanding’ in this context, and as the first sentence of 2.19 has announced, it has already been explained ‘what this is and how it comes about’. But what about the rest of the list?

One place to look would be Aristotle’s earlier distinction of *doxa* from *epistēmê* and *nous*:

APo 1.33, 88b32-89a3 (Barnes trans., modified): There are some items which are true and are the case (τινα ἀληθῆ μὲν καὶ ὄντα) but which can also be other-wise. It is plain that understanding cannot be concerned with these items; for then what can be otherwise could not be otherwise. Nor is *nous* concerned with them – by *nous* I

²⁷ It is tempting to put the difference in Aristotelian terminology by saying that for Aristotle our initial state is one of first potentiality, whereas for Plato it is more like second potentiality or first actuality. But this is not quite right, because for Aristotle knowledge that is potential in the sense of second potentiality seems to be previously acquired knowledge that one can think about again ‘at will’ (*de Anima* 3.4, 429b4-9). This point is noticed in the ancient commentary tradition. In his *in de Intellectu* Philoponus postulates a level of actuality higher than first potentiality but lower than second potentiality to account for our state prior to recollection, and compares this to the knowledge of a drunk man. See R. Sorabji, *The Philosophy of the Commentators, 200-600 AD*, 3 vols (London 2005), §3(j)6.

mean a principle of understanding (λέγω γὰρ νοῦν ἀρχὴν ἐπιστήμης) – nor non-demonstrative understanding (ἐπιστήμη ἀναπόδεικτος), which is belief in an immediate proposition (ὀπίληψις τῆς ἀμέσου προτάσεως). Now it is *nous* and understanding and opinion (νοῦς καὶ ἐπιστήμη καὶ δόξα), and what is called after them, which are true. Hence it remains that opinion is concerned with what is true or false but can also be otherwise.

This makes it pretty clear what *doxa* means – and in fact, does so by a very similar process of elimination. But unfortunately, all we learn about *nous* in this earlier passage is that it is the ‘principle of understanding’, which confirms what we are told in 2.19 but does not add to it. Even worse, there are two difficulties in matching this passage from 1.33 with 2.19: it leaves out *logismos*, and uses ‘non-demonstrative understanding’ apparently as a synonym for *nous*.²⁸ This expression does not feature in 2.19, and in fact seems to be excluded by the terminology of the final chapter, where all *epistēmē* is the result of demonstration. This is a terminological mismatch we have seen before. Recall that *APo* 1.3 also spoke of ‘non-demonstrative understanding’. I have already raised, but not answered, the question of why 2.19 operates with the narrower meaning of the term *epistēmē*.

For illumination on all of this we should perhaps look outside the *APo*. There is a passage in the *Nicomachean Ethics* which is extremely similar to the conclusion of *APo* 2.19, and presumably refers back to it:

Nicomachean Ethics 6.6, 1140b31–41a8: If understanding is a belief (ὀπίληψις) regarding universals and things that are by necessity, but there are principles of all things demonstrated and all understanding – since understanding comes along with an account (μετὰ λόγου) – then there will be neither understanding, nor skill (τέχνη), nor practical wisdom (φρόνησις) of the principle of understanding. For what is understood is demonstrated, and the others apply to things that can be otherwise. Nor will there be wisdom (σοφία) of these, for it belongs to the wise person to have demonstration of things. Thus, if those things by which we hit on the truth (ἀληθεύομεν) and are never in error (μηδέποτε διαψευδόμεθα), regarding both things that cannot be otherwise and things that can, are understanding, practical wisdom, wisdom, and *nous*, and it cannot be any of the three (I mean, practical wisdom, understanding or wisdom), then it remains (λείπεται) that there is *nous* of the principles.²⁹

This passage does use the narrow, 2.19 sense of *epistēmē* according to which understanding must arise from an ‘account’ (both passages use the phrase *meta logou*). Another commonality with 2.19 is that both passages use susceptibility to falsehood as a way of dividing up the cognitive terrain. Furthermore, the strategy of both passages is the same, in that both use a process of elimination to establish *nous* as that which knows principles. Again, a list of cognitive states is simply taken for granted here. The waters of *Ethics* 6.6 are somewhat muddied by the presence of practical wisdom and the extremely

²⁸ As Barnes, *Aristotle’s Posterior analytics* (n.1, above) 199 points out, the ‘nor (*oude*)’ in ‘nor indemonstrable understanding’ means ‘i.e. not’.

²⁹ For discussion of the terminology of the passage, see Taylor, ‘Aristotle’s epistemology’ (n.4, above).

broad term, *sophia*. But despite this, we can match up the three Aristotelian lists reasonably well: in each case, we have a division of the ways truth is grasped, with a primary distinction between what is susceptible to falsehood (or concerns what can be otherwise) and what is not susceptible to falsehood (or concerns what is necessary). *APO* 2.19 and *Ethics* 6.6 add a contrast between what is demonstrated and what is not, reserving the term *nous* for our knowledge of undemonstrated principles.

Though *Ethics* 6.6 helpfully confirms and expands on the *APO* 2.19 list, it does not really help us with our original worry that this purportedly exhaustive list is itself presented as a *fait accompli*. Where do these lists come from? And in particular, why does Aristotle in two cases reserve the term *nous* for our knowledge of principles, rather than following the practice of 1.3 and 1.33 in allowing for a kind of indemonstrable *epistêmê*? If we knew the answers to these questions, it might shed some light on what Aristotle means by the term *nous* in this context. Given the interpretation of 2.19 I have offered so far, you will not be surprised when I claim that the relevant background is Platonic. But my claim is a relatively modest one. I want only to suggest that the terminology of these lists, and in particular, the contrast between *epistêmê* and *nous*, can be traced back to Plato.

Where in Plato, then, do we find a list of ways of grasping truth like the ones just surveyed in Aristotle? An obvious place is the middle books of the *Republic*. The fundamental distinction drawn by Aristotle, between what is susceptible to falsehood and what is not, is of course reminiscent of the Platonic contrast between *doxa* and *epistêmê* at the end of *Republic* 5. One might also think of the distinction in *Republic* VII between *genesis* and *on*, which I mentioned above in connection with 2.19, 100a9, because this is aligned with the same contrast between *doxa* and *epistêmê*. But these points of comparison are rather broad. There are any number of Platonic passages that contrast knowledge to opinion, and it seems futile to look for a specific passage that might lie behind this aspect of *APO* 1.33 and 2.19. A more promising precedent for Aristotle's lists is the divided line of the *Republic*. Here Plato gives us a 'list' of cognitive states (the word *hexis* is used at 511d) reminiscent of Aristotle's various lists. Unfortunately matters are complicated by the fact that Plato runs through the segments of the line twice, with different terminology in the two cases. The terminology used for the domain of *genesis* is the same in books VI and VII: *eikasia* and *pistis*. *Republic* VII adds however that these two together can be referred to as *doxa* (534a1-2). More variable is the terminology for the two segments in the higher part of the divided line, which according to book VII concerns the domain of *ousia*. In *Republic* VI, they are identified as *dianoia* and *noêsis*; in *Republic* VII these become *dianoia* and *epistêmê*, with *noêsis* becoming the term for the two together.

But since Plato tells us himself not to be overly concerned by the terms used (*Republic* VII, 533d7-e2), let us look more closely at what is actually designated by these terms. The highest part of the line is said to represent the knowledge achieved by the so-called 'method of hypothesis' at *Republic* VI, 510b-511d. Plato has Socrates contrast arts like geometry, which simply stipulate their assumptions and determine what follows from these assumptions, to the art of dialectic. This art treats the assumptions of other arts as 'images' and uses these as hypotheses, ascending until a first principle (*archê*) is reached. This 'unhypothetical' principle is then used as a basis for going back down through the

hypotheses and showing them to be true. Plato's method of hypothesis is scarcely easier to understand than *epagôgê* in Aristotle, and as with *epagôgê* I will endeavour to remain neutral on the details. I would however point out that some of the things Plato says about principles and dialectic chime with *APo* 2.19. For instance, he speaks of the greater 'clarity (σαφήνεια)' associated with the higher parts of the divided line (509d9) and with the art of dialectic which reaches the first principles (511c4, 511e3). This is echoed by Aristotle's emphasis on the 'exactness (ἀκρίβεια)' of *nous* (100b8, cf. 99b27). *Noêsis* in Plato partakes most of all in truth (*Republic* 511e3, cf. 510a9), and *nous* in Aristotle is likewise 'more true' than other forms of cognition (*APo* 2.19, 100b11). All this should be set against the general observation that every item in Aristotle's 2.19 list, except *logismos*,³⁰ is also used in the passages describing the divided line. Most importantly, and most obviously, both Plato and Aristotle use the word *nous* for the knowledge of principles.

A fly in the ointment is that neither version of the divided line contrasts *nous* to *epistêmê*, as does Aristotle in 2.19. Indeed, the only time *epistêmê* appears in one of Plato's 'lists' is as a name for the highest segment of the line, when the second list uses it to replace *noêsis*. But here we need to be careful. As we just saw, the highest segment of the divided line represents not just the knowledge of principles, but the whole process of ascending to principles and then using them to ground our knowledge. Comparing this to Aristotle, we might say that the highest part of the line includes both what Aristotle calls *noêsis* (the knowledge of principles) and what Aristotle calls *epistêmê* (understanding through demonstrations based on principles). In this light it is rather suggestive that Plato uses both terms for the highest part of the line. But to convince ourselves that the contrast of *nous* to *epistêmê* in 2.19 has Platonic overtones, we would need a passage where Plato says that *noêsis* and *epistêmê* are distinct, with the former superior to the latter. Even more persuasive would be a passage where Aristotle himself ascribes this very contrast to Plato. And in fact there is such a passage:

de Anima 1.2, 404b21-27: Again [Plato] speaks in another way: *nous* is the monad, understanding is the dyad – because it proceeds uniformly from the one (μοναχῶς γὰρ ἐφ' ἑν) – opinion is the number of the plane, sense-perception is the number of the solid. For the numbers are said to be the Forms themselves, or the principles (ἀρχαί), and come from the elements. Things are judged either by *nous* or understanding or opinion or sense-perception (κρίνεται δὲ τὰ πράγματα τὰ μὲν νῶ, τὰ δ' ἐπιστήμη, τὰ δὲ δόξη, τὰ δ' αἰσθήσει), and these very numbers are the Forms of the things.

³⁰ I wonder whether *logismos* is pressed into service as a substitute for *dianoia*, the second-highest part of the line in *Republic* VI, because Aristotle has already used *dianoia* as a general term for 'thinking' at 100b6 – something the *Republic* also seems to do in the close neighborhood of the divided line. (P. Shorey, ed. and trans., *Plato: Republic*, 2 vols (Cambridge, MA: 1935) vol.2, 115, has a typically self-assured footnote instructing us that at 511a and 511c, *dianoia* 'is general and not technical'.) Another thing to consider about *logismos* is whether the phrase καὶ λογισμὸς at 100b7 is epexegetic, in which case it is merely an explanatory synonym for *doxa*. (Here it is relevant to mention again that *logismos* does not appear in the *APo* 1.33 list.) In that case *logismos* would, for Aristotle, presumably be aligned with *eikasia* and/or *pistis* rather than *dianoia*.

This is far from easy to understand, and raises notorious questions about how Aristotle's report of Plato's doctrine here (and elsewhere) relates to the Platonic dialogues. But it does establish that Aristotle is willing to ascribe to Plato the claim that *nous* is distinct from *epistêmê*, which somehow derives from it.³¹

My hypothesis, then, is that the engagement with Plato, discerned in both the aporetic section of 2.19 and in the section on *epagôgê*, has continued into this final section. Aristotle's choice of the term *nous* is not surprising, once we notice that Plato has already made *noêsis* or *nous* the highest way of grasping truth and the state in which we know principles. Especially illuminating is the fact that, according to Plato (or at least Aristotle's version of Plato in *de Anima* 1.2), *nous* is prior to and the source of *epistêmê*. This leads Aristotle here, and in a later passage which refers back to this one, *EN* 6.6, to restrict the use of *epistêmê* by applying it only to demonstrated knowledge, rather than saying that undemonstrated knowledge is another kind of *epistêmê* as he had in *APo* 1.3 and 1.33.³² Just as we previously imagined Aristotle speaking to the Plato of the *Phaedo*, we can now imagine Aristotle saying something like this to the Plato of the *Republic*: 'if you ask me what name we should give to the knowledge of principles, a state of thought superior to demonstrated knowledge, then I am happy to use the name you used: *nous*.'³³

Of course, this terminological agreement with Plato does not imply philosophical agreement. In fact, it might be read as yet another dig at Plato, because Aristotle uses *nous* for a state which results from a process that begins in sense-perception. As we saw, the indispensability of sense-perception was common ground with the Plato of the *Phaedo*. The *Republic*, by contrast, says that even the practitioners of hypothetical arts like geometry proceed by means of thought (*dianoia*) and not sense-perception (511c3-4), while those who are doing dialectic 'make no use of sense-perception whatsoever' (511c1). And there may be further disagreements lurking here. To explore them fully would require a detailed discussion of the epistemology of the *Republic* and how it compares to the epistemology of the *APo*. But to give one example, *Republic* VI can be interpreted as envisioning one single unhypothetical principle which would underlie all knowledge: the Form of the Good. Some of Plato's remarks about the Form of the Good resonate with what Aristotle says about the principles of demonstration. For instance the Good is called 'the cause of understanding and truth (αἰτίαν ἐπιστήμης καὶ ἀληθείας)' (508e3-4), to which one might compare Aristotle's phrase 'the principle of understanding'

³¹ One could put the point more strongly if, as suggested in the previous note, *logismos* is synonymous with *doxa* in 2.19, and if we ignore *aisthêsis* in the Platonic list at *de Anima* 1.2 because it is not a 'state of thinking'. This would give us precisely the same list in *APo* 2.19 and the report of Plato: *doxa, epistêmê, nous*.

³² In 1.33, as we saw, he uses both terms, *nous* and *epistêmê*, for undemonstrated knowledge. This makes it especially likely that the reason for the distinction between the two terms in 2.19 is local to that chapter. According to my account, the reason is that 2.19 is a more careful engagement with Plato than 1.33.

³³ This is not to say that the *Republic* is necessarily the only text Aristotle would have in mind: as we saw above, the *Timaeus* also speaks of *noêsis* in contrast to *doxa*, and one might think of *nous* in the *Philebus* as well. Matters are further complicated by the fact that the *de Anima* passage is not clearly based on any Platonic dialogue.

(*APo* 1.3, 72b24; 1.33, 88b36; 2.19, 100b15). But there is no reason to think that in 2.19 Aristotle envisions that there is only one single principle for all understanding. It seems, rather, that he is talking about any of the various principles used in the various branches of science.

So even if I am right to see *APo* 2.19 as a dialectical confrontation with Plato, this does not mean that Aristotle sees himself as taking over Platonic doctrine in any sense. Rather, he sees enough common ground between himself and Plato to make it worth engaging with his illustrious teacher, but his purpose in doing this is to emphasize the differences. For this reason, nothing I have said has any revolutionary significance for our understanding of Aristotle's epistemology. I have been focused on the Platonic background against which Aristotle develops his novel theory of *epagôgê* which yields *nous*. I claim that this background explains many of the puzzling features of 2.19. But I have not said much about the details of Aristotle's theory itself. Still my reading, if accepted, would have implications regarding the relation of 2.19 to other Aristotelian texts. For example, my interpretation of the aporetic section has some bearing on Aristotle's attitude towards the theory of recollection. I suggested that Aristotle here takes over Plato's problem as his own, and that his solution is formally quite similar to that of Plato (since both attempt to find a middle ground between complete possession and complete absence of knowledge). This fits well with what I would see as a similar deployment of the *Meno* problem in *Prior analytics* 2.21 and *APo* 1.1. Another example: I suggested that the word *nous* is chosen in *APo* 2.19 chiefly for its Platonic resonance. This should make us cautious in assuming a connection between the *nous* of the *APo* (and, for that matter, *EN* VI) and *nous* in *de Anima* 3. For if the term *nous* is mostly, or even partly, chosen because Aristotle is dialectically engaged with Plato, this makes it less likely that he means us to understand 2.19 in the light of a theory of *nous* he himself develops elsewhere.³⁴ There is another, broader moral of the story I have told, according to which the whole of 2.19 must be read in light of a Platonic background. This should encourage us to think that Aristotle may be in dialogue with Plato elsewhere – even in passages where Plato's name is not mentioned.

King's College London

³⁴ Hence I am sceptical about an interpretation like that offered, for instance, in Kahn, 'The role of *nous*' (n.18, above).