
Aristotle and Platonic Dialectic in Metaphysics Γ 4

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Introduction

I come not to clarify Aristotle's defence of the principle of non-contradiction, but to put it in its proper context. I argue that remarks in *Metaphysics* Γ 3 together with the argument of Γ 4, 1006a11-31 show that Aristotle practises Plato's method of dialectic in his defence of the principle of non-contradiction [hereafter PNC]. I mean this in the strong sense that he uses the very methodology described in the middle books of the *Republic* and, I claim, illustrated in such dialogues as *Parmenides*, *Sophist* and *Theaetetus*. One might well object that if our aim is to better understand Aristotle's arguments, an attempt to see him as a practitioner of Platonic dialectic tries to illuminate the obscure by means of the more obscure. Of course *part* of my aim is to shed some light on Aristotle's argument, but I shall not be suggesting anything entirely novel about 1006a11-31. It has long been thought that this argument is an attempt to show that the person who denies PNC is open to the charge of self-refutation. My chief interest is in the extent to which Aristotle displays his Academic credentials in this passage. Nor am I moved by the claim that the nature of Plato's method of dialectic is hopelessly obscure, for this is a matter on which I have tried to shed light elsewhere.¹ In this paper, I will summarise the results of that investigation, expand its scope to include an example of Platonic dialectic that I had not considered before

1 See my "To an Unhypothetical First Principle" in Plato's *Republic*, *History of Philosophy Quarterly* 13 (1996) 149-65.

and then proceed to make a case that Aristotle pursues this methodology in this particular passage in *Metaphysics* Γ in a manner that suggests that he was fully cognisant of its Academic heritage.

Before I begin, however, it may be appropriate to note a few striking facts which strongly indicate that there is a fox to hunt here. First, both Plato and Aristotle each use the term ‘unhypothetical’ (*anupotheton*) only once. Plato uses the term in describing the method of dialectic in *Republic* (510b7; 511b6). The dialectician, in contrast to all mathematicians and geometers, ascends to an hypothetical first principle. Aristotle prefaces his discussion of the principle of non-contradiction in *Metaphysics* Γ 3 by describing it as an hypothetical starting point. There are further salient similarities between these passages. Both authors describe a starting point or *archē* of the sciences that is not discussed by working scientists — particularly geometers and mathematicians (*Metaph* 1005a29-31; *Rep* 510c). Both claim that this starting point is most secure (*bebaiotatē*, *Metaph* 1005b23; *Rep* 533d1). Finally, both writers claim that it is the business of the philosopher to investigate this principle (*Metaph* 1005b8-10; *Rep* 533c). These parallels seem more than coincidental and other authors agree with me there is a fox to be hunted.² I claim, however, that they have not yet run it to ground.

I argued in a previous paper that the methodology of dialectic that is described in *Republic* is deployed in the *Parmenides* to show that Eleatic monism (at least as Plato understands it in that dialogue) is self-refuting.

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- 2 T. Irwin (*Aristotle's First Principle* [Oxford 1988], 177) claims that in admitting that there is a science of being and in recognising that its first principles are argued for in some sense, Aristotle ‘commits himself to acceptance of some important aspects of Plato’s account of dialectic’ (177). He also notes the verbal echoes of the *Republic* in Aristotle’s use of ἀνυπόθετον and βεβαισιότητα. But he thinks that there must be a significant gap between Aristotle’s methodology in *Metaphysics* Γ and Platonic dialectic because he assimilates dialectic to the Socratic *elenchus*. According to Irwin, Plato’s conception of dialectic in the *Republic* only adds to this by insisting on a kind of coherentist account of justification (138). Because the dialectician sees the logical connections between theses exhibited by means of the *elenchus*, he is in a position to see what bodies of propositions hang together in a nice package. As will become clear, I think that Plato’s dialectic does nothing of the sort: Platonic dialectic on my view looks a whole lot more like Irwin’s notion of Aristotelian strong dialectic. Décarie (*L’Objet de la Métaphysique selon Aristote* [Paris and Montreal, 1972], 79-84; 109) also discusses the relation between Plato and Aristotle on this matter and attempts to argue that Platonic dialectic is very nearly a science of being *qua* being. Like Irwin (547, n. 62), I think that this overstates the case.

The real content of the method described in *Republic* 510b3-d2 and 533b8-c8 is roughly this: we establish an *archē*, P, unhypothetically by showing that $\sim P$ is self-refuting in a particular sense.³ If $\sim P$ were true, neither it nor anything else could be said or thought. P is then used as the basis of a combinatoric system that generates further 'consequences'. These consequences include truths about the existence of certain entities and what kinds they fall into. I also argued that this same methodology is exhibited in *Sophist* 251e ff.⁴ Here the unhypothetical principle is the claim that some, but not all, of the kinds blend (251d5-e1). The alternatives — that no blending is possible or that all things blend — are shown to be self-refuting. Immediately following this, the Eleatic Stranger introduces another combinatoric system. The knowledge of grammar is the understanding of the combinatoric possibilities of consonants and vowels. So too, we are told, *dialectic* is the knowledge of which kinds (*genē*) there are and which can and cannot blend with one another. If we wished to carry the analogy between consonants and vowels further than the comparison between grammar and dialectic, we might suppose that there are basic Forms and connector Forms whose combinatoric possibilities determine the whole range of intelligibles in much the same way that all the words are determined by the principles of grammar and the letters. If we choose to extend the analogy to the subject matters of grammar and dialectic, then the situation with respect to the *genē* is just like that between the One-Being of the *Parmenides* and the numbers: the *megista genē* form a matrix to generate all the others.

So, generally speaking, *Republican* dialectic has two phases: a negative phase in which the claim that $\sim P$ is shown to be self-refuting and a positive phase in which consequences are spun out from P.⁵ These cor-

3 I say 'unhypothetical in a sense' because such an operational self-refutation presupposes some account of the necessary conditions for thought or discourse. When we show that the hypothesis in question violates one or more of these, we show that it is operationally self-refuting. For an examination of some possible candidates for such necessary conditions, see Barry Stroud, 'Transcendental Arguments', *Journal of Philosophy* 65 (1968) 241-56.

4 Baltzly, 'Unhypothetical First Principle', 154-7

5 Enrico Bert ('Greek Dialectic as Expression of Freedom of Thought and Speech, *Journal of the History of Ideas* 39 [1978] 347-70 and 'Aristotele et la méthode dialectique du "Parménide" de Platon', *Revue Internationale de Philosophie* 34 [1980] 341-58) offers a very different view of Platonic dialectic. He alleges that it derives from the method

respond to the ascent to the unhypothetical first principle and the subsequent descent through the things that depend upon it (*Rep* 511b7-c2).

But this is not the only way in which Plato uses self-refutation arguments. The first section of this paper considers a passage that I did not examine in detail in my earlier work on dialectic, *Theaetetus* 181b-3c. The argument against the Heraclitean doctrine of flux is similar to the negative phase of dialectic described above: if things are as the Heraclitean says, then the account he provides 'no more says how things are than how they are not'. Plato concludes that his position cannot be stated in the language that he attempts to use. But in contrast to the examples from *Parmenides* and *Sophist*, there is no dialectical descent that follows the establishment of this unhypothetical first principle.

In §2 I consider the similarities between Plato's method for securing an unhypothetical first principle and Aristotle's *Metaphysics* 1006a11-28. In this passage Aristotle describes what he calls *elenctic* demonstration and claims that if his opponent will simply say something definite he will have refuted himself. Of the arguments in Γ 4, this one is most obviously intended as a self-refutation argument. I claim that it is directed against the same version of Heracliteanism that Plato attacks in the *Theaetetus* and that it proceeds by an argument that is similar in style, structure and content. Finally, I offer a few thoughts on Aristotle's and Plato's quite different attitudes toward the possibility of a science of being and the way in which this limits how much of the picture of Platonic dialectic Aristotle could take on board.

of Zeno of Elea (cf. Diogenes Laertius, viii 2 57) and requires us to 'assume as a hypothesis a certain thesis and deduce from it all the consequences which are derivable from it in order to see whether the thesis holds up or not, and then do the same with the opposite thesis' (1978, 353). I think that this is correct as far as it goes, but that Platonic dialectic supposes that a thesis has an especially impossible consequence if it can be shown that the truth of the thesis undermines a necessary condition of discourse. Because Berti has a much broader conception of Platonic dialectic than mine, he sees the same method employed by Aristotle wherever the latter spins out the consequences of the theories of his predecessors and finds reasons for rejecting them. Thus, Berti claims that book I of *de Anima* is a remarkable application of the method of the *Parmenides*. In a very general sense, this may be correct, but there is not a hint of a self-refutation argument in *de Anima* and I think this is the heart of Platonic dialectic as it is described in *Republic* and illustrated in *Parmenides*.

I Self-Refutation without Dialectical Descent: *Theaetetus* 181c-183c⁵

In this section I want to extend my analysis of dialectic in *Parmenides* and *Sophist* to a particular argument in the *Theaetetus*. Note that the argument begins with vocabulary that seems quite familiar from our previous discussion of dialectic. Socrates claims the *archē* for their investigation is the question of what the claim that everything changes actually means. He isolates two species of change — locomotion and qualitative change — and infers that the Heracliteans must mean that everything changes in both ways. If they didn't mean this, then things might be both changing (qualitatively perhaps) and at rest (with respect to locomotion). Were this the case, then 'it would be no more correct to say that all things are changing than that they are at rest.'⁷

But Socrates seems to make a very uncharitable inference here: surely the poor Heraclitean can insist that if all things are changing in some respect, then it is just false that all things are at rest *tout court* (though it might be equally true that all things are at rest *in some respect*). McDowell claims that this is only a way of signalling that Socrates and Theaetetus will examine a particularly radical version of the doctrine of flux.⁸ There would be no self-contradiction involved in claiming that everything is changing in some respect but still denying that everything is changing in every respect. There are just a variety of views that one might express by saying 'everything changes' and Plato is here making it clear that he means to address a particularly radical Heracliteanism. This would certainly make good sense of what appears to be an otherwise illegitimate inference, but one might still like to know *why* Plato is interested in this particular form of the doctrine of flux.

It is characteristic of Plato to treat claims like 'x is F in some respect but not another' as equivalent in meaning to the claim that x is no more

6 I am very indebted to Allan Silverman for letting me read a section of his forthcoming book on this part of the *Theaetetus*.

7 181e6-7 οὐδὲν μᾶλλον ὁρθῶς ἔξει εἰπεῖν ὅτι κινεῖται τὰ πάντα ἢ ὅτι ἔστηκεν

8 Plato: *Theaetetus* (Oxford, 1973), *ad loc.*

F than not F.⁹ He expresses the latter by means of the same *ou mallon* (no more this than that) formula that Sextus Empiricus and other sceptics later used to indicate that they withheld judgement about whether x was or was not F (*PH*, i.187).¹⁰ Perhaps the thought is that the Heracliteans purport to be saying something about the nature of all things (*panta*, 180d7, 181c2). But what a thing is in its nature is what it is in itself (*kath hauto*). When x is F merely in one relation or respect, it is not F in itself, but merely in relation (*pros ti*) and what a thing is *pros ti* is purely accidental and not part of its nature.¹¹ This line of thought is not developed explicitly in the *Theaetetus*, though it does feature in one later account of what were called Plato's categories.¹² A tentative suggestion, however, might be that Plato restricts consideration to the radical Her-

9 *Hippias Major* 289a-c and, of course, *Rep* 479a-b, Τούτων γὰρ δὴ, ὃ ἄριστε, φήσομεν, τῶν πολλῶν καλῶν μὴν τι ἔστιν ὃ οὐκ αἰσχρὸν φανήσεται; καὶ τῶν δικαίων, ὃ οὐκ ἄδικον; καὶ τῶν ὀσίων, ὃ οὐκ ἀνόσιον; ... Πότερον οὖν ἔστι μᾶλλον ἢ οὐκ ἔστιν ἕκαστον τῶν πολλῶν τοῦτο ὃ ἂν τις φῆ αὐτὸ εἶναι;

10 Plato was, of course, regarded by the sceptics as one of theirs. See Cicero, *Varro* 46 and *Anonymous Prolegomena to Platonic Philosophy* 10, 1-11, 20 (Westerink). I do not wish to suggest that they were right. Rather, certain connections between essential and *kath hauto* properties and *pros ti* and accidental properties are implicit in Plato. The sceptics later exploit these connections in their arguments. See Julia Annas, 'Plato the Sceptic' in Paul Vander Waerdt, ed., *The Socratic Movement* (Cornell 1994) as well as Paul Woodruff, 'The Sceptical Side of Plato's Method', *Revue internationale de philosophie*, 156 (1986) 22-37.

11 Compare the account of the mode of relativity in Sextus (*PH*, i.135-41). Sextus contrasts the merely relative with 'what a thing is independently and in its own nature'. For a detailed discussion of the mode of relativity in Sextus, see Annas and Barnes *The Modes of Scepticism* (Cambridge 1985).

12 Xenocrates is reported to have treated the 'Platonic categories' of *kath hauto* and *pros ti* as if they drew the same distinction as Aristotle's category of substance and the rest of the accidental categories (ap. Simplicium, in *Cat* 63, 21-64, 12). In so doing, he treats *pros ti* as equivalent to *kata symbebēkos*. Since every accident is an accident of a substance and the relative is that which is 'of or than another', all accidents are relatives. I myself do not think that Xenocrates is here reporting the content of Plato's unwritten doctrine — *pace* Findley and other proponents of the Unwritten Doctrines tradition. Rather, the various reports of Plato's categories in Diogenes Laertius, Hermodorus, Xenocrates and Sextus represent attempts by Platonists to make systematic what is merely suggestive in Plato's own writings. Fine (*On Ideas* [Oxford 1993], chapter 12) argues persuasively that these sources do not attribute the same distinction to Plato.

aclitean doctrine that everything is changing in every way at every time because he thinks that any weaker version couldn't purport to say how 'the all' is in its own nature. I make an issue of it here because I shall argue that this is the form of the doctrine of flux that Aristotle is arguing against in *Metaphysics* 1006a11-31. Since I think that Aristotle's methodology in that argument is consciously informed by his understanding of Platonic dialectic, so too we may conjecture that he supposed that this radical position is the one that must be attacked for the very same reason that Plato directs his attention to it here in *Theaetetus*.

Whatever we say about the opening moves at 181e, this use of the *ou mallon* formula is mirrored in the conclusion.

Then we may not call anything seeing rather than not-seeing; ... Yet Theaetetus and I just said that knowledge was perception? ... And so our answer to the question gave something which is no more knowledge than not. ... but what has really emerged is that, if all things are in motion, every answer, on whatever subject, is equally correct, both "it is thus" and "it is not thus" — or if you like "becomes", as we don't want to use any expressions which will bring our friends to a stand-still. (182e-83b, trans. Levet) ¹³

If all things are changing, then it is claimed that all answers to questions about what things are are equally correct. It would seem that this is because on the hypothesis under consideration, nothing is F any more than not F.¹⁴ Something about the conditions which would make the Heracliteans' doctrine true would also make the language in which it could be claimed to be true impossible. Just what it is about the doctrine of flux that makes it self-refuting is a difficult question indeed and one to which we will turn in a moment. For now it will suffice to point out that it is precisely this incompatibility between stating the doctrine of flux and its being true that Plato aims to show us. Even the claim made in 183a that everything changes is not, strictly speaking, a correct expression of the Heracliteans' view. Socrates follows the passage quoted immediately above with the following:

13 Myles Burnyeat, *The Theaetetus of Plato* translated by M.J. Levet (Indianapolis 1990).

14 182e3-5 Ούτε ἄρα ὄραν προσηγνέον τι μάλλον ἢ μὴ ὄραν, οὐδὲ τιν' ἄλλην αἴθησιν μάλλον ἢ μὴ, πάντων γε πάντως κινουμένων.

Well, yes, Theodorus, except that I said “thus” and “not thus”. One must not use even the word “thus”; for this “thus” would no longer be in motion; nor yet “not thus” for here again there is no motion. The exponents of this theory need to establish some other language; as it is, they have no words that are consistent with their hypothesis — unless it would perhaps suit them best to use “not at all thus” in a quite indefinite sense. (183a9-b5, trans. Levett)

The structure and the vocabulary of Plato’s self-refutation argument in the *Parmenides* are here in part. The *hypothesis* (183b3) that the Heraclitean takes as his *archē* (181c1), when properly understood, is that all things are changing in every way. It is then argued that this claim is such that, if it were true, neither it nor anything else could be said.¹⁵ Since this is shown to be self-refuting, ‘it is not the case that everything is changing in every way’ is another unhypothetical starting point. In short, we have just what I think we should expect here. But what is the content of this negation: is it merely that there is *something* that is not changing in every way or the further claim that *nothing* is changing in every way? The answer to this question seems to depend upon what it is that makes the Heracliteans’ view self-refuting.

Furthermore, if the argument of *Theaetetus* 181c-3c is similar in some respects to the passages from *Republic*, *Parmenides* and *Sophist* that we have considered, it is also different. Here we do not see what I have identified as the second phase of *Republican* dialectic: the working out of the consequences of this unhypothetical first principle. It is this process that Plato describes in *Republic* as the descent from the *archē* and which I have claimed corresponds to the derivation of the numbers in *Parmenides* and perhaps also the interweaving of the kinds in *Sophist*. Why is the *Theaetetus* different in this respect?

One reason that might be offered for this difference is that the *Theaetetus*, unlike *Parmenides* and *Sophist*, is an aporetic dialogue. Like the early, Socratic dialogues, it draws no conclusions about the nature of knowledge. Thus we should not expect to see the positive phase of *Republican* dialectic pursued in it. But the claim that the *Theaetetus* is

15 This conclusion is foreshadowed in Socrates’ and Theodorus’ description of the champions of motion at 179e-80e. See especially 180a9-b1: ‘they take care not to let anything be stable (βέβαιον) either in their words or in their own souls’.

genuinely aporetic has been called into question and the nature of its conclusions take us right to the heart of the question about what it is that makes the Heraclitean position self-refuting. F.M. Cornford argued that we ought to see the *Theaetetus* as an indirect argument for the conclusion of book V of *Republic*: knowledge must be of Forms.¹⁶ Any attempt to say what knowledge is without mentioning the Forms is doomed to fail. Thus, while Plato accepted Heracliteanism as a correct account of sensible particulars, he thought that his ontology — which included Forms in addition to the fluxing sensibles — could make the world safe for knowledge and the possibility of discourse. G.E.L. Owen drew a very different moral from this portion of the *Theaetetus*.¹⁷ According to him, Plato here recognised that accepting Heracliteanism with respect to particulars would preclude the possibility of language.

What he plainly points out is that if *anything* (and anything is this world, not the next) were perpetually changing in all respects, so that at no time could it be described as being so-and-so, then nothing could be said of it at all — and, *inter alia*, it could not be said to be changing. ('Place', 72)

Owen concluded from this, and other arguments as well, that since the *Timaeus* seems to endorse Heracliteanism with respect to particulars, it belongs with other early dialogues like *Phaedo* and *Republic* and not to Plato's later period where he rejected the incompatibility of being and becoming.¹⁸

To try to settle the disagreement between Cornford and Owen — and, of course, their followers, for the issue has not gone away — it is necessary to try to determine what Plato supposed made the Heraclitean position self-refuting. On the first reading, it is the fact that the *predicates*

16 *Plato's Theory of Knowledge* (Indianapolis 1957), 101

17 'The Place of the *Timaeus* in Plato's Dialogues', *Classical Quarterly* NS 3 (1953) 79-95, reprinted in Owen, *Logic, Science and Dialectic*, 65-84. My page references are to the latter.

18 Owen thought that passages like *Laws* 894a; *Philebus* 26d-7b, 54a-d; *Sophist* 248a-9b and *Parmenides* 163d reject the incompatibility of being and becoming. For the merely apparent agreement between *Philebus* 59a, 61d-e and *Timaeus*, see Owen, 'Place', 72, note 35.

as well as the particulars are changing in every way at every time.¹⁹ Because what 'knowledge' or 'white' means changes, the person who asserts that 'this is white' or 'knowledge is perception' no more says that a thing is white than that it is some other colour or that knowledge is perception any more than that it is blue or a jar of Vegemite. Owen was not especially forthcoming about the exact feature of Heraclitean flux that generated the impossibility. It would seem that he must maintain that even if properties or predicates are stable, the Heraclitean flux of particulars alone would be sufficient to render language impossible. Otherwise there would seem to be no point to his insistence that if *anything* in this world were caught up in such change, language would be impossible. A likely bet is that he had in mind the claim that if *x* changes in every way at every time, then it violates the principle of non-contradiction.²⁰ The argument might run like this:

1. For all times, *t*, every particular is undergoing both local motion and qualitative change at *t* with respect to all its properties.

19 'The conclusion that Plato means us to draw is this: unless we recognise some class of knowable entities exempt from Heraclitean flux and so capable of standing as the fixed meanings of words, no definition of knowledge can be any more true than its contradictory.' (Cornford, *PTK*, 99).

20 I will be using the term 'principle of non-contradiction' for the kind of ontological principle about being that Aristotle discusses in *Metaphysics* Γ — 'for the same thing to hold and not to hold simultaneously of the same thing at the same time is impossible' — not the principle of logic that says a proposition and negation cannot both be true (cf. Lukasiewicz, 'Aristotle on the law of contradiction' in Barnes, Schofield and Sorabji, eds., *Articles on Aristotle: III, Metaphysics* (London 1979), 51). It may be that these do not come to exactly the same thing. It might depend on how you individuate propositions and what you count as a contradictory. For instance, if Plato regarded the proposition 'Phaedo is tall' as the same proposition as 'Phaedo is taller than Socrates', as some commentators have alleged, then he might also think that a proposition and its denial could both be true when Phaedo is also short (in relation to Simmias). Yet the *Phaedo* makes clear that he doesn't think that the very same thing both holds and doesn't hold for Phaedo: he has a share of the tall *toward Socrates* and a share of the short *in relation to Simmias*. See C. Kirwin, 'Plato and Relativity', *Phronesis* 19 (1974) 112-29 for one view and Baltzly, 'Plato, Aristotle and the λογός ἐκ τῶν πρὸς τι', *Oxford Studies in Ancient Philosophy* (1997), 185, n. 21 for another.

2. Change is the exchange of contraries: when x becomes F , x becomes F from a state in which it is not- F .
3. So, for any time and any property, x is changing from being F to being not- F .²¹
4. But, on pain of being in a state of rest, x cannot be F to the exclusion of being not- F at t .
5. But x must be either F or not- F at t .

Since x cannot be neither F nor not- F at t , it remains for it to be *both* F and not- F .

You might then go on to try to show that if everything violates the principle of non-contradiction, then discourse is impossible. Discourse requires saying of a thing, how it is. But if PNC is violated, then for any way that a thing is alleged to be, it is also not that way either.

I myself am not convinced that this is a good argument. There are two ways that a Heraclitean might deny that his view involves a violation of the principle of non-contradiction. A Heraclitean might object to the particular use that is made of premise 5. Perhaps his momentary objects don't have to be either one of a pair of contraries. After all, this might be just the point of insisting that nothing *is* but rather everything *becomes*. Even if it is true that when x is receptive of F -ness and its contrary, either ' x is F ' is true or ' x is not F ' is true, nothing of the sort applies for ' x is becoming F '. One might also question whether the violation of the principle of non-contradiction by the fluxing particulars absolutely precludes discourse. Perhaps we might not be able to have sentences whose subjects were particulars, but we might nonetheless say things like

21 There is room for argument here depending on what one says about time (continuous or discrete 'time atoms') and change (i.e., whether a thing which is changing from F to not F at t is either F or not F at t). It seems to me that Plato tries to avoid this argument by imagining an opponent who will not say that anything *is*, only that it *becomes*. Plato himself seems sensitive to the problems about change between opposites and time. See the coda to the second hypothesis of the *Parmenides* (155e-7b). Sorabji ('Aristotle on the Instant of Change' in Barnes, Schofield and Sorabji, eds., *Articles on Aristotle: III, Metaphysics* [London 1979] 159-77) provides a very nice discussion of Aristotle's attempt to resolve the problem of the instant of change.

'Green is a colour.' Alternatively, if places weren't moving or altering, it might be possible to have a feature placing language.²²

I am also not convinced that anything like Owen's interpretation makes good sense of the text of 181c-3c. If he were right, then we should expect to see much more of an effort on Plato's part to establish that a) the Heraclitean flux of sensible particulars would rob us of stable subjects for discourse by violating the principle of non-contradiction and b) all language presupposes such stable subjects. Now, it might be thought that some remarks by Theodorus discharge this obligation on Plato's part. At 182b Socrates invokes the theory of perception that he introduced earlier at 155d-57c. This theory explains perception in terms of the generation of 'twins': one on the part of the perceptible, the other on the part of the percipient.

Thus the eye and some other thing — one of the things commensurate with the eye — which has come into its neighbourhood, generate whiteness and the perception which is by nature united with it ... In this event, motions arise in the intervening space, sight from the side of the eye and whiteness from the side of that which cooperates in the production of colour. The eye is filled with sight; at that moment it sees, and there comes into being, not indeed sight, but a seeing eye; while its partner in the process of producing colour is filled with whiteness, and there comes into being not whiteness, but white, a white stick or stone or whatever it is that happens to be coloured this sort of colour. (152d-e, trans. Levet)

When Socrates considers the theory of perception again in the context of 182c he seems to be concentrating only on the fast motions that pass between the object and percipient.

Soc: Now if they were only moving through space and not altering, we should presumably be able to say *what* the moving things flow. Or how do we express it?

Theod: That's all right.

Soc: But since not even this abides, that what flows flows white; but rather it is in a process of change, so that there is a flux of this very thing also, the whiteness, and it is passing over into another colour, lest it be

22 See A. Silverman, 'Timaeon Particulars', *Classical Quarterly* 42 (1992) 87-113.

convicted of standing still in this respect — since that is so, is it possible to give any name to a colour which will properly apply to it?

Theod: I don't see how one could, Socrates; nor yet surely to anything else of that kind, if, being in flux, it is always quietly slipping away. (182c-d, trans. Levet)

One might take Theodorus' comment to make just the point mentioned above: that the doctrine of flux robs us of stable subjects to talk about. Anything that we should try to describe by ascribing a predicate to it has already 'slipped away' by the time we get the words out. One might add to this the observation that in *some* of the subsequent discussion, Socrates says 'we could not *call* anything seeing rather than not seeing' or claims that the *answer* to a question — perhaps a discursive event which takes place at a time — is no more correct than incorrect. But, even if this is Theodorus' point, it doesn't really help the Owen line of argument. For even if we thought that the changes between properties were happening too fast for us to *detect*, this would still not show that the subject *really* is both F and not F at some time. Still less would it show that discourse is impossible unless one invoked further premises of a verificationist sort.

We have so far been treating Owen's interpretation as restricted to particulars. Individual subjects are constantly changing their qualities. We might add the notion that property instances are also changing. This *may* be the implication of 182d1-5. Would this help his cause? If this white is always becoming some other colour quality, then when *x* becomes white, it also becomes some colour other than white. But, if we restrict the range of qualities that this whiteness becomes to other colours, then presumably this whiteness remains stable in at least one respect: it is an instance of some colour. Thus, this whiteness must become other qualities as well as other colours. Now, we might well doubt whether there is much sense to be made of an instance of whiteness becoming some other colour or some other quality. Surely for this white to become other than white is just for it to perish. But I suppose that, by analogy with bare particulars, we might posit bare quality instances. This is very likely to be metaphysically mistaken, but it is not at all clear that it is a metaphysical mistake that precludes the possibility of meaningful assertion. So long as the quality *types* remain stable, we might still say 'white is a colour' and mean just that. In fact, the Heraclitean's position might be understood as asserting such a relation between types or qualities: the property of being a particular or property instance is so related to the property of changing in every respect at every time that all things which exhibit the former, exhibit the latter too. Call this proposition H1. Of

course, barring some sort of direct access to these qualities, it is unclear how our use of 'white' could be connected with the abstract entity or how we could come to *know* proposition H1. In a sense this position would be like the *ad hoc* form of Protagorean relativism which says that all truths are relative except this one. This is doubtless unmotivated, but it isn't obviously self-refuting.

It seems to me that the best way to approach the interpretation of 181c-3c is to suppose that Cornford is right that the scope of 'everything' in 'everything moves and alters' is intended to include both particulars and property instances, as well as the properties themselves. This reading seems to give Socrates a straightforward argument from the nature of the Heraclitean's claim to its unassertability. H1 says that a certain second order relation obtains between two first order properties. The first order disjunctive property of being either a particular or a property instance — call it P — stands in the second order relation, Φ , of always being co-instantiated together with the first order property, C , of changing in every way at every time. H2 — Heracliteanism with respect to the properties themselves — includes the property of being a property (or relation) in a new disjunctive property P' : anything which is a property or property instance or a particular also has the property of changing in every way at every time. But, if H2 is true, then Φ must be changing in every way too. After all, second order properties are properties too. So, Φ must change from holding between P' and C to not holding between P' and C at every time. Even if we stop short of saying that ' $\Phi(P',C)$ ' and ' $\sim\Phi(P',C)$ ' are *both* true, we cannot allow that either is true to the exclusion of the other. But if the world is such that it is no more true that ' $\Phi(P',C)$ ' than that ' $\sim\Phi(P',C)$ ', then the Heraclitean has not managed to say how things are any more than how they are not.

But Cornford and other commentators go too far in claiming that this makes Plato's Forms into *meanings* or the referents of predicates in a sentence.²³ First, the version of the argument that I have just given makes

23 Among the most recent exponents of this view is David Bostock ('Plato on Understanding Language', in S. Everson, ed., *Companions to Ancient Thought* Vol. 3 [Cambridge 1994], 10-27). According to him, Plato accepted the referential theory of meaning: 'general words have meaning by standing for Forms (and hence to understand the word one must in some way "grasp" the Form' (26). Moreover, Bostock claims that Plato continued to hold this view in spite of the fact that this semantic doctrine generates the problems underlying Socrates' dream passage in

no appeal to meanings. It only insists that there must be a way that things are for any theory to report correctly or incorrectly. If some things are not some determinate way, then any answer to any question is no more correct than incorrect. Second, if the reading of the *Parmenides* suggested above is correct, then Plato recognised the difference between a sentence and a list of co-referential names. He insists that the One has a share of Being while at the same time remaining different from being. It is precisely the Eleatic insistence that predicates are entirely analogous to proper names that stands behind Zeno's Stricture. But Plato rejects this picture. So Forms are not meanings in the rather simple way that some expositors of Plato have suggested: they are not the referents of predicates in just the same way that Plato is the referent of 'Plato'. The argument of *Theaetetus* 181c-3c does not seem to make the point that the Heraclitean's *word meanings* must be stable, but rather the point that if what he is saying is to be correct, there must be *a way that things are* and this is contrary to his own thesis.

It may be useful to summarise the results of our investigation so far. In general, the argument of *Theaetetus* 181c-3c5 conforms to the pattern of self-refutation argument that I claim Plato thinks is sufficient to establish an unhypothetical first principle — the first phase of dialectic. The self-refutation in this particular case is directed at a version of the doctrine of flux that is very radical: it supposes that all things — and this includes properties, as well as individuals and property instances — are always changing. This thesis is shown to be such that, if it were true, it could not be stated and this is so, not because of considerations about the stability of word meanings, but because there is nothing determinately one way or another to be talked about. As we shall see, the argument in Aristotle's armoury that is most clearly a self-refutation argument shares these features.

Theaetetus. It is also a view that Bostock believes that we now know to be 'wholly mistaken'. This seems perverse. We should only make the Forms into semantic entities if Plato's dialogues lead us ineluctably to that conclusion. I think that the argument against the Heracliteans just considered doesn't do so. For an extended argument that Plato's metaphysics is not driven by semantic considerations, see Fine, *On Ideas*.

II Aristotle's Opening Moves and Platonic Self-refutation Arguments

The proper interpretation of all the arguments that Aristotle offers in chapter 4 of *Metaphysics* Γ is beyond the scope of this paper. I am concerned with the claim that there can be a special sort of refutation of anyone who denies PNC (1006a11-28). Just what sort of refutation does Aristotle have in mind and does it bear any interesting relation to the Platonic self-refutation arguments considered above? The striking similarities in vocabulary between Γ 3 and the passages in *Republic* discussed above lead to the expectation that there might be. I shall argue that the argument is directed at a particular kind of philosophical opponent familiar from Plato's dialogues. Second, it proceeds by methods that are familiar in form, content and terminology to Plato's self-refutation arguments.

A. The Target

There can be no demonstration of PNC, in the sense of demonstration articulated in *Posterior Analytics*, at the very least because a proper demonstration must proceed from premises that are firmer than the conclusion. But if PNC is the firmest of all principles, then there could be no such premises. What we are offered instead is the possibility of 'demonstrating in the manner of a refutation' (*elenktikōs apodeixai*). Just what such a demonstration consists in is not clear. Let's consider what we are told about this method in *Metaphysics* Γ 4.

It seems to require some sort of conversational context: Aristotle insists that there will be *elenctic* demonstration if only the respondent will say something that is significant to himself and someone else. It is not clear whether this conversational context is merely one of question and answer, like the Socratic *elenchus*, or whether the respondent is called on to do more than accept or reject a premise that the questioner offers him. Further, in some sense, the respondent is supposed to be the cause (*aition*) of the refutation. Within the context of the *elenchus*, it seems plausible to say that the respondent is the cause of his own refutation in the sense that the respondent accepts all of the premises from which the contradiction is generated. But the standard form of the Socratic *elenchus* cannot be apposite to a conversational defence of PNC, for presumably the fact that the person who denies PNC can be brought to see that he has inconsistent beliefs cuts no ice with him. 'But of course,' he will say, 'Why should this come as any surprise, for what I maintain is that the

same thing both does and does not hold for a subject. Here what both holds and doesn't hold is that I believe of PNC that it is false and also believe things that imply that I hold that PNC is true. The property of being believed by me to be false both holds and doesn't hold for PNC.'

It would seem that Aristotle recognises the limit of the *elenchus* to move a determined opponent of PNC. He claims that while Heraclitus might have *said* that the same thing is and is not, he didn't really believe it. The argument for the conclusion that it is impossible for a person to believe that the same thing both is and is not, however, is conditional on the premise that it is not possible for contraries to hold good of the same thing at the same time (1005b22-34). Aristotle argues that this premise is entailed by PNC at 1011b15-22. Much has been written about whether this argument is actually question-begging.²⁴ If a question-begging argument is one that assumes as a premise the very conclusion that it purports to prove, then the argument is not question-begging. The conclusion is that no one can fail to believe PNC. Nor is it necessary *for us* to regard PNC as itself a premise in the argument, as Lear points out:

To someone who objects that we beg the question by assuming the law of non-contradiction, we should respond as Achilles should have responded to the Tortoise: the inference is valid as it is and does not need supplementation with a premise that purportedly licenses the inference.²⁵

In the Socratic *elenchus* a premise need have nothing more to recommend it than that the answerer accepts it.²⁶ Moreover, if he is shown that his thesis is inconsistent with his other beliefs, he is presumably free to reject some of those other beliefs in order to stave off refutation. It is a fine question whether the same ought to apply to the *inferences* drawn in the course of the examination. If the respondent is allowed to object that an inference presupposes the truth of a principle that he rejects, then it is

24 See especially Kirwan, *Aristotle's Metaphysics Books Γ, Δ, E* (Oxford 1971), 89-90; J. Barnes, 'The law of contradiction', *Philosophical Quarterly* 19 (1969) 302-9, and J. Lear, *Aristotle and Logical Theory* (Cambridge 1980).

25 J. Lear, *ALT*, 100

26 *Protagoras* 331c and *Gorgias* 500b are among the passages cited by Vlastos in his argument for the 'say what you believe' requirement for the *elenchus*. G. Vlastos, 'The Socratic Elenchus: method is all', in his *Socratic Studies* (Cambridge 1994) 1-33.

hard to see how he has been refuted in the sense of the word that seems appropriate to the Socratic *elenchus*. Even if both parties to the *elenchic* examination are bound to accept any valid inference, then it is hard to see how the respondent is the *cause* of the *elenchic* demonstration, as Aristotle insists that he is (1006a25). The argument of 1005b22-34 can perhaps show that no one can actually fail to believe PNC, but it cannot refute the person who purports to deny it by means of premises and inferences that he himself will admit.

It seems to me that only something like the self-refutation argument that delivers a Platonic unhypothetical *archē* could make an impact on the person who denies PNC. This sort of self-refutation would show him that the conditions that would make \sim PNC true would also make it impossible for him to say this or anything else. He might be willing to accept that (by his lights at least) he both believes and doesn't believe it, but it seems that he *must* defend the view that in believing or saying that PNC is false he really believes or says *that*, and not something else. This is what the argument of 1006a11-31 tries to accomplish.

How is the argument supposed to proceed? I think we are to imagine an opponent who holds a very radical thesis. He doesn't merely deny PNC in the sense that he believes that it is possible that *some* subject is such that the same thing both does and does not hold for it at the same time and in the same respect (i.e. $\Diamond \exists x \exists F (Fx \wedge \sim Fx)$). Nor is he someone who holds that this possibility is actual.²⁷ Rather, the target of Aristotle's

27 I shall have nothing to say about these more modest theses. It might, however, be objected that anyone who believes *some* subject both is and is not, thereby believes something that *implies* radical Heracliteanism. For it follows from $(Fa \wedge \sim Fa)$ that $\forall x \forall F (Fx \wedge \sim Fx)$, and anything else you like as well. Thus, in refuting radical Heracliteanism Aristotle has refuted anyone who believes that any subject both is and is not. But there are two separate issues here. The first concerns whether the development of paraconsistent logics actually allows for someone to hold that only a few contradictions are true without thereby thinking that anything and everything follows from that. The second concerns whether Aristotle would have seen the above strategy as a viable one. Could *he* have thought that you could land anyone who thought that some subject both was and was not into the radical Heraclitean soup? I shall have nothing to say about the first issue. With respect to the second, it seems unlikely, if not impossible, that Aristotle should think that radical Heracliteanism is a logical consequence of the claim that some *x* is both *F* and not *F*. In Aristotle we do not get a semantic definition of the relation of logical consequence. Nor are we offered a definition of a valid argument according to which it is not possible for the premises to be true and the conclusion false. Rather, we are told that

attack *at least* holds the claim that it is possible that *every* subject is such that every predicate and its contradictory hold for it, i.e. $\Diamond \forall x \forall F (Fx \wedge \sim Fx)$ or perhaps $\forall x \forall F \Diamond (Fx \wedge \sim Fx)$. I shall call either of these modal claims the radical Heraclitean view. I think the imagined opponent goes further and claims that it is actually the case, i.e. $\forall x \forall F (Fx \wedge \sim Fx)$. This further claim I shall call actualist radical Heracliteanism. As we shall see, the argument against him is very much like the one that Plato deploys against the Heracliteans in *Theaetetus* 181a-c.

What reason is there to suppose that the argument is directed at such extreme versions of Heracliteanism? The first reason is textual. Ross's text of the *Metaphysics* brackets the line that concludes the discussion of the *elenktikēs apodeixis* at 1005b28 because Ross thought that it had crept in from line 31. The text of 1006a24-31 runs as follows:

A22-5: εἰ γὰρ μή, οὐκ ἂν εἶη τῷ τοιούτῳ λόγος, οὐτ' αὐτῷ πρὸς αὐτὸν οὔτε πρὸς ἄλλον. ἂν δέ τις τοῦτο διδῶ, ἔσται ἀπόδειξις· ἥδη γὰρ τι ἔσται ὠρισμένον.

For if he does not say, there would be no logos for such a person, either in relation to himself or to another. But if does offer this, there will be demonstration, for there will already be something definite.

a25-6: ἀλλ' αἴτιος οὐχ ὁ ἀποδεικνύς ἀλλ' ὁ ὑπομένων· ἀναίρων γὰρ λόγον ὑπομένει λόγον.

But the cause will not be the one who demonstrates, but the one who submits; for in destroying *logos* he submits to *logos*.

a26-8: ἔτι δὲ ὁ τοῦτο συγχαρήσας συγκεχώρηκέ τι ἀληθὲς εἶναι χωρὶς ἀποδείξεως [ὥστε οὐκ ἂν πᾶν οὕτως καὶ οὐχ οὕτως ἔχοι].

Again, anyone who accepts this has accepted that there is something

a syllogism is 'a *logos* in which certain things being posited, something other than what is posited follows of necessity from their being so' (*An Pr* 25b28-31). The 'follows of necessity' relation is never explicitly defined. Instead some clear examples of it are exhibited (the perfect syllogisms of the first figure, 25b32 ff) and we are given instructions for converting other syllogisms to these perfect forms. It is not possible, given these constraints, to pass from a premise like 'some man is both dead and not dead' to anything like 'every thing both is and is not' without invoking some additional premises that would be rejected by any sensible and modest person who denies PNC.

true separate from demonstration [so that it could not be the case that all things are both thus and not thus].

a28-31: πρῶτον μὲν οὖν δῆλον ὡς τοῦτό γ' αὐτὸ ἀληθές, ὅτι σημαίνει τὸ ὄνομα τὸ εἶναι ἢ μὴ εἶναι τοδί, ὥστ' οὐκ ἂν πᾶν οὕτως καὶ οὐχ οὕτως ἔχοι·
First, therefore, this at least is obvious: that the name signifies to be or not to be something, so that it could not be the case that all things are both thus and not thus.

I shall go on to analyse the self-refutation argument in more detail in a moment. I think nothing that takes place in lines 26-8 or 28-31 does much more than restate the argument of 22-5. In fact, the whole sentence ἔτι ... ἔχοι in 26-8 is absent from the Paris and Vindobonensis manuscripts of Aristotle's text, as well as from the translations of Moerbeke and the commentary of Asclepius. Bonitz excised it *along with* the following ὥστε ... ἔχοι which Ross brackets. Ross, however, retained ἔτι ... ἀποδείξεως partly on the strength of the commentary of Alexander of Aphrodisias (*in Metaph* 275,2 and 6).²⁸ But Ross apparently mistrusted the lemmata in Alexander's commentary, for there we find the full text of 26-8. What Ross failed to appreciate, I believe, is that Alexander explains these lines as a *restatement* of the argument of 22-5.²⁹ Moreover Alexander claims that this text is directed against an opponent who claims that *everything* both is and is not. Indeed, this is the opponent's undoing!

For someone who says that *everything* is no more this than the opposite of this destroys *logos*; for he will say, similar to everything else, that *logos* no more is than is not.³⁰

Thus if we are to retain ἔτι ... ἀποδείξεως there is also a good case for keeping ὥστε ... ἔχοι. Furthermore, if Alexander's interpretation is right, then this argument is directed against the actualist Heraclitean.

28 *Commentaria in Aristotelem Graeca* vol. 1, Hayduck (Berlin, 1891)

29 *in Metaph* 275.1-4 οὐ γὰρ λέγει ὁ τοῦτο συγχωρῶν οὐ μᾶλλον σημαίνει τι ὁ λόγος ἢ οὐ σημαίνει', ἀλλὰ συγχωρεῖ σημαίνειν, δ καὶ. αὐτὸς ἐδήλωσε διὰ τοῦ - πρῶτον μὲν οὖν δῆλον' [1006a28-9] καὶ τῶν ἐξῆς.

30 *in Metaph* 275.11-14, ὁ γὰρ λέγων ἐπὶ παντὸς οὐδὲν μᾶλλον τοῦτο ἢ τὸ ἀντικείμενον αὐτοῦ λόγον ἀναιρεῖ· ἐρεῖ γὰρ ὁμοίως τοῖς ἄλλοις καὶ τὸν λόγον μηδὲν μᾶλλον εἶναι ἢ μὴ εἶναι.

Even if one thought that lines 28-31 *did* present an importantly different argument from the one just offered, it is difficult to see what could justify the claim that ὥστε οὐκ ἂν πᾶν οὕτως καὶ οὐχ οὕτως ἔχει is not the common conclusion of both arguments. The only question about the text, then, is whether Aristotle thought it worth repeating this and wrote it twice. If this is so, then what Aristotle thinks that he has shown is that, in the course of stating his position, the opponent implicitly admits that there is something definite (i.e. $\exists x \exists F \sim(Fx \wedge \sim Fx)$) and of course this refutes *only* the actualist radical Heraclitean who claims that, in actual fact, *everything* both is and is not. A more modest modal Heraclitean who merely thought that some subjects were, or could be, qualified by opposites would be unmoved by the observation that *something* must be definite if it is possible to state his position. But the conclusion of Aristotle's argument, says more than this: it *could not* be the case that everything is and is not. How might Aristotle justify the further modal claim?

If Aristotle distinguished between the actualist Heraclitean thesis, $\forall x \forall F (Fx \wedge \sim Fx)$, and the modal version, it is likely that he regarded the latter as a *de re* claim: everything that actually exists is such that it could both be and not be (i.e. $\forall x \forall F \diamond (Fx \wedge \sim Fx)$).³¹ In addition, I think it likely that he thought that it is no accident about the actual world and the things in it that something definite can be said. This gives us at least the *de re* claim $\exists x \exists F \square \sim(Fx \wedge \sim Fx)$ and this is sufficient to refute the *de re* formulation of modal Heracliteanism.³² *This intuition that it is no accident*

31 Aristotle's preferred definition of 'possibly P' is that P is neither necessary nor impossible. A sentence like 'possibly no cats are grey' is frequently treated as if it asserts of every cat that it is possibly not grey and therefore possibly grey as well (*An Pr* 32a30). It must, however, be admitted that some of Aristotle's work on the modal syllogism at least suggests that he mixed *de re* with *de dicto* readings of modal claims.

32 What about the *de dicto* version? Could there be a possible world in which every predicate both held and did not hold for every subject? In fact, I don't find it particularly helpful to consider Aristotle's views on modality in terms of possible worlds, but we can try. In one sense of 'impossible world' any world *w* such that in *w* ($\forall x \forall F (Fx \wedge \sim Fx)$) is impossible. There may be reasons to accept the idea of such impossible worlds, but it seems unlikely that Aristotle would have had much sympathy for such a notion. A possible world is a world and a world is a *kosmos*. As such, it is an ordered thing — thus is just what 'κόσμος' means — and one can, of course, say how it is with an ordered thing. But the world in question is such that

that the world can be spoken and thought about underlies Platonic self-refutation arguments as well. Consider such an argument in its dialectical context. Suppose we show a philosopher — let's call him Cratylus — who holds some thesis, T, that if T were true, then neither it nor anything else could be said or thought. 'So?' replies Cratylus. 'Why ought we think that the world is such that what is true of it can be said or thought? Your alleged unhypothetical first principle, $\sim T$, is not unhypothetical at all: it presupposes the intelligibility of the world.' We may even suppose that Cratylus takes his own point to heart and stops trying to meaningfully assert T. Instead we may suppose that he does what Aristotle tells us the real Cratylus did (*Metaph* 1010a12): he says nothing at all but only wiggles his finger. But if this is supposed to be a *correct* response to the way that he takes the world to be (i.e. unintelligible), then he faces another self-refutation argument: if an agent must understand a proposition in order to believe it, then no one can believe that everything is unintelligible.

I have not considered the rest of the arguments in Γ 4. It seems that some of these are directed at more interesting targets than the radical Heraclitean. Cresswell provides a reading of 1006a28-b22 according to which it attempts to show that, where the range of S is restricted to substance predicates, $\sim\Diamond\exists x\exists S(Sx \wedge \sim Sx)$.³³ 1007a20-b18 considers the claim that there are no essential predications. There is thus a progression of stronger and stronger claims established against increasingly less ridiculous philosophical positions. Cresswell also points out that the argument of 1006a28-b22 presupposes Aristotle's own theory of meaning — or at least Cresswell's account of that theory.³⁴ But this ought to

for every true proposition that says how it is with some subject, there is also a true proposition that denies what the first one asserts. The most one can say about this sort of impossible world is that it is impossible.

33 'Aristotle's *Phaedo*', *Australasian Journal of Philosophy* 65 (1987) 131-55. Cresswell's interpretation thus incorporates part of the passage that I have discussed (a28-31) into a campaign against a rather different opponent than the radical Heraclitean. But he thinks that Aristotle doesn't get down to serious business until a31 where he explains what it is to signify one thing — a notion of signification that presupposes Aristotle's own semantic theory. He ought to locate the shift from one opponent to another at this point.

34 Cresswell argues that Aristotle treats general terms as if they proper names. Thus,

throw doubt on whether it is properly regarded as an argument that only requires the opponent to say something meaningful in order to refute himself. The beauty of a self-refutation argument is that it is supposed to show how the opponent's own theory makes it impossible for him to meaningfully state or even think it. In fact, self-refutation arguments must also presuppose some account of the necessary conditions of discourse. The more minimal the presuppositions, the more convincing it is to call the argument a self-refutation proper. What we find, in fact, in Aristotle's text is that the arguments depend less and less on the presuppositions of meaningful statement. Consider, for example, the argument of 1006b34-7a20. There Aristotle claims that there is no discussion (*ou dialegetai*) with the opponent because his response requires that he enumerate all the accidents of a thing about which he is being questioned. This infinite enumeration is practically impossible. It is not that his words lack sense on the assumption that his view is correct — that was the charge against the radical Heraclitean — rather, his position commits him to providing us with too many meaningful words for discussion to go on.³⁵ In light of this fact, I conclude that the argument of 1006a11-a28 is directed exclusively at a traditional Platonic enemy: the actualist radical Heraclitean. In the next section, I shall try to show that it employs the strategy and vocabulary of Plato's self-refutation arguments.

'Max is human' is quite like 'Max is Cresswell'; both are alike in having an ambiguous name in the predicate position. But, while all the various Cresswells are merely homonyms, the things picked out by 'human' are synonyms (*Cat* 1a1-12). Like a particular use of 'Cresswell', the meaning of 'human' is the human being that it picks out.

- 35 1006b6-13 does sound like it is supposed to be a genuine self-refutation argument. Notice that here too Aristotle claims that his opponent's position (sc. that a name signifies or means infinitely many things) will destroy (*συνήρηται*, b8) speech and thought. But it is important to realise that this claim just relies on the conclusion established by the *elenctic apodeixis* above. If there is to be significant speech, then there must be something definite (*ᾠρισμένον*). What is infinite is unbounded and so indefinite (*ἀόριστον*), cf. *Phys* 196b26-8.

B. The Argument

Alexander provides the following exegesis of the argument of 1006a11-28:

He thinks then that one should ask the respondent whether, when speaking, he signifies anything to himself and to another by the words he speaks and by the names he gives to things. ... For one who says that he signifies nothing by what he says and the answers he makes could not be saying anything to himself or to another; nor will his thoughts which he uses towards himself in place of names and speech be signifying anything. ... Likewise he negates speech even if he says that it no more signifies anything than that it does not signify it. If, then, he does not signify something when he says something, it would not be possible to carry on discussion. For once again he turns out to be like a plant. ... [But if, on the other hand, he agrees that he signifies something.] The one who grants this is by that very fact treating something as definite. For he grants that what is signified by each [act of] speech is something definite. For something which is no more this than that is indefinite. (in *Metaph* 274, 3-18)³⁶

Alexander is not explicit about why the claim that there is something definite is so vital, but his use of the *ou mallon* formula makes it fairly obvious. What is no more F than not F is indefinite. So too, presumably, is that which is both F and not F. For speech to be meaningful, it must be definite (i.e. it must mean *this* and not 'no more this than that' or even 'both this and not this'). So, if there can be meaningful speech, it is not the case that *everything* is both F and not F. Consider carefully Aristotle's explanation of the sense in which this constitutes an elenctic demonstration:

But if he does give us this [a significant utterance], there will be demonstration. For there will already be something definite. But the cause of this is not the one who demonstrates, but the one who submits. For in destroying speech (*anairōn logon*), he submits to speech (*hupomenēi logon*). (*Metaph* 1006a24-6, trans. Kirwan)

36 Translation by Arthur Madigan SJ, *Alexander of Aphrodisias: On Aristotle Metaphysics* 4 (London 1993).

Alexander's explanation of the force of this argument looks as if it might sell it short.

But in negating speech, he uses speech. This is the meaning of "he undergoes speech" [1006a27]. Aristotle proves by what he says that one who says that speech signifies nothing *says* that speech has been negated. (in *Metaph* 274,27-8, trans. Madigan)

But this suggests merely a pragmatic self-refutation argument. The thesis that no one is speaking at time *t* cannot be communicated at *t* *via speech*, yet for all that it might well be true. Aristotle's point is rather that the imagined opponent's position makes *all* significant speech and thought impossible. Alexander pointed out earlier in his commentary (274,6) that the truth of the opponent's supposition would make the thoughts (*noēmata*) by means of which he represents it to himself as meaningless as the *logos* by means of which he attempts to state it to someone else.

This is exactly Plato's strategy for establishing an unhypothetical *archē*: show that *P* is true and unhypothetical by showing that the truth of its contradictory would be sufficient for making it impossible to articulate $\sim P$ in any way. I claimed that in the vocabulary of the *Republic* the hypothesis $\sim P$ is destroyed (*anairousa*, *Rep* 533c8) in this process and its contradictory established unhypothetically. Notice that Aristotle uses exactly the same terminology both with respect to what happens to the radical Heraclitean and with respect to the status of PNC.³⁷

37 The authorship of *Metaphysics* K has been disputed. I am somewhat persuaded by Jaeger's considerations in favour of the hypothesis that it is genuinely Aristotle, but a shorter, earlier version of *G* (*Aristoteles* [Berlin 1923], 216). Regardless of who the author is, the parallels with Platonic self-refutation strategies are clear here too. The author of K says:

About these things there can be no demonstration *simpliciter*, but there is demonstration against someone. ... The one who wants to prove to the person who asserts opposites that he is wrong must get him to admit something which is the same as the principle that the same thing cannot be and not be at the same time but which does not seem to be the same. (1062a2-9)

What could it mean to say that what the opponent asserts is the same as disputed principle but does not seem to him to be so? In a Platonic self-refutation argument, we show that the person who (seemingly) asserts *P* presupposes certain conditions on the meaningfulness of discourse which imply $\sim P$. Thus, in meaningfully asserting one thing, he implicitly testifies to the truth of the contradictory claim.

C. The Dialectical Descent

The second phase of what I have called Republican dialectic is the descent from the unhypothetical first principle. I suggested that this is illustrated in the *Parmenides* in the derivation of the numbers. In the *Sophist* it is described, but not illustrated, by the analogy with consonants and vowels combining to form syllables in accordance with the combinatoric possibilities that define these elements. We have just considered the ways in which Aristotle's defence of PNC resembles the Platonic strategy for establishing unhypothetical first principles. Is there any Aristotelian analogue to dialectical descent?

The *Republic* invites us to imagine that the first principles of mathematics are somehow consequences of yet 'higher' principles. The *Parmenides* reveals that these higher principles are gotten from the study of One and Being and their relation to one another. This single evocative example, together with some of Aristotle's remarks, suggests that Plato thought that the first principles of all sciences could be derived from the same starting points. In *Posterior Analytics* A.9 he claims that there can be no scientific demonstration of a truth that belongs to a particular science like geometry except from the first principles proper to that science. What he says after he has provided some rather difficult arguments for this conclusion is often thought to be directed at Plato:

If this is clear [sc. that there can only be demonstration from proper principles], then it is also evident that one cannot demonstrate the first principles of a particular science. For these [sc. that from which such first principles would be demonstrated] would be the principles of everything, and the science of these will rule over everything.³⁸

38 *An Po* 76a 16-18, Εἰ δὲ φανερόν τοῦτο, φανερόν καὶ ὅτι οὐκ ἔστι τὰς ἐκάστου ἰδίας ἀρχὰς ἀποδείξαι· ἔσονται γὰρ ἐκεῖναι ἀπάντων ἀρχαί, καὶ ἐπιστήμη ἡ ἐκείνων κυρία πάντων. Cf. *Metaph* 997a2-10. Ross (*Aristotle's Prior and Posterior Analytics* [Oxford 1949] *ad loc*) thinks that Aristotle has Plato in mind. Cherniss, however, claims that the arguments in *An Po* A 7 and 9 are directed at Speusippus' view that to know anything is to know the totality of its relations to all other things (*Aristotle's Criticism of Plato and the Academy* [New York 1962], 73 n 55). I think disagreement on this may be inevitable. Here, as elsewhere, Plato's suggestive remarks about a science of being do not serve to pin down a detailed Platonic position to be attacked or defended.

In *Posterior Analytics* I 32, Aristotle considers just what the Platonic vision might actually amount to and argues against it.³⁹ It is not entirely clear what he takes Plato's position to be. It cannot be the claim with which he starts the chapter: 'all *sylogisms* have the same first principles' (88a19).⁴⁰ Perhaps he means to express the view that all *scientific demonstrations* have the same first principles. One reasonably clear formulation of what a Platonic Science of Being would be like is suggested by our previous examination of Platonic dialectic:

PSB: There exists a set of principles all of which are unhypothetical in the sense specified and that every universal scientific truth — including existence claims about the kinds of objects studied by each particular science — is deducible from this set.⁴¹

Why think that there could be no such thing? Six of Aristotle's arguments against the position he vaguely articulates are pretty clearly ineffective.⁴² One of the less obscure ones is relevant to the question of dialectical descent and Aristotle's conception of metaphysics:

39 See the commentary in Barnes, *Posterior Analytics* 2nd edition (Oxford 1994), 194-8 for some other possible formulations and a detailed analysis of the seven arguments that Aristotle offers.

40 Barnes takes this to mean that there is a consistent set of principles such that every proposition can be deduced from it. But of course there are false contraries like 'justice is injustice' and 'justice is cowardice' which could not be deduced from such a set (*An Po* 88a27-30).

41 This raises the vexed question of Plato's views on the limits of scientific knowledge. I myself am inclined to think that the Two Worlds thesis is false: Plato believed that it was possible to know that a sensible particular is F. (See my 'Knowledge and Belief in *Republic V*', *Archiv für Geschichte die Philosophie* 79 [1997] 239-72.) Gail Fine is another notable dissenter ('Knowledge and Belief in *Republic V-VII*', in S. Everson, ed., *Companions to Ancient Thought*, vol. 1 (Cambridge 1990). If you accept the Two Worlds thesis, then you could characterise the Platonic science of being more strongly. since scientific truth is restricted to intelligibles, you might suppose that all scientific truths *tout court* were deducible from the set of unhypothetical first principles.

42 See Barnes, *Posterior Analytics*. He points out that the very first argument relies on a premise (that if the conclusion of a syllogism is false, the premises must both be false) that Aristotle himself knows to be false (cf. *AnPr B.2-4*).

Nor is it possible for there to be some common principles from which everything will be proved. (I call common e.g. that everything is affirmed or denied.) For the genera of things there are are different, and some predicates belong to quantities and some to qualities alone, with the help of which proofs are conducted through the common items. (88a31-b3, trans. Barnes)

The passage makes two points. First, 'the genera of things there are are different.' Up to a point, the Platonist can accept this. Numbers, for instance, are different kinds of things than plane figures and these again are different from solids. However, the Platonist will insist that all of these kinds are themselves unified under the genus being, whose exfoliation and articulation generates all the kinds that there are. Similarly, the study of this genus will be the science of all the things that are. The second point is that some predicates are specific to some genera, e.g. equilateral to the genus of plane figures. How is this supposed to show that a Platonic science of being is impossible? The thought is presumably that principles about these genus-specific predicates could not be deduced from any higher genera. But this is an assertion, not an argument. In the *Parmenides* Plato seems to think that he has succeeded in deducing principles about the kinds of numbers (even times even, odd times even, etc.) from considerations about One and Being. Yet neither One nor Being is either odd or even.⁴³ So far it is hard to see how these considerations are meant to rule out the possibility of PSB.

Nonetheless the insistence that the things that are fall into different genera and this, in turn, requires different sciences to study them reminds us of another famous passage in which Aristotle argues against the possibility of a science of being:

For the good is said in many ways, as many ways as being. For being, as we have divided it in other works, signifies now what a thing is, now quality, now quantity, now time, and again, on the one hand, in being changed and also in changing. ... Since therefore being is not one in all

43 Note that Aristotle too accepts that one or the unit is not itself a number, *Metaph* 1088a5, *Phys* 220a27

that we have just mentioned, so neither is good; nor is there one science either of being or of the good. (*EE* 1217b26-35)

The argument is tough to pin down. Owen thought that it went something like this:⁴⁴

1. 'Being' is used ambiguously across categories: it is not the same thing to be a substance as it is to be qualified.
2. So, being is not a genus.
3. Every science must have a single generic kind to which its objects belong.

So, there can be no science of being.

Owen claimed that in *Metaphysics* Γ, Aristotle realised that focal meaning allowed for a possible exception to premise 3: one might have a science of being by having a science of that with reference to which all things are said to be — substance. But a science of everything that is just insofar as it is will not tell you everything that there is to know about the things that are. Aristotle's view seems to be that there are scientific truths about, say, mathematics that can only be known by virtue of the noetic grasp of principles specific to geometry. These principles can't be understood as consequences of any other more ultimate principles. Thus, we should not find it surprising if Aristotle's argument to an unhypothetical first principle is not followed by a dialectical descent exactly similar to the one that Plato describes in *Republic* and illustrates in the *Parmenides*. Unlike Plato, Aristotle thinks that, in *some* sense, there are seams in the fabric of being which prevent us from spinning out the whole of science from our unhypothetical first principles 'as if from a matrix' (cf. *Metaph* 987b33-8a1).

But, even so, the science of being *qua* being does have a subject matter of sorts and tells us something. One of Aristotle's attempts to tell us just what it studies allows scope for something that resembles dialectical descent in Plato.

44 'Logic and Metaphysics in Some Earlier Works of Aristotle' in Owen, *Logic, Science and Dialectic*.

All this being so, there must be exactly as many species of being as of unity. And to investigate the essence of these is the work of the science which is generically one — I mean, for example, the discussion of the same and the similar and other concepts of this sort; and nearly all the contraries are referred to this source; but let us take them as having been investigated in the ‘Selection of Contraries’. *Metaph* 1003b33-1004a1

In what I have identified as dialectical descents in the dialogues, Plato tries to show how the combinatoric possibilities we discover some entities to have imply the existence of other entities and, moreover, the kinds into which these dependent entities must fall. In *Parmenides*, the existence and nature of the numbers are a consequence of the matrix of possibilities determined by the ways in which One, Being and Different can be related. In *Sophist* it is implied that the world of intelligibles that the dialectician investigates is determined, at least in part, by the combinatoric possibilities of the five greatest kinds. In both cases, the investigation of the inter-relations of these *things* — Being, One, Sameness, Difference, etc. — proceeds by exploring the various ways in which we use the *words* ‘being’, ‘one’, etc. Careful examination of the attributes of the One in the second consequence set in the *Parmenides* shows that Plato is not just wilfully piling up contradictions. In the ‘both/and’ consequence sets, Plato illustrates the several senses of terms like ‘in motion’ and ‘at rest’. When we see *why* these apparently inconsistent terms are true of the One, we see that they are being used in different senses. We are also led to see how the different senses of these apparently inconsistent pairs are related to others. Thus, for example, the One is both in motion and at rest because it is both in itself and in another. That which is always in itself must be in the same and to be always in the same is to be at rest (146a1). But, insofar as it is in another, it is never in the same and so is in motion. So it is in itself and in another in quite different senses. In one sense, a whole like the One is in its parts. After all, it can’t be anything over and above its parts, for a whole is that from which no part is missing. So, since the parts are in the One, the One is in itself. But, on the other hand, it seems that the One isn’t just its parts, since there are things true of it that are not true of any or all of the parts. So the One isn’t in its parts and so isn’t in itself.

When we get beyond the sense of puzzlement that is produced by the fact that this discussion is conducted in what Carnap would have called ‘the material mode of speech’, we are left with the fact that Plato is exploring two different intuitions about mereology. The exploration of these various senses of ‘in itself’, ‘in another’, etc. follows straight on

from the derivation of the numbers and it has the same feel: we are cataloguing the combinations determined by the various semantic possibilities of terms. I would like to suggest that Aristotle's *Metaphysics* Δ does much the same thing. If this is correct, then there is a sense in which Aristotle too follows ascent to an unhypothetical first principle with a dialectical descent which is akin to, though not exactly the same as, Plato's.

This is not a particularly original thesis. In antiquity there may well have been philosophers who, like Ross and Bonitz, thought that Δ was simply bunged into our text of the *Metaphysics* without any structural rationale and, furthermore, was itself a grab bag. In his commentary on Δ , Alexander is keen to stress that the book is in its proper place, though he does not name anyone who denies this view. He replies to critics who claim that certain terms that ought to be discussed in it are missing by saying:

But that this is not the case is clear from the fact that in this book it is not his intention to do this for [all] such things without exception [i.e. things said in various ways], but only for those that all the sciences use as common in proving their own subject matter. For we do not propose to speak about all the equivocal (*ta homōnuma*), or about all those that are derived from one thing and referred to one thing [i.e. cases of *pros hen* ambiguity], but [only] about things to which the phrase 'in various ways' applies because they belong to being *qua* being, which is itself expressed in various ways.⁴⁵

I think that Alexander is right and that book Δ carries out the task described at 1003b31-1004a1. Furthermore, this task is similar in structure and spirit to Plato's dialectical descent. A full vindication of this claim would require that there be a similar unity of structure in Δ and the latter parts of the *Parmenides*. I have produced a simple example of the way in which terms are systematically explored and inter-related from Plato's dialogue. It is an interesting question just how much structural unity Δ has, but it is also a question beyond the scope of this paper.⁴⁶

45 Alexander of Aphrodisias. *On Aristotle Metaphysics 5*, trans. W.E. Dooley, SJ (London 1993).

46 Aquinas' commentary supposes that Δ is right where it belongs and highly unified. For an appraisal of his case, see R. McInerney 'The Nature of Book Delta of the

Until it is settled, I can only offer the hypothesis that *Metaphysics* Γ and Δ are significantly indebted to Plato's conception of dialectic as one that may be worthy of further consideration.

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Metaphysics According to the Commentary of St Thomas Aquinas', in *Graceful Reason* (Toronto 1983) 331-43. A contemporary defender of the placement and internal unity of Δ is Giovanni Reale (*The Concept of First Philosophy and the Unity of the Metaphysics of Aristotle*, trans. J. Caton, (Albany 1980).