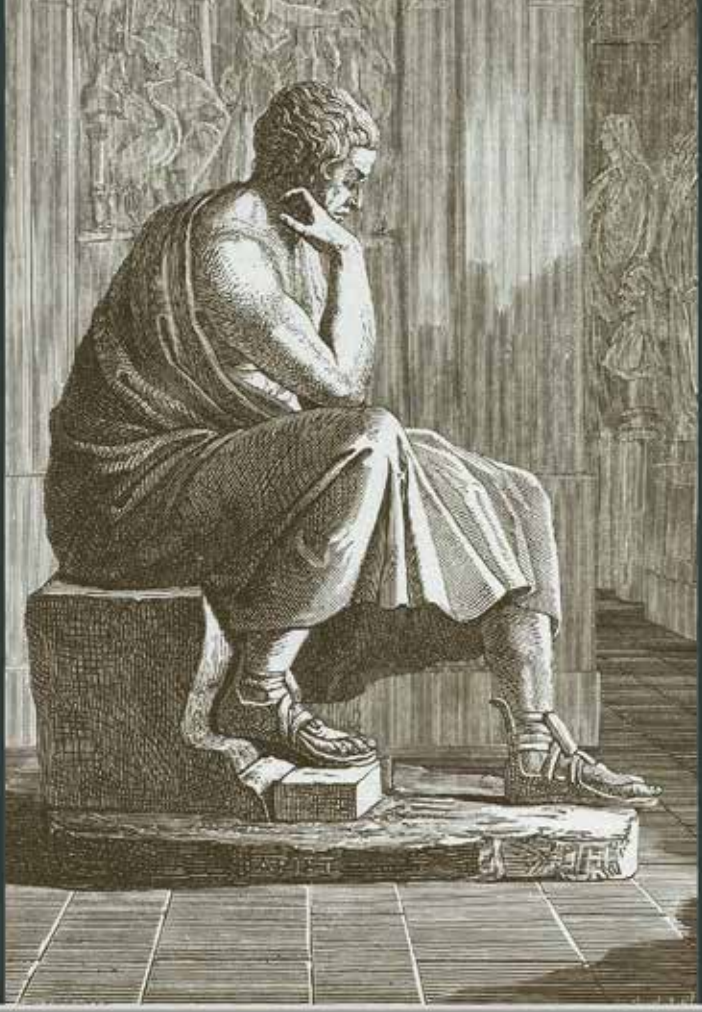

The Gamma Paradoxes

AN ANALYSIS OF THE FOURTH BOOK OF ARISTOTLE'S *METAPHYSICS*

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For Helena and Monica Kirby

Some people have acquired this opinion as other paradoxical opinions have been acquired; when they cannot refute eristical arguments, they give into the argument and agree that the conclusion is true.

(W.D. Ross' Translation 1908, 1012a17–20)

Contents

Preface

The Gamma Paradoxes

It is at the beginning of *Book Gamma*, of Aristotle's *Metaphysics*, that Aristotle begins his discussion of the science of being. In *Alpha*, Aristotle maintains that philosophy is the removal of perplexities by means of arriving at first principles. In *Beta*, we are treated to some examples of the perplexities that are typical. In the brief *Alpha Minor*, typically thought of as an appendix to *Alpha*, the author addresses the ease and difficulty by which one arrives at truth. It is thus natural to consider *Gamma* to be the point at which Aristotle turns to metaphysics, though it bears mentioning that the term *metaphysics* was never used by Aristotle, and annexed to the treatise, probably, around the time of the Roman Emperor, Augustus.

Book Gamma divides neatly into three sections. In the first section, Aristotle discusses the science of being *qua* being. In the second section, he defends the view that no subject may possess contradictory properties in the same respect, at the same time—call this the Principle of Non-Contradiction (PNC). And, in the third section, he turns to an etiology of the views of those who would deny the PNC, among whom sit those who, having been influenced by Protagoras, embrace a form of relativism of one form or the other. As a result, Aristotle sees fit to defend a view that at least resembles the Principle of Excluded Middle (PEM), such that it is necessary to assert or to deny, as he puts it, any one thing of one thing, as there is no middle ground to occupy between contradictories.

Accordingly, the main topic of the first chapter is Aristotle's introduction of the science of being *qua* being. It appears, at first glance, as if the idea of a science of being is inconsonant with a number of Aristotle's scientific tenets. And the investigation concerns bringing Aristotle's view of metaphysics into accord with his views on science. In the second chapter of the *Gamma Paradoxes*, we look at how Aristotle wants to use the science of being to discover

truths that hold of entities insofar as they are entities. The least disputable truth in his view is that it is impossible for any subject to have contradictory properties at the same time in the same respect. The arguments offered in defense of this principle of non-contradiction are put to an analysis. And we consider the role that substantial and accidental predication play in Aristotle's defense. After defending the principle of non-contradiction directly, Aristotle discusses and critiques the motivations of those who would deny the principle, and therefore we see, in the third chapter, that Aristotle believes that the source of the disputant's confusion is adherence to the idea that only that which is perceived exists. This idea leads to an acceptance of relativism, which in turn suggests that truth is in the eye of the beholder. If there is a disagreement, and the disputants are both right, as it were, it looks as if there are true contradictions. Aristotle is also keen to defend the idea that it is necessary either to assert or to deny one thing of one thing. Scholars have read his defense as a defense of the Principle of Excluded Middle. We assess this defense. And we compare it to remarks made in the *De Interpretatione*, which seem to issue from someone less sanguine about the principle.

Herein, loyal and charitable exegesis is among the top priorities. Exegesis, however, serves as means to another end—that of *doing* philosophy. And the comparison of Aristotle's views to other philosophers, in any age, is a way of doing philosophy. An approach such as this—the worry is not trite—risks being ahistorical. But I reject the idea that Aristotle is not relevant to contemporary analytic philosophy as an imprudent estrangement. And I find useful even the counterfactual approach, so long as we are explicit when we are taking it, of asking how Aristotle might have approached our current philosophical questions, even in cases where we do not find him explicitly raising such questions.

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Chapter 1

The Science of Being

Book Gamma, the fourth book of Aristotle's *Metaphysics*, begins with metaphysical flair. In fact, in the very first line (1003a21–31 on W.D. Ross' 1908, translation) one finds a *locus classicus* for meta-metaphysics:

> There is a science (ἐπιστήμη) which investigates being qua being (τὸ ὂν ᾗ ὂν) and the attributes which belong to this in virtue of its own nature. Now this [science] is not the same as any of the so-called special sciences; for none of these deals generally (καθόλου) with being *qua* being. They cut off a part of being and investigate the attributes of this part—this is what the mathematical sciences for instance do. Now since we are seeking the first principles and the highest causes, clearly there must be something to which these belong in virtue of its own nature. If then our predecessors, who sought the elements of existing things, were seeking these same principles, it is necessary that the elements must be elements of being not by accident but just because it *is* being. Therefore, it is of being as being that we also must grasp the first causes.[1]

This statement is *about* a discipline that, once outlined, will be fairly described as metaphysics. The statement is thus meta-metaphysical. It stands in contradistinction to the claim that every question may be treated adequately by the special sciences. This latter claim—also a meta-metaphysical claim—when sufficiently defended, presents a formidable challenge to the enterprise known as metaphysics. And one might be surprised to learn, having just read the opening lines from *Book Gamma*, that one of the first to present such a challenge *seems* to have been Aristotle himself.

I.1: THE PARADOX OF METAPHYSICAL SCIENCE

In chapter 28 of *Posterior Analytics*, Aristotle provides criteria for distinguishing one science (ἐπιστήμη) from another (Barnes' translation, 2002):

> A science is one if it is concerned with one kind (γένους)—with whatever items come from the primitives and are parts of attributes of them in themselves. One science is different from another if their principles come neither from the same items nor those of the one from those of the other. There is evidence for this when you come to the indemonstrables: they must be in the same kind as the items demonstrated. And there is evidence for this when the items which are proved through them are in the same kind and of the same kind.

It is not therefore difficult to read Aristotle's way of distinguishing scientific disciplines to commit him to the following claim:

Claim-I: Every science concerns a single genus unified by a common property.

However, Aristotle seems to deny that there is any unified, single genus for being. Later in *Posterior Analytics* he states the following (92b13):

> Next, by means of demonstration we claim it is necessary for everything that exists to be shown to be, (Εἶτα καὶ δι' ἀποδείξεώς φαμεν ἀναγκαῖον εἶναι δείκνυσθαι ἅπαν ὅτι ἔστιν), unless, as it were, it is its substance (εἰ μὴ οὐσία εἴη). But being is not the substance of anything (τὸ δ' εἶναι οὐκ οὐσία οὐδενί), for being is not a genus (οὐ γὰρ γένος τὸ ὄν).

Given the way Aristotle ends this statement, readers are led to attribute a second claim to Aristotle:

Claim-II: Being is not a genus.

With some regularity, Aristotle makes the point that being is predicated of everything and cannot therefore serve to distinguish one class of entity from another.[2] Kinds presumably do so, and, therefore, being is not a kind.

That Claim-II really does present trouble for the science of being is further supported by a passage in the *Eudemian Ethics*. There, Aristotle maintains that there is no single science of being, just as there is no single science of the good (1217b26–36):

> For the good is said in many ways, as numerous as those of being (Πολλαχῶς γὰρ λέγεται καὶ ἰσαχῶς τῷ ὄντι τὸ ἀγαθόν), for being, as we have distinguished

> it in other writings (τό τε γὰρ ὄν, ὥσπερ ἐν ἄλλοις διῄρηται), signifies what a thing is, a quality, a quantity, a time (σημαίνει τὸ μὲν τί ἐστι τὸ δὲ ποιὸν τὸ δὲ ποσὸν τὸ δὲ πότε), and it relates to cases in which there is change and changing (καὶ πρὸς τούτοις τὸ μὲν ἐν τῷ κινεῖσθαι τὸ δὲ ἐν τῷ κινεῖν); and the good is found in each of these cases (καὶ τὸ ἀγαθὸν ἐν ἑκάστῃ τῶν πτώσεών ἐστι τούτων), in substance as mind and god (ἐν οὐσίᾳ μὲν ὁ νοῦς καὶ ὁ θεός), in quality as justice (ἐν δὲ τῷ ποιῷ τὸ δίκαιον), in quantity as moderation (ἐν δὲ τῷ ποσῷ τὸ μέτριον), and opportunity in the case of time (ἐν δὲ τῷ πότε ὁ καιρός). And then as being is not one in all that we have mentioned (ὥσπερ οὖν οὐδὲ τὸ ὂν ἕν τι ἐστὶ περὶ τὰ εἰρημένα), thus neither is good, nor is there a single science either of being or the good (οὕτως οὐδὲ τὸ ἀγαθόν, οὐδὲ ἐπιστήμη ἐστὶ μία οὔτε τοῦ ὄντος οὔτε τοῦ ἀγαθοῦ.).

Thus, Aristotle is willing to say that every single science concerns a genus, and, that being is not a genus, so there is no single science of being.[3] However, our meta-metaphysical *locus classicus* straightforwardly asserts that there is a science of being. Call this Claim-III. And, thus, we can see that Aristotle's project faces an apparent paradox, call it the *Paradox of Metaphysical Science*, in terms of the following three claims:

Claim-I: Every science concerns a single genus unified by a common property.
Claim-II: Being is not a genus.
Claim-III: There is a science of being.

It is natural, at this point to consider the putative contradiction entailed by these claims as turning upon an equivocation. Were one of the key terms used in a different sense, in one claim in contrast to another, the contradiction may be viewed as merely apparent, and we no longer face the impasse. And with this in mind, one might attempt to distinguish between demonstrative science, as it is understood in the *Analytics*, and an ἐπιστήμη that is not demonstrative.

I.2: NON-DEMONSTRATIVE SCIENCE?

Terence Irwin translates our *locus classicus* as follows: "There is a science that studies being qua being and its *intrinsic properties*." (Ross' translation of our *locus classicus* has, as we have seen above, a similar sense.) He understands Aristotle as attempting to show that there is no rivalry between the science of being *qua* being and demonstrative science, so those puzzles that set up such a rivalry may be put aside. No rivalry between the special sciences and the science of being *qua* being need obtain, for even though both are concerned with the things that are, they each concern different *intrinsic*

properties (1988, 168–9). There may be a class that is the intersection of things studied by both the practitioners of the science of physics and the practitioners of the science of being, but the science of physics studies those things *qua* changeable, that is in terms of the properties of change, while the science in question concerns things *qua* being, or the properties that things may have in virtue of their being. This provides the metaphysician with a response to the austere critic of metaphysics, who, in a way that is not without irony, is willing for the moment to enter metaphysical debate, maintaining that legitimate inquiry begins and ends with the special sciences.[4]

Having explained why his science of being does not compete with the special sciences, Aristotle would nevertheless need to explain why the science of being is legitimate given his own conception of science. As Irwin puts it (1988, 172):

> He must show either that the science of being will, despite appearances, be demonstrative, or that it will somehow be both non-demonstrative and scientific. Aristotle denies himself the first answer, since he implies that the science of being cannot be demonstrative. He has pointed out in Book III that a demonstrative science must define a distinct genus for itself. The science must assume its first principles without proving them within the science; in particular it must "assume the essence" taking for granted a conception of the subject whose coincidents are demonstrated.

On the face of it, Irwin's reading seems well supported. Aristotle famously maintains that demonstrations begin, ultimately, with undemonstrated, immediate, and primitive principles (71b16–23). But the "science we are searching for" concerns an investigation about the primary principles. And Aristotle is well aware that if we are appealing to principles in order to explain our first principle, we invite circularity or regress, and thereby forego understanding (as he goes on to argue in chapter 3 of *Posterior Analytics*). So, the science of being, so runs the argument, cannot be a demonstrative science. In fact, when Aristotle begins to engage in the science of being *qua* being, he begins by defending a principle, to wit, the Principle of Non-Contradiction, which will hereafter be referred to as the PNC, about which there will be much to say in the next chapter (Ross 1908 translation, 1005b18–21):

> Evidently then such a principle is the most certain of all; which principle this is, let us proceed to say. It is that the same attribute cannot at the same time belong and not belong to the same subject and in the same respect; we must presuppose, to guard against dialectical objections, any further qualifications which might be added.

At the beginning of chapter 4 of *Book Gamma*, Aristotle prefaces his most interesting defense of the PNC with a disclaimer, to wit, that strictly speaking

the principle, and others like it, does not admit of demonstration (Ross 1908, 1006a3–10):

> But we have now posited that it is impossible for anything at the same time to be and not to be, and by this means have shown that this is the most indisputable of all principles. Some indeed demand that even this shall be demonstrated, but this they do through want of education, for not to know of what things one should demand demonstration, and of what one should not, argues want of education. For it is impossible that there should be demonstration of absolutely everything (there would be an infinite regress, so that there would still be no demonstration); but if there are things of which one should not demand demonstration, these persons could not say what principle they maintain to be more self-evident than the present one.

This is evidence for the idea that the science of being *qua* being is not being thought of as demonstrative. When he begins to practice it, he seems to say as much. Furthermore, the special sciences take the essence or being for granted (1025b9–16, Irwin's translation, 1988, 172):

> They do not concern themselves with being unconditionally or in so far as it is being. Nor do they give any argument about the essence; but some make it clear by perception, others take it as an assumption, and from this demonstrate with more or less necessity the intrinsic attributes of the genus that concerns them.

The mathematician, for example, studies the properties or numbers (or perhaps magnitudes), bypassing their ontological status, without concern for justification of their existence. And, as Irwin concludes (1988, 173), because the point of the science is that of justifying the absolute first principles, "and therefore to study their nature …. The method of demonstration seems just the wrong one for the tasks assigned to this science."

If, however, the science of being *qua* being is not going to make use of the method of demonstration, what is the method going to involve? The only method at Aristotle's disposal seems to be dialectical. However, Aristotle expresses reservations about the epistemic status of dialectic. At 995b20–25 Aristotle characterizes the dialecticians as endeavoring to examine merely the reputable opinions (πειρῶνται σκοπεῖν ἐκ τῶν ἐνδόξων μόνων). And these seem to lack the epistemic status required for studying substance and first principles. As Aristotle indicates in chapter 4 of *Book Gamma*, (Ross 1908, 1004b23–27):

> For sophistic and dialectic turn on the same class of things as philosophy (περὶ μὲν γὰρ τὸ αὐτὸ γένος στρέφεται ἡ σοφιστικὴ καὶ ἡ διαλεκτικὴ τῇ φιλοσοφίᾳ), but this differs from dialectic in the nature of the faculty required and from

> sophistic in respect of the purpose of the philosophic life. Dialectic is merely critical where philosophy claims to know, and sophistic is what appears to be philosophy but is not.

Aristotle's conception of dialectic seems to be that of an investigation that aims to preserve the reputable opinions. However, insofar as it concerns the realm of opinion, it is difficult to see how it will take us beyond opinion in relation to a science of being, where the expectation is that we justify objective, necessary truths. And, thus, Irwin concludes (1988, 175):

> It seems, then, that dialectical method is the only method Aristotle has to offer for defending first principles, and that dialectic as he normally conceives it cannot provide the sort of defense he wants.

Having made a distinction between science as it concerns the science of being *qua* being and science as it is associated with the special sciences, Irwin considers the hypothesis that Aristotle made use of strong and weak forms of dialectic, where the *strong dialectic*, and not the weak, is putatively up to the task assigned to the science of being. What is then needed is a characterization of *strong dialectic*, or *first philosophy* as we might call it, which provides us with a reason for thinking that we have a distinction with a difference:

> The arguments of first philosophy belong to strong dialectic, in so far as they rely on a new start that is not simply a matter of general agreement. The assumption that there is such a thing as being *qua* being is a presupposition of any scientific study of an objective world at all … and if our new start rests on this assumption, it does not simply argue from common beliefs. Aristotle's account of dialectic and of the starting-point of first philosophy makes it reasonable for him to claim that the method of first philosophy is both dialectical and scientific. (Irwin 1988, 176–7)

As per Irwin's reading, Aristotle wants to show that ontology can be a scientific endeavor, even though it is not a demonstrative science, as it makes claim to statements about the requirements of beings as such, and not simply about common beliefs. *The Paradox of Metaphysical Science* turns upon an equivocation, whereby Claim-I involves an Apodictic Science and Claim-III involves a Hard, Dialectical Science.

Claim-I: Every *Demonstrative*-Science concerns a single genus unified by a common property.
Claim-II: Being is not a genus.
Claim-III: There is a *Dialectical*-Science of being.

And yet Irwin is ready to acknowledge that there is something unsatisfactory here, if Aristotle's views are rightly described (178). One wants to ask whether the practitioner of strong dialectic is grounding his claims upon being or simply upon reputable opinions about being? How does one discern that one is doing the former rather than the latter? And thus, (1988, 178) Aristotle "seems to have more confidence in dialectic than is warranted by his own views about its capacities."

Irwin's translation of the second conjunct in the first line of our *locus classicus* as *intrinsic properties* invites question as well. When we say that something is a kind, we do so by appealing to properties that we take to be intrinsic to it. Water is a kind because it has the intrinsic properties of hydrogen and oxygen and *Homo sapiens* is a kind because it has the properties of being rational and being an animal. Should *being* be considered a kind if it has, as Irwin reads the passage, intrinsic properties? This is, of course, what seems to be denied by Claim-II.

In the following section, we will consider more closely Aristotle's tendency to refer to the science of being qua being as "theology" and "first philosophy." Recall that Irwin has argued that (1988, 172):

> He must show either that the science of being will, despite appearances, be demonstrative, or that it will somehow be both non-demonstrative and scientific. Aristotle denies himself the first answer, since he implies that the science of being cannot be demonstrative.

The fly in the ointments seems to be Aristotle's a posteriori proofs for the First Mover. Aristotle provides a proof for the existence of the Prime Mover in both *Physics Book* VIII and *Metaphysics*, Book XII. And I take it to be Michael Frede's point that one should be reluctant to conclude that work in the *Physics*, where we expect physics, and where physics is a special science *par excellence*, should not be considered demonstrative, insofar as it is theological and part of first philosophy (1987, 94–5). Frede's point is also made forcefully in connection with the nature of change (95):

> Or consider the existence of nature. As we see from the *Physics*, Aristotle thinks that it cannot be proved, strictly speaking, that nature exists. Nevertheless, he tries to establish it dialectically. But nobody is tempted to infer from this that Aristotle thinks that physics is not a [demonstrative] science.

The implication is clear. If we want to claim that the science of being *qua* being is a non- demonstrative science, because its principles are established dialectically, we will be moved to say that physics is not a demonstrative science. Irwin's inference that the "science of being cannot be demonstrative,"

based in part upon Aristotle's dialectical treatment of principles such as the PNC, seems to invite the unwelcome consequence that physics is not a demonstrative science.

I.3: PATZIG'S PUZZLE

Günther Patzig was not the first to recognize the tension in Aristotle's conception of metaphysics as one that is both general and special. However, both his articulation and treatment of the problem, inspired perhaps by a dissatisfaction with the views of Werner Jaegar (1948), on the one hand, and Paul Natorp (1887), on the other, are masterful (1979). Jaegar had suggested that the tension could be resolved by countenancing stages of development in Aristotle's thought. Natorp preferred to make use of the obelus, understanding the references to special metaphysics as creeping in from the margins of later readers, those who were keen to understand metaphysics as theology. I am going to quote Patzig at length here, as he sets up the difficulty eloquently: (Barnes translation (1979) 190–191)[5]

> One of the most difficult problems of interpretation set by *Metaphysics* lies in the fact that in Book IV the sought-for-science (die gesuchte Wissenschaft) is characterized very precisely as the science of being qua being. Unlike the particular sciences, it does not deal with a particular area of being, but rather investigates everything that is, in its most general structural elements and principles. This description fulfills the expectations the reader has derived from Books I and III, which repeatedly aim at the insights of the highest generality. But, on the other hand, and startlingly, we also discover that in chapter 1 of *Metaphysics*, Book VI—only a few pages further on if we exclude Book V as not part of the collection—Aristotle seems to accept this opinion and then, immediately afterwards, to embrace its exact opposite. For in chapter 1 of Book VI, we again find an analysis of the sciences designed to establish the proper place of "first philosophy." Here, however, Aristotle does not, as he did in Book IV, distinguish the "sought-for-science" from all other sciences by its greater generality. First, he divides philosophy into three parts: theoretical, practical, and productive; and then he splits theoretical philosophy into three disciplines. To each of these disciplines he entrusts well-defined areas as objects of research. The "sought-for-science," referred to in Book IV as the "science of being qua being," he now calls first "philosophy," and defines it as the science of what is "changeless and subsistent" (ἀκίνητον καὶ χωριστόν). He explicitly gives it the title of "theology." … Such an unexpected conclusion to so extend an introduction to "first philosophy" must seem strange to the reader.

Aristotle seems to conceive of the science of being *qua* being as a discipline that investigates things in general and at an abstract level. However,

he also seems to say that the science in question, namely first philosophy, is theology (Ross 1908, 1026a6–20):

> That physics, then, is a theoretical science, is plain from these considerations. Mathematics also, however, is theoretical … [for] it is clear that some mathematical theorems consider them qua immovable and qua separable from matter. But if there is something which is eternal and immovable and separable, clearly the knowledge of it belongs to a theoretical science, not, however, to physics (for physics deals with certain movable things) nor to mathematics, but to a science prior to both …. There must, then, be three theoretical philosophies, mathematics, physics, and what we may call theology, since it is obvious that if the divine is present anywhere, it is present in things of this sort.

It seems that the science of being is no longer concerned with beings in general, but one specific kind of being—the immoveable and separable. Now if we read ahead, we will find that theology ultimately deals with the Unmoved Mover. And, so, one might worry that Aristotle outlines a science that is supposed to be universal and general and also specific and particular. Call this *the Paradox of General and Special Metaphysics*:

Claim-Ia: The science of being qua being is concerned with being in general.
Claim-IIa: The science of being qua being is concerned with being in general only if its focus is not something specific.
Claim-IIIa: The science of being qua being focuses on something specific.

With things looking so grave, one might question whether Patzig's dissatisfaction with the readings of Jaeger or Natorp was warranted. In fact, his criticism of these competing views is rather effective. Natorp attempts to remove the tension by excising those sentences that characterize first philosophy as theology. Jaeger attempts to understand special metaphysics as a stage in Aristotle's development that is later replaced by general metaphysics. But both views face the difficulty that Aristotle seems to rely upon the special conception in connection with developed aspects of his philosophy. Aristotle sets up his division of the sciences based upon the objects with which the sciences are concerned. He contrasts the theoretical sciences of being *qua* being with physics and mathematics, and refers to the science of being *qua* being as theology. Physics is said to concern that which exists independently and admits of change, mathematics that which does not exist independently and does not admit of change, and theology is said to concern that which exists independently and does not admit of change. The science of being *qua* being clearly involves a special class of beings. And yet (1979, 190), "as though Aristotle had been listening in to our discussion so far," as Patzig put it, he says the following (Ross 1908, 1026a23–32):

> For one might raise the question whether first philosophy is universal (ἀπορήσειε γὰρ ἄν τις πότερόν ποθ᾽ ἡ πρώτη φιλοσοφία καθόλου ἐστίν), or deals with one genus (ἢ περί τι γένος), i.e. some one kind of being (καὶ φύσιν τινὰ μίαν); for not even the mathematical sciences are all alike in this respect, geometry and astronomy deal with a certain particular kind of thing, while universal mathematics applies alike to all. We answer that if there is no substance other than those which are formed by nature (εἰ μὲν οὖν μὴ ἔστι τις ἑτέρα οὐσία παρὰ τὰς φύσει συνεστηκυίας), natural science will be the first science (ἡ φυσικὴ ἂν εἴη πρώτη ἐπιστήμη); but if there is an immovable substance (εἰ δ᾽ ἔστι τις οὐσία ἀκίνητος), the science of this must be prior and must be first philosophy (αὕτη προτέρα καὶ φιλοσοφία πρώτη), and universal in this way, because it is first. And it will belong to this to consider being qua being, both what it is and the attributes which belong to it qua being.

Clearly Aristotle's considered view sees no contradiction between understanding first philosophy as in one way special, and in another way general. He takes first philosophy as concerned with something special, indeed particular, to wit, the Unmoved Mover. And, even so, in the same breath, he says that the science concerns more than this particular, as it is universal. So, Aristotle himself seems to reject the key presupposition upon which the developmental strategy of Jaeger, as well as the approach favored by Natorp, are predicated. And, therefore, the remaining work seems to be that of explaining the way in which metaphysics can be both general and special.

I.4: THE UNITY OF *GENERALIS ET SPECIALIS METAPHYSICA*

Aristotle claims that first philosophy despite its focus upon immovable and separable substance is nevertheless a science that is universal, and, therefore, a science that concerns beings more generally. We have seen that Aristotle holds that every science concerns a unified single genus, where things are spoken of in virtue of one common property. However, in *Book Gamma* it seems that Aristotle is willing to demarcate sciences with less stringent criteria (Ross 1908, 1003b12–15):

> As, then, there is one science which deals with all healthy things, the same applies in the other cases also. For not only in the case of things which have one common notion does the investigation belong to one science, but also in the case of things which are related to one common nature ….

A strategy for understanding how there can be a science of being, on the one hand, and how that science can be both specific and general in terms of its

subject matter, emerges. The notion that *types* of being are dependent upon a primary substance is familiar from the *Categories*. Were there no primary substances, there would be no qualities, quantities, relations, and so on. And given that the most primary substance is the Unmoved Mover, were there no Unmoved Mover there would be no substances. Patzig, and his followers, made the case that the objects of a general metaphysics will be unified into one field—not by having a single property common to all, but—by being spoken of relative to a primary object, to wit, the Unmoved Mover. The relation between general and special metaphysics begins to appear intelligible. Claim-IIa in *Paradox of General and Specific Metaphysics* is open to rejection. General metaphysics becomes intelligible precisely because the *Being* associated with the Unmoved Mover is in some sense paradigmatic in relation to beings in general. What is more, the *Paradox of Metaphysical Science* can be understood as merely apparent.

Claim-I: Every science concerns a single genus unified by a common property.
Claim-II: Being is not a genus.
Claim-III: There is a science of being.

Aristotle's considered view about what constitutes a science may be more lenient than we originally suspected, as he seems to be open to the idea that the field of objects for a given inquiry may be sufficiently unified by having a common property *or* by bearing the appropriate relationship to a primary object within the field. If this is right, Claim-I may be eliminated (or it is *mutatis mutandis* unproblematic). The strategy holds promise, but one is right to ask for the details concerning the precise nature of the appropriate relation, and how this relation unifies the domain of objects within a field of inquiry.

I.5: THE πρὸς ἓν DOMAIN OF SCIENTIFIC INQUIRY

On Patzig's proposal, Aristotle believes that metaphysics is specific, insofar as it focuses upon something *very* specific, say, something unique, namely the Unmoved Mover, and general insofar as the existence of other beings will be understood in relation to this one entity (*pros hen*). So, one should like to understand this *pros hen* method and how it is going to be put to use.[6] Aristotle puts the matter thus, as he begins chapter 2 of *Book Gamma* (Ross 1908, 1003a32–1003b18):

> There are many senses in which a thing may be said to "be," but they are related to one central point (ἀλλὰ πρὸς ἓν), one definite thing, and are not homonymous.

> Everything which is healthy is related to health, one thing in the sense that produces it, another in the sense that it is a symptom of health, another because it is capable of it. And that which is medical is relative to the medical art, one thing in the sense that it possesses it, another in the sense that it is a function of the medical art. And we shall find other words used similarly to these. So, too, there are many senses in which a thing is said to be, but all refer to one starting-point; some things are said to be because they are substances, others because they are affections of substance, others because they are a process toward substance, or destructions or privations or qualities of substance, or productive or generative of substance, or of things which are relative to substance, or negations of some of these things or of substance itself. It is for this reason that we say even of non-being that it *is* non-being. As there is one science which deals with all healthy things, the same applies in the other cases also. For not only in the case of things which have one common notion does the investigation belong to one science, but also in the case of things which are related to one common nature (οὐ γὰρ μόνον τῶν καθ᾽ ἓν λεγομένων ἐπιστήμης ἐστὶ θεωρῆσαι μιᾶς ἀλλὰ καὶ τῶν πρὸς μίαν λεγομένων φύσιν); for these in a sense have one common notion. It is clear then that it is the work of one science also to study all things that are, *qua* being—But everywhere science deals chiefly with that which is primary, on which other things depend, and in virtue of which they get their names. If, then, this is substance, it is of substances that the philosopher must grasp the principles and the causes.

Aristotle's idea is typically explained in the following way (See Shields (1999) and 2012, esp. 349 ff., for a lucid account, upon with I base the following.). Consider the following three claims:

(1) Socrates is healthy.
(2) Socrates' diet is healthy.
(3) Socrates' complexion is healthy.

In (1) the term "healthy" means something akin to "flourishing biologically." But this same term cannot mean the same thing in (2) as a substitution of "flourishing biologically" therein yields non-sense:

2n. Socrates diet is flourishing biologically.

To say that a diet is flourishing biologically doesn't even rise, as the saying goes, to the level of being false. Thus, "flourishing biologically" is the explication of "healthy" in (1) and this explication cannot be substituted for "healthy" in (2) in a meaning-preserving way. This shows that the same term "healthy" is used equivocally in (1) and (2). The explication of "healthy" in (2) is something akin to "productive of flourishing biologically." We see, thus, that the meaning of the uses of "healthy" in (1) and (2) differ. Nevertheless, the term "healthy"

as it is used in (1) and (2) are in fact related, in a way, in contrast, to the word in (4) and (5):

(4) Bernie Sanders leans to the left.
(5) Randy Johnson throws with his left.

The term "left" in (4) and (5) is entirely equivocal. The explication of the term in (4), say "politically liberal," has nothing to do with the explication of "left" in (5). Where, in contrast, the respective explications of (1) and (2) clearly have something to do with one another. Furthermore, the same may be said of claim (3) in relation to both (1) and (2). If we substitute the explications of (1) or (2) for "healthy" in (3) we do not do so in a meaning-preserving manner.

(3s1) Socrates' complexion is flourishing biologically.
(3s2) Socrates' complexion produces flourishing biologically.

Complexions do not flourish biologically as it is those things that have complexions that are doing the flourishing. So "healthy" in (3) cannot mean what it does in (1). And, complexions do not produce flourishing, as they are a symptom of it. And, so, we find that the use of "healthy" in (3) is explicated as:

(3e) Socrates' complexion is a symptom of his flourishing biologically.

And, again, we see that while the explication of "healthy" in (3) differs in meaning from that of (1) and (2), it is not as if the explications in question are not importantly related. In fact, it appears that the explication of (2) and (3) require mention of the explication in (1), though it is not the case that the explication of (1) requires appeal to either (2) or (3). And, so, we can enumerate several points here about the relation that Aristotle seems to have in mind. We have the appropriate kind of relation to one thing (*pros hen*), when:

Non-Univocity: We have a set S $\{e_1, e_2, e_3, e_4 \ldots e_n\}$ of non-univocal items, such that their explications are equivocal.
Intelligibility: The proper subset of explications whose elements are $\{e_2, e_3, e_4 \ldots e_n\}$ nevertheless contains explications all of which are related to one explication e_1, such that their intelligibility relies upon e_1.
Asymmetry: e_1 does not rely upon $\{e_2, e_3, e_4 \ldots e_n\}$ for its intelligibility.

Now one might wonder whether we have suppressed one bulge in the fabric only to have another emerge. If *being* is, like *healthy*, said in many ways, relative to one nature, as Aristotle maintains in chapter 2 of *Book Gamma*

(1003a33), one would like to know in virtue of what being is thus said in many ways—especially if there aren't kinds of being about which one may speak. And, if there are kinds of being about which one may speak, then it seems that one class of entities, numbers, for example, will be radically different from another, coniferous trees, in virtue of their existing in different ways. But this seems to run counter to the argument frequently provided for Claim-II of *Paradox of Metaphysical Science*: Being is not a genus.

Michael Frede has argued that we should distinguish between kinds and ways of being (1987, 85). Secretariat and Maddy, as it were, are different kinds, but horses and dogs do not exist in different ways. Both exist in the way that natural substances exist—independently while admitting of change. The square root of four, however, exists in a way different from the way in which sensible substances exist. Numbers or magnitudes do not exist independently even though they do not admit of change. And the pure actualities, the separate substances, of which the Unmoved Mover is paradigmatic, exist in a way differently from the sensible substances and the entities we employ to count them, as they exist independently and they do not admit of change.

If we understand the second claim in the *Paradox of Metaphysical Science* as "Being is not a kind," and distinguish, with Frede, kinds from ways of beings, we can understand how being is spoken of in many ways. Being is spoken of in many ways, not in relation to various *kinds of being*, but, rather, in virtue of different *ways of being*. Of course, we need to be confident that we have a distinction with a difference, in order to have confidence in Frede's approach to the *Paradox of Metaphysical Science*.

There is a tendency to think that quantifiers range without restriction while the domains thereof are limited by the context of discussion. In most contexts, an utterance such as *There isn't any decent beer* does not indicate that decent beer does not exist, but, rather that we cannot currently access any decent beer. However, as Eli Hirsch has put it (2011):

> It seems perfectly intelligible to suppose that there can also be semantically restricted quantifiers, that is, quantifiers that, because of the semantic rules implicit in a language, are restricted in their range in certain specific ways. If the quantifiers in a language are semantically restricted, they are always limited in their range, regardless of conversational context.

If one is going to countenance ways of being, representing these ways in terms of the existential quantifier rather than by introducing special predicates has its advantages. Kris McDaniel, following Heidegger, finds the idea of *being* as a super-property, had by everything, fairly unintelligible. He likewise finds that *being* is not a determinable property in the way that *being red* is a determinate of *being colored* (2009, 302). And, therefore, he

recommends regimenting our discourse about being, by employing quantifiers with restricted ranges, rather than introducing predicates for these ways of being, as customarily we use predicates in relation to properties. As we have seen, Aristotle seems to think that because *being* is not determinable in this sense, it is not really a kind (*genos*) or property at all. If we associate predicates with properties, and we can formulate our discourse about ways of being without using predicates that have for their extension the ways of being we want to countenance, instead letting these ways of being fall severally under a set of restricted quantifiers, one can countenance ways of being without having being admit of kinds. The ways of being are packed into the pronominal subject position rather than the predicate. Consider (a) There is a horse, (b) There is a square root of four, and (c) There is an Unmoved Mover.

(a) $\exists_{\text{separate-changing}}$ x (x is a horse)
(b) $\exists_{\text{non-separate-non-changing}}$ x (x is a square root of four and for any y such that y is the square root of four y = x)
(c) $\exists_{\text{separate-non-changing}}$ x (x is an Unmoved Mover, and for any y such y is an Unmoved Mover y =x)

If one can, moreover, understand ways of being as represented by restricted-quantifiers rather than the predicates of discourse on being, one can make a distinction between ways of being and kinds of being. One may, thereby, make use of the strategy employed by Frede and Patzig in relation to the *Paradox of Metaphysical Science* and the Paradox of Special and General Metaphysics without giving up Aristotle's claim that being is not a genus. However, if one can countenance (a), (b), and (c), one is presumably saying that (a), (b), and (c) exist, and, thereby quantifying over (a), (b), and (c). Is there a quantifier here that may range over the ways of being here represented by the restricted quantifiers? It is likely that one will need to follow some of the advocates of restricted quantification in recognizing a general, unrestricted form of quantification as well. This will be the existential quantifier commonly associated with mathematical logic (McDaniel 301).

We are left with two important questions here. The first is whether the idea of having restricted quantifiers, quantifiers that are fundamental in the sense that they are prior to the general existential quantifier, and restricted to certain domains, is intelligible. The second concerns how amenable Aristotle's thought is to this idea. With respect to the first question, Peter van Inwagen has been an important critic of the view that being is anything but univocal (2014, 61):

> That "exists" has different meanings when it is applied to objects in different categories is evidently an attractive position. Attractive or not, it is false.

> No one, I hope, supposes that number words like "six" or "forty-three" mean different things when they are used to count objects of different sorts. The essence of the applicability of arithmetic is that numbers can count anything, things of any kind, no matter what logical or ontological category they may fall into; if you have written thirteen epics and I own thirteen cats, the number of your epics *is* the number of my cats. But existence is closely allied to number. To say that unicorns do not exist is to say something very much like this: the number of unicorns is 0; to say that horses exist is to say essentially this: the number or horses is one or more. And to say that angels or ideas or prime numbers exist is to say—more or less—that the number of angels, or ideas, or of prime numbers, is greater than 0. The univocacy of number and the intimate connection between number and existence should convince us that there is at least very good reason to think that existence is univocal.

A (perhaps overly) truncated version of van Inwagen's argument might run as follows:

(1) Affirmation of existence of some x that is F is denial of the number 0 in relation to Fs.[7]
(2) Number terms are univocal.
So: (3) Affirmation of existence is univocal.

Aristotle, it turns out, is not going to object to van Inwagen's claim that "existence is closely allied to number" and that there is an "intimate connection between number and existence." In chapter 2 of *Book Gamma*, he says the following (Ross 1908, 1003b22–32):

> If, now, being and unity are the same and are one thing in the sense that they are implied in one another as principle and cause are, not in the sense that they are explained by the same definition (though it makes no difference even if we suppose them to be like that—in fact this would even strengthen our case); for "one man" and "man" are the same thing, and so are "existent man" and "man," and the doubling of the words in "one man and one existent man" does not express anything different (it is clear that the two things are not separated either in coming to be or in ceasing to be); and similarly "one existent man" adds nothing to "existent man," and it is obvious that the addition in these cases means the same thing, and unity is nothing apart from being.

However, while Aristotle does countenance a connection between existence and number, he does not share van Inwagen's view that number terms are univocal. He goes on to say (Ross 1908, 1003b31–35):

> [A]nd if, further, the substance of each thing is one in no merely accidental way, and similarly is from its very nature something that is: all this being so, there

> must be exactly as many species of being as of unity (ὥσθ' ὅσα περ τοῦ ἑνὸς εἴδη, τοσαῦτα καὶ τοῦ ὄντος). And to investigate the essence of these is the work of a science which is generically one.

Furthermore, in *Physics* VII, Aristotle seems to go so far as to say that number terms are homonymous (Hardy and Gaye 1930, 248b16–20):

> In fact, there are some terms of which even the definitions are equivocal; e.g. if "much" were defined as "so much and more," "so much" would mean something different in different cases: "equal" is similarly equivocal; and "one" again is perhaps inevitably an equivocal term; and if "one" is equivocal, so is "two."'

And he seems to reason thereafter that we describe cases where there is much water and much speech, and that "much' does not seem to be univocally used. Maybe his point is that to speak in relation to too much talking within a classroom is very different from speaking of too much water in, say, a flood. Furthermore, it is difficult to understand a body of water as equal to the length of a philosophical paper, or one colloquium talk as equal to one body of water. So, Aristotle might just disagree with van Inwagen's claim, for example, that the number of epics written by Virgil is equal to the number of dogs at my house.

Whether Aristotle would be right to reject the idea that number is univocal or not, one might have reservations about attributing to Aristotle an acceptance of restricted-quantifiers. The treatment of quantified statements in the *Organon*, one might argue, is different in kind to the treatment of quantified statements now familiar in connection with mathematical logic. If Aristotle hasn't the conception of quantification associated with mathematical logic, he won't have the conception of restricted quantification that builds therefrom. The force of this argument has to be acknowledged. Insofar, however, as we are interested in the extent to which Aristotle's science of being holds promise, it is worth considering some of the resources that may be available for a practitioner. And the fact that Aristotle takes existence claims as analogous to number claims, while taking number claims as non-univocal, provides some reason for thinking his view analogous to those who countenance restricted quantification. Contemporary opponents to restricted quantification tend to believe that the general quantifier can be used to express everything we need to express. But if one is going to countenance ways of being, carving reality at the joints, so as to countenance structure, without resorting to treating the ways as kinds, as Aristotle would have it, representing the ways by means of restricted quantification may ford the impasse. In the final chapter, we will inquire in more detail about Aristotle's acceptance of a ready-made, structured world in connection with his views upon truth and perspective.

I.6: CHALLENGES FOR A πρὸς ἕν DOMAIN OF BEING

Christopher Shields questions the efficacy of the Frede-Patzig approach by considering how the *pros hen method* is effectively employed:

(1) Socrates is healthy.
(2) Socrates' diet is healthy.
(3) Socrates' complexion is healthy.

The account of healthy in (1), moreover, is different in kind to the account of healthy in (2). If we define the way in which Socrates is healthy as "flourishing biologically" we can easily restate (1) by a substitution of "flourishing biologically" for "healthy":

(1*) Socrates is flourishing biologically.

Attempting to substitute "flourishing biologically" for "healthy" in either (2) or (3), in contrast, yields non-sense:

(2*) Socrates' diet is flourishing biologically.
(3*) Socrates' complexion is flourishing biologically.

Aristotle seems to take accounts of "healthy" that are rightly related to "flourishing biologically" to be account-dependent on this primary account, so that an explication of healthy-diet will depend upon an account of biological flourishing—*mutatis mutandis* for complexions, instruments, and the other phenomena we speak of in relation to the primary or core notion, to wit, biologically flourishing. And so here we see the *pros hen method* unifying a science of health in an intelligible way. But crucial to this very method is establishing that the various items that are understood relative to the *one nature* have accounts that (i) are non-univocal, (ii) that depend upon an account of the *one nature*, and (iii) the dependence in question is not mutual, as the *one nature* does not rely upon the related items for its account.

I.6.1: Shield's First Challenge

Shields argues that non-synonymy entails incommensurability, that the fact that beings are commensurable entails that beings are univocal, and that *the pros hen method* cannot extend, therefore, to being. His formulation, is here stated verbatim (1999, 261):

(1) Two *F* things are non-synonymously *F* only if they are incommensurable as *F*s.
(2) Beings are always commensurable as beings.
(3) Hence, beings are not non-synonymously *F*s.
(4) The distinction between homonymy and synonymy is exhaustive.
(5) Hence, beings are always synonymously beings.
(6) If beings are always synonymously beings, then they are univocally beings.
(7) Therefore, since beings are core-dependent homonyms only if they are non-univocal, beings are not core-dependent homonyms ….

Proposition (5) follows from (3) and (4), while Proposition (7) follows from (5) and (6) …

The first thing to notice is that a translation of "*asymblêta*" as incommensurable makes the argument inescapably modal. I take the "always" in premise (4) to express necessity as well. I take the modality in question to be *de dicto*, as it is difficult to see how the argument will run *de re*. I confine to a footnote a counter-model to the *de re* reading.[8] So I read the argument as follows:

U is the relation _ is qua F univocal to _
S is the relation _ is qua F synonymous to _
C is the relation _ is rightly compared qua F to _
M is the relation _ is more, less, or equal in degrees of F to _
(1) [] $\forall x \forall y$ {[$(x \neq y)$ & $\neg Sxy$] $\Rightarrow$ $\neg Cxy$}
(2) [] $\forall x \forall y$ {[$(x \neq y)$ & (Mxy)] $\Rightarrow$ Cxy}
(3) [] $\forall x \forall y$ {[$(x \neq y)$ & Bx & $By \Rightarrow (Mxy)$]
[2,3] (4) [] $\forall x \forall y$ {[$(x \neq y)$ & $(Bx$ & $By)$] $\Rightarrow$ Cxy}
[1,4] (5) [] $\forall x \forall y$ {[$(x \neq y)$ & $(Bx$ & $By)$] $\Rightarrow$ Sxy}
(6) [] $\forall x \forall y$ {[$(x \neq y)$ & Sxy] $\Rightarrow$ Uxy}
[5,6] (7) [] $\forall x \forall y$ {[$(x \neq y)$ & $(Bx$ & $By)$] $\Rightarrow$ Uxy}

By the conclusion of this argument it is thought that beings do not satisfy the first condition of the *pros hen method*, as they are univocal. And, so, we face the *Paradox of Incommensurability*:

Claim-I$_{pi}$: There is a science of being that relies upon the *pros hen method*.
Claim-II$_{pi}$: If there is a science of being that relies upon the *pros hen method*, then being is non-univocal.
Claim-III$_{pi}$: Being is univocal.

A word or two about the predicates may help before turning to the premises of this argument. The argument is a non-starter if the relations of comparison

and degree, given synonymy, are not *comparison* and *degree* relative to some F. This is not to say, for example, that the only variety of comparability is that technically employed here. But, as Shields points out, it is no objection to his argument that there are two things that are not synonymous in one respect, but comparable nevertheless, in virtue of being synonymous in another (1999, 262–3).

With respect to the evidence that Shield's provides for (3), there is a controversy worth considering. Aristotle seems to want to say that relation is least of all a nature or substance, and that it is posterior to quantity and quality (1088a21–22):

> But the relative is least of all the categories a certain nature or substance (τὸ δὲ πρός τι πάντων ἥκιστα φύσις τις ἢ οὐσία τῶν κατηγοριῶν ἐστι), and it is posterior to quality and quantity (καὶ ὑστέρα τοῦ ποιοῦ καὶ ποσοῦ) …

And there is nothing, heretofore, that commits Aristotle to there being degrees of being among the categories. That relation has less of a nature, and is radically different from substance is not overly surprising. He says that relation is posterior to quality and quantity (ὑστέρα τοῦ ποιοῦ καὶ ποσοῦ). However, being posterior doesn't entail that *relation* has less *being* than *quantity*, *quality*, and *substance*. But he continues by saying: " σημεῖον δ᾽ ὅτι ἥκιστα οὐσί τις καὶ ὄν τι τὸ πρός τι …" And there are at least two ways to read Aristotle here.

R_1 It is indicative that (σημεῖον δ᾽ ὅτι) relation (πρός τι) is *least* some substance and *[least]* some being (ἥκιστα οὐσί τις καὶ ὄν τι) …
R_2 It is indicative that (σημεῖον δ᾽ ὅτι) relation (πρός τι) is *least* some substance, that is, being (ἥκιστα οὐσί τις καὶ ὄν τι) …

On the first reading, "least" modifies both *ousia* and *on*. On the second, the putative conjunction (καὶ) is epexigetical. On the former, we seem to read Aristotle as stating that the categories vary in degrees of being. On the latter, he falls short of asserting this. In R_2 Aristotle seems to be saying that relation is least of all a substance and being, and "being" is just another way of saying "substance." (The locution might be usefully compared with "He is least of all a conservative, that is, a Republican.") Shields, favoring R_1, notes (1999, 264 n.95) that here Aristotle likely means "πάντων ἥκιστα" as above at 1088a23. But it is hard to see how this helps his case, for, if so, Aristotle likely means:

R_3 It is indicative that (σημεῖον δ᾽ ὅτι) relation (πρός τι) is *least* some substance, *of all the categ*ories, and *[least]* some being (ἥκιστα οὐσί τις καὶ ὄν τι) …
R_4 It is indicative that (σημεῖον δ᾽ ὅτι) relation (πρός τι) is least some substance, *of all the categories*, that is being (ἥκιστα οὐσί τις καὶ ὄν τι) …

And it would seem that we return to the issue, wondering whether there is a reason that recommends R_3 over R_4? It is hard to see the passage as telling one way or the other, with respect to the thesis that the categories admit of degrees of being. In *Metaphysics* 1026b5–21, Aristotle says that it is apparent (φαίνεται) that the coincidental (τὸ συμβεβηκὸς) is something near to non-being (ἐγγύς τι τοῦ μὴ ὄντος). He seems to take a coincidental-unity, such as Socrates-sitting or Musical-Coriscus, as a pale shadow of a being. And he thereafter provides an argument to the effect that, while the other things *which are* admit of generation and destruction, the coincidental does not, which is something echoed in the clause that follows R_3 (or R_4 as it were): "[O]f it … [i.e., relation,] alone there is not generation or destruction or movement …." But attributing a thesis of degrees of being to Aristotle is not here forced. Donald Morrison considers three interpretations of Aristotle's tendency to speak of more or less in relation to being (1987, 383–5):

Intensity Reading: "x is more substance than y" means "x has more degrees of being than y"
Metalinguistic Reading: "x is more substance than y" means "x is called substance in a stricter sense than y".[9]
Ordering Reading: "x is more substance than y" means "x is prior in order to y"[10]

Only the Intensity Reading entails that Aristotle accepted degrees of being (though the Metalinguistic and Ordering Readings may well be compatible with the view.) Is there something to recommend the Intensity Reading over its competitors? To my mind, the best argument (Morrison 1987, 286) on behalf of the Intensity Reading comes at 3b33–4a10. Aristotle says the following (Ackrill's translation 1963):

> Substance, it seems, does not admit of a more and less. I do not mean that one substance is not more a substance than another (we have said that it is), but that any given substance is not called more or less that which it is. For example, if this substance is a man, it will not be more a man or less a man either than itself or than another man. For one man is not more a man than another, as one pale thing is more pale than another. Again, a thing is called more, or less, such-and-such than itself; for example, the body that is pale is called more pale now than before, and the one that is hot is called more, or less, hot. Substance, however, is not spoken thus. For a man is not called more a man now than before, nor is anything else that is a substance. Thus, substance does not admit of a more and a less.

Aristotle begins with the claim that substance does not admit of more or less—a claim which, taken in isolation, might suggest that Aristotle does not

recognize degrees of being. However, he immediately qualifies this statement by saying "I do not mean that one substance is not more a substance than another λέγω δὲ οὐχ ὅτι οὐσία οὐσίας οὐκ ἔστι μᾶλλον οὐσία (we have said that it is), but that any given substance is not called more or less that which it is." Aristotle maintains on the one hand that a given substance, Socrates, for example, is not more human than Callias. On the other hand, however, he affirms that (ὅτι) one substance (οὐσία) can be more μᾶλλον οὐσίας than another. As Ackrill notes (1963, 89), the point Aristotle makes here is not limited to what would normally be thought a substance. Insofar as there are two cobblers, we are loath to say that one is more a cobbler than the other. And elsewhere, Aristotle seems to recognize this, for, as we will see below, he thinks that insofar as we have colored things, one is not more colored than another, though a colored thing, such as a dog, may be considered more white (or pale) than another, for example a horse (248b15–21). Now an attempt might be made to read Aristotle's claim that one thing can be more substance than another either on the Metalinguistic or the Ordering Reading. However, as Morrison argues (386), Aristotle first contrasts *ousia* with predicates such as *man* and *animal*, maintaining that the former but not the latter admit of more or less. And one cannot read the more and less that *ousia* admits of, and *man* and *animal* do not, to be something other than the more and less associated with the intensity reading. For Aristotle maintains that *man* and *animal* do not admit of more or less in the way that *pale* or *hot* do (Ackrill's translation 1963, 4a1–5):

> Again, a thing is called more, or less, such-and-such than itself; for example, the body that is pale is called more pale now than before, and the one that is hot is called more, or less hot.

So, *ousia* is not like *man* or *animal* in that *man* and *animal* do not admit of more or less and *ousia* does. And the variety of "more and less" he uses to illustrate the point that *man* and *animal* do not admit of more and less is paradigmatically intensive. Is the argument conclusive? Aristotle, as you may recall, says the following (Ackrill 1963):

> Substance, it seems, does not admit of a more and less. I do not mean that one substance is not more a substance than another (we have said that it is) ….

Where has Aristotle said this? Presumably in 2b-7 to 2b-22 where Aristotle says the following (Ackrill 1963):

> Of the secondary substances the species is more a substance than the genus, since it is nearer to the primary substance. For if one is to say of the primary

> substance what it is, it will be more informative and apt to give the species than the genus. For example, it would be more informative to say of the individual man that he is a man than that he is an animal …. Further, it is because the primary substances are subjects for all the other things and the other things are predicated of them or are in them, that they are called substances most of all. But as the primary substances stand to the other things, so the species stands to the genus: the species is a subject for the genus (for the genera are predicated of the species but the species are not predicated reciprocally of the genera). Hence, for this reason too the species is more a substance than the genus.

In his commentary on the section, Ackrill maintains (89) that "[t]here is a certain ambiguity in 'more,' since to say that a species is more of a substance than a genus is to assign it some sort of priority, but not to ascribe to it a higher degree of some feature as one does in saying this is more hot than that." And, so, he seems to want to resist the Intensity Reading. Maybe Ackrill's idea can be supported with the following line of reasoning. We can say that an individual thing is more white than another individual thing. But when we say that an individual is more substantial than a genus, for example, we seem to jump up to a level of orders. Consider the following schema: "x has more F than y," and let the value of x be Callias, let the value of y be Socrates, and let F be the predicate pallor, and the output is true. Let x be Callias, let y be Socrates, and let F be human, and the output, according to Aristotle, is false. Now consider a sentence that Aristotle seems to accept:

T (A) Socrates has more substance than animal.

The level of abstraction here requires an analogue, in terms of paleness, to run as follows:

(B) Callias has more pallor than color.

That is, if we jump up to a level of abstraction where, as in (A), we let the value of x be a particular, while the value of y is a genus, the result is nonsense. And this is some indication that the use of "more" in (A) is not the use that we find, for example, in (C).

T (C) Callias has more pallor than Socrates.

That is, once we move to a schema where the relata run from particular to genus in relation to certain predicates, in comparative statements, "more" functions differently. If we follow Morrison's argument, it is at the expense of seeing Aristotle as overlooking this. And as we will see below,

in consideration of Shield's first premise, Aristotle seems to recognize this very point. Morrison's argument, therefore, may not be conclusive, and the issue of whether Aristotle countenanced degrees of being seems for the moment inscrutable.[11]

The evidence for premise (1) revolves in large part around chapter 4 of *Physics* VII, in the context of distinguishing kinds of motion. Shields directs us to *Physics* 248b6–10 (Shield's translation):

> Non-synonymous things are all incommensurable. Why is <it not possible to say> of what is not commensurable, e.g., a pen, the wine, or the highest note, whether one is sharper <than the others>? The highest note in a scale is, however, commensurable with the lead note, since "sharp" signifies the same for both.

We can consider below whether the broader context of the chapter, wherein this statement is found, supports the argument. Shield, moreover, defends (3) by arguing that Aristotle is willing to allow for things within the categories to have different degrees of being (1088a22–34). Beings in one category are more or less real than beings in another. But then, so runs the argument, they are comparable in these terms. And if they are thus comparable they are synonymous, and, thereby, univocal.

However, Aristotle does not seem to think that admitting of degree in relation to a certain F is sufficient for commensurability, and, that, more is needed (Hardy and Gaye 1930, 248b15–21):

> Must we then say that, if two things are to be commensurable in respect of any attribute, not only must the attribute in question be applicable to both without equivocation, but there must also be no specific differences either in the attribute itself or in that which contains the attribute—that these, I mean, must not be divisible in the way in which color is divided into kinds? Thus, in this respect one thing will not be commensurable with another, i.e. we cannot say that one is more colored than the other where only color in general and not any particular color is meant; but they are commensurable in respect of whiteness.

The lesson seems to be that having the *relata* admit of degree in relation to the same F is not sufficient for commensurability. The addition that is further needed is that the attribute involved in the comparison is not divided into kinds like color. And color seems here to be an example of something that reaches a level of abstraction for which comparison is no longer fit. The various surfaces are commensurable in terms of whiteness. But white is not more of a color than purple, nor is a white thing more or less colored (on Aristotle's view) than a blue.

Now consider an ontology where being is univocal—an ontology where the conclusion of Shield's argument is true. If anything is excessively general it is *being* so understood. But then the things that have being, just as the things that have colors cannot be said to have more color than one another, cannot be said

to have more being than one another. Let the subscripts *g* and *s* designate general and specific beings.

(3_s) [] $\forall x \forall y$ {[$(x \neq y)$ & $B_s x$ & $B_s y \Rightarrow (Mxy)$]
(3_g) [] $\forall x \forall y$ {[$(x \neq y)$ & $B_g x$ & $B_g y \Rightarrow (Mxy)$]

We have therefore two ways to interpret the third premise. And the way we interpret the third premise affects how we interpret the remaining premises. Should we take the being in question to be of the general variety, in the third premise, we should take it to be general thereafter, lest the reasoning turn upon an equivocation. On the (3_g) interpretation, the conclusion of Shield's argument comes out as true. If there aren't varieties of being, anything that has being, has it univocally. But then, anything that has it lacks a specific variety thereof. Why is it, we are told, that colored things are comparable? Because there are specific varieties thereof, red, white, blue, and so on, for which objects may be severally compared in relation. But if there are no specific varieties of beings, there are no comparisons, in terms of being, that can be made. This means we cannot successfully derive (4) from our premises, and Shield's argument is invalid.

F (4_g) [] $\forall x \forall y$ {[$(x \neq y)$ & $(B_g x$ & $B_g y)$] $\Rightarrow Cxy$}
T (7_g) [] $\forall x \forall y$ {[$(x \neq y)$ & $(B_g x$ & $B_g y)$] $\Rightarrow Uxy$}

If being is general, moreover, it is like color, and the things that have it are incomparable in terms of it. And, of course, there is no improvement on the (3_s) interpretation as the existence of irreducible varieties of being is inconsistent with the conclusion Shields draws. This is not to say that a (7_s) would be false.

T (7_s) [] $\forall x \forall y$ {[$(x \neq y)$ & $(B_s x$ & $B_s y)$] $\Rightarrow Uxy$

It is merely to say (7_s) does not establish Shield's conclusion. To think so is to commit a quantifier flip fallacy. Having every item that shares the same variety be univocal, does not entail that there is only one "variety" that every item may have, any more than everyone's having a mother entails that there is some person who is the mother of everyone.

To be sure, Shields does believe that there can be varieties of being within Aristotle's system. He believes that the variety of beings will be varieties solely in terms of the amount of being they have. The being that objects have will be qualitatively identical, though the amount objects have will differ quantitatively. It would seem that the varieties are quantifiably reducible. And one might not think the varying degrees are varieties at all. Is warmth a different variety of heat or simply a different degree thereof?

But there is a more grave concern . We have seen that colored things admit of more or less only because there are specific varieties of color. So,

it would seem that we would first need varieties of being, before we could begin to discuss the degrees to which objects have being. And, so, we might say, Shield's argument places the cart before the horse. We cannot reconstruct Shield's argument consistently while considering the broader context wherein 248b6–10 occurs, as the passage he cites in support of (1).[12]

I.6.2: Shield's Second Challenge

Consider now the case of *being*, where, as on the Frede-Patzig account, there are ways of being that relate to primary ways of being (and, ultimately, to the Unmoved Mover). As Shields argues, the Frede-Patzig account should lead us to expect results similar in kind to those associated with the example of health above, such that the ways of being that are understood relative to the Unmoved Mover have accounts that (i) are non-univocal (ii) have accounts that depend upon an account of the *one nature*, and (iii) the dependence in question is not mutual, as the *one nature* does not rely upon the related items for its account. As Shields sees it, this requires the *pros hen method* to apply to the following A-sentences (2012, 352–3):

(1a) Socrates is. (1b) Socrates is healthy.
(2a) Socrates' being in the agora is. (2b) Socrates' diet is healthy.
(3a) Socrates' weighing fourteen stone is. (3b) Socrates' complexion is
(4a) The Unmoved Mover is healthy

And Shields sees no way of so applying it. When we examine this set of sentences, in contrast with (1b), (2b), and (3b) above, the *pros hen* method appears to misfire at every stage. First, we must have accounts in the A-sentences that are non-univocal. And, yet, we seem to be at a loss, as Shield's puts it, when it comes to even providing an account of "is" for the A-sentences. Without accounts, we are without non-univocal accounts, and cannot satisfy requirement (i) above. Furthermore, without non-univocal accounts from (1a) to (4a), we are not in a position to locate a primary account upon which the secondary accounts depend asymmetrically, so conditions (ii) and (iii) go unsatisfied. So, the problem with applying the *pros hen* method to *being* seems to be that, we need *accounts* of the putative varieties of *being* to make use of it. Of course, some might see an ontological dependence relation between some types of *being* and others. But ontological dependence is not enough, so runs the argument, as the *pros hen* method relies upon account dependence (Shields 2012, 353).

Several considerations: (i) Shields appears to be skeptical about the prospects of showing ontological dependency relations to obtain, and (ii) he believes that if one were able to show the ontological dependencies to obtain,

even so, this would not speak to the issue of whether being is univocal or not. Finally, (iii), one needs to show that being is non-univocal by providing non-univocal accounts of being. No accounts, no *pros hen* method. And, thereby, we have the makings of another exegetical paradox. Call it the *Paradox of Existential Accountability*:

Claim-I_{ea}: If the *pros hen* method is applicable to a domain, there are accounts of the entities therein.
Claim-II_{ea}: There are no accounts of ways of being within the domain of ways of beings.
Claim-III_{ea}: The *pros hen* method is applicable to the ways of being.

Maybe we can begin assessing the challenge here presented by, first, considering the merits of attributing to Aristotle the ontological dependencies, and second, what countenance thereof would mean for the *pros hen* method.

I.6.3: Ontological Dependency

Perhaps it is important to remind ourselves that when it comes to the question of being, we are dealing with The Perennial Question (1028b2–b7, tr. Bostock 1994):

> Indeed, the question that was, is, and always will be asked, and will always cause difficulty—that is the question "What is being?"—is the question "What is substance?" This it is that some say is one, some more than one; that some say is finite in number, some infinite. And so we too must consider chiefly and primarily and (so to say) exclusively what it is that is in this way.

An overwhelming sense of optimism about the prospects of finding an account of being is not something that one finds here in chapter 1 of *Book Zeta*. But it is natural, I think, to read Aristotle as taking the *question of being* to be importantly related to dependency relations. Should we discover that dependencies hold between one way of being and another, we have reason to believe the one a substance for the other. We are reminded of this, for example, in the opening lines of *Metaphysics* XII (Ross 1908, 1069a18–25):

> The subject of our inquiry is substance; for the principles and the causes we are seeking are those of substances. For if the universe is of the nature of a whole, substance is its first part; and if it coheres merely by virtue of serial succession, on this view also substance is first, and is succeeded by quality, and then by quantity. At the same time these latter are not even *being* in the full sense, but are qualities and movements of it, or else even the not-white and the not-straight

> would be being; at least we say even these are, e.g. "there is a not-white." Further, none of the categories other than substance can exist apart.

Alongside our passage that relates the *pros hen* method to being, which we have already considered from *Book Gamma*, we should also place the opening of *Metaphysics* in *Book Zeta*, as Aristotle's countenance of ways of being and their relation to the *pros hen* method is repeated there (tr. Bostock 1999, 1028a10–):

> We speak in many ways of what is, i.e., the ways distinguished earlier in our work on the several ways in which things are spoken of. On the one hand, it signifies what a thing is and a this, and on the other of what quality or quantity or any of the other things thus predicated. But while *what is* is spoken of in these various ways, it is clear that the primary thing *that is* is what a thing is which signifies [its?] substance. (For when we say of what quality a thing is we say that it is good or bad, but not that it is three feet long or a man; but when we say what it is we do not say that it is pale or hot or three feet long, but that it is a man or a god.) And other things are said to be by being either quantities of what is in this way, or qualities, or affections, or something else of this sort.

Aristotle provides what he takes to be a paradigm instance of a substance, for example, god or man, and, the kinds of things predicated thereof. And then he proceeds to argue that the kinds of things predicated thereof depend upon the kinds of things he is taking to be substances. At (1028ba20–a30), Aristotle makes the reasonable determination that we cannot even speak of walking or sitting or healthy without, ultimately, talking about that which is the thing that is walking, sitting, or healthy. Clearly, certain kinds of predications depend for their being on substances.

Now, with respect to the categories of predication, familiar from the *Categories*, it may be that Immanuel Kant is correct in thinking they were arrived at without principle (tr. Pluhar (1996) A81/B107): "Locating these basic concepts was a project worthy of an acute man like Aristotle. But having no principle, he snatched them up as he came upon them."[13] There are however more charitable avenues to take, that may be cursorily here adumbrated.[14] Ackrill (1963, 78–81) provides two fairly similar ways of generating the categories, but I will focus here on only one of those. On this view, we picture Aristotle asking as many questions about primary substances as possible:

What is Socrates? A Human Substance
Where is Socrates? In the Agora Place
How much is Socrates? Fourteen Stones Quantity …

It is not unreasonable to believe that we can generate many of, though perhaps not all and only, the right categories using this question and answer method. And every question here focuses upon, or relates to one (*pros hen*) particular substance. If Ackrill is right, Kant's claim that the categories are arrived at in an unsystematic fashion is well wide of the mark. For if Ackrill's interpretation is Aristotle's, Aristotle's method can be expressed, I submit, in terms that are very nearly mechanical. We take as input a question such as we find in (1s) or (1q) below and we arrive systematically at a category as follows (See Figure 1.1 and Table 1.1):

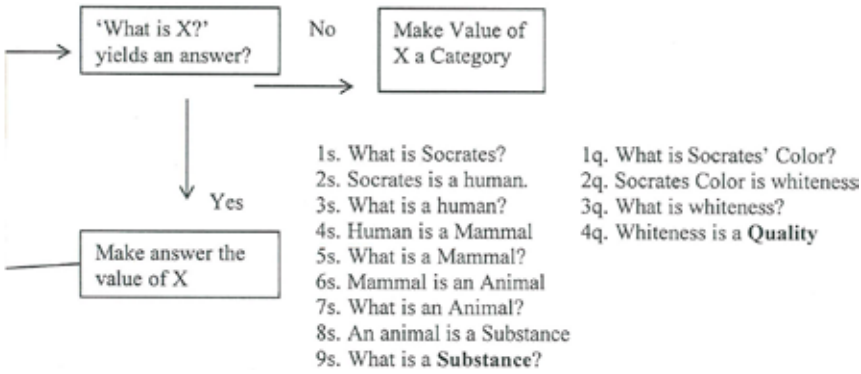

Figure 1.1 Categorical Flowchart Based upon Ackrill's Account.

Table 1.1

1s. What is Socrates?	1q. What is Socrates' Color?
2s. Socrates is a human.	2q. Socrates' Color is whiteness
3s. What is a human?	3q. What is whiteness?
4s. Human is a Mammal	4q. Whiteness is a **Quality**
5s. What is a Mammal?	
6s. Mammal is an Animal	
7s. What is an Animal?	
8s. An animal is a Substance	
9s.What is a **Substance**?	

Not only is Aristotle's approach expressible is systematic terms, given Ackrill's interpretation, it finds a fair amount of support within the text (Pickard-Cambridge 1941, *Topics* I.9):

> For when man is set before him and he says that what is set there is "a man" or "an animal," he states its essence and signifies a substance; but when a white color is set before him and he says that what is set there is "white" or

> is "a color," he states its essence and signifies a quality. Likewise, also, if a magnitude of a cubit be set before him and he says that what is set there is a magnitude of a cubit, he will be describing its essence and signifying a quantity. Likewise, also, in the other cases: for each of these kinds of predicate, if either it be asserted of itself, or its genus be asserted of it, signifies an essence: if, on the other hand, one kind of predicate is asserted of another kind, it does not signify an essence, but a quantity or a quality or one of the other kinds of predicate.

One might complain that Aristotle's categorial scheme appears to be linguistically provincial. We seem to ask the questions that we ask in virtue of the conceptual scheme we have. We don't know that we are asking the right questions unless we know that we have the right conceptual scheme. And we needn't be impressed with the categories our questions generate unless we know that we are asking the right questions (See Studtmann 2012, 2014). So how do we know that we have the right conceptual scheme?[15]

Kant, of course, recommended an a priori, transcendental deduction of his categories. As Paul Studtmann has recently emphasized (2014), Aquinas reads the categories as products of an a priori deduction. The a priori deduction may not be directly transcendental, however, as it issues from Aristotle's commitment to hylomorphism (Aquinas (tr. Rowan 1961, 321–322)):

> A predicate is referred to a subject in a second way when the predicate is taken as being in the subject, and this predicate is in the subject either essentially and absolutely and as something flowing from its matter, and then it is quantity; or as something flowing from its form, and then it is quality; or it is not present in the subject absolutely but with reference to something else, and then it is relation. A predicate is referred to a subject in a third way when the predicate is taken from something extrinsic to the subject; and if this is not the measure of the subject, it is predicated after the manner of attire, as when it is said that Socrates is shod or clothed. But if a measure of the subject, then, since an extrinsic measure is either time or place, the predicament is taken either in reference to time, and so it will be when; or if it is taken in reference to place … it will position ….

Here too we find the categories generated, indeed deduced, by their reference to a substance. Aquinas divides predications into those that are in the subject absolutely and those that are in a subject relatively. The latter relate to the categories that are relative—time, place, position, acting upon, being acted upon, having, and, of course, relation itself. The former are cashed out as material predications or formal predications. And the idea seems to be that the material can be counted and is, as such, quantitative, in contrast with form, which, as such, is qualitative. Predications are ultimately in subjects, which, Aristotle takes to be substances.

Finally, one might find favorable the method outlined by Bonitz (1853), and defended by Moravcsik (1967, 143–44):

> Any sensible particular, substance, event, sound, etc. must be related to some substance; it must have some quality and quantity; it must have relational properties, it must be related to times and places; and it is placed within a network of causal chains and laws, thus being related to the categories of affecting and being affected ….

On this view, what is given in sense-experience, substance or not, must relate to the categories. Any substantial or non-substantial particular, an event, say, must relate to some substance, have some quality and quantity, bear relations, and so on. One might take substantial particulars to play no more of a role than any other particular. But even here, so long as one accepts the very plausible premise, *every sense-experience depends upon a substance*, substance will play a central role.

While one might follow Kant in thinking the categories randomly hit upon, it is reasonably charitable to read Aristotle as countenancing dependency relations, such that at the ground floor we find substance. Consider again the list of A-Sentences that Shields asks one to account for:

(1a) Socrates is.
(2a) Socrates' being in the agora is.
(3a) Socrates' weighing fourteen stone is.
(4a) The Unmoved Mover is.

The way of being involved in (2a), for example, that of being in the agora, is dependent upon something being, here Socrates, in the agora. And clearly Socrates' being (or something akin) is not dependent upon being in the agora. Thus, *being in the agora* is dependent upon the state of affairs *being a substance* but *being a substance* is not dependent upon *being in the agora*. Notice how just now you felt some sympathy (at least) with countenancing a kind of asymmetry in terms of ontological dependency without, at the same time, attempting to provide accounts of the *relata*. Just what the dependency relations between substances and non-substances are is, admittedly, controversial. That there are dependencies to countenance is less so. Perhaps Aristotle belabors his views about dependency with the recognition of the risk that they bear an oversize load. But the contours of a philosophical outlook are nevertheless present.

I.6.4: From Dependency to Pros Hen

Now it may be enough to begin inquiry, with the ultimate aim of providing accounts, by placing *relata* into a network that models the *pros hen* relation. That one knows *that* there are dependencies, even if one has merely a nominal understanding vis-à-vis the natures of the *relations*, may allow a *pros hen*

study of *being qua being*. And if this is so, we have sufficient reason to think that Claim-I_{ea} is false. If we know that there are substances, upon which other ways of being depend, we have reason to think that the latter can be included in a science concerning the former. Aristotle certainly recognizes a distinction between knowing that a thing is and having an account of that thing (Barnes 2002, *Posterior Analytics* II.1, 89b23–35):

> The things we seek are equal in number to those we understand. We seek four things: the fact (τὸ ὅτι), the reason why, if it is, and what it is. For when we seek whether it is this or this, putting it into number (e.g., whether the sun is eclipsed or not), we seek the fact (τὸ ὅτι). Evidence for this: on finding that it is eclipsed we stop; and if from the start we know that it is eclipsed, we do not seek whether it is. When we know the fact (τὸ ὅτι) we seek the reason why (e.g., knowing that it is eclipsed and that the earth moves, we seek the reason why it moves). Now while we seek these things in this way, we seek some things in another fashion—e.g. if a centaur or a god is or is not (I mean if one is or not simpliciter and not if one is white or not). And knowing that it is, we seek what it is (e.g. so what is a god? Or what is a man?)

It seems that Aristotle is optimistic that the science of being may begin with the countenance of dependency relations, and there is nothing, in principle, preventing the practitioner, in the sweet by and by, from developing accounts (Ross 1908, 1045b27–32):

> We have treated of that which is primarily and to which all the other categories of being are referred—i.e., of substance. For it is in virtue of the formula of substance that the others are said to be—quantity and quality and the like; for all *will be found to contain* the formula of substance (πάντα γὰρ ἕξει τὸν τῆς οὐσίας λόγον), as we said in the first part of our work.

Even so, requiring that accounts of being *will be found* is something one might reasonably be skeptical about. Now when one reads chapter 2 of *Book Gamma*, one does not find Aristotle obsessing, in his illustration of the *pros hen* method, over providing accounts of *health* and *medical*. Indeed, accounts thereof by Aristotle are not provided, though they are supplied on his behalf by commentators. He nevertheless does not leave the connections between health, for example, and that which relates thereto unintelligible (Ross 1908, 1003a35–36):

> Everything which is healthy is related to health, one thing in the sense that produces it, another in the sense that it is a symptom of health, another because it is capable of it.

Commentators have sought, not unreasonably, to reconstruct the *pros hen* method by considering his examples here in chapter 2 of *Book Gamma*. With respect to medicine, we are told (Ross 1908, 1003b1–4):

> And that which is medical is relative to the medical art, one thing in the sense that it possesses it, another in the sense that it is naturally adapted to it, another in the sense that it is a function of the medical art.

Here too Aristotle does not provide an account of the medical art. And clearly one could understand that the magnetic resonance imaging device, which one had been placed within, relates to the medical art without being able to provide an account thereof.[16] One might have the impression that Aristotle is less concerned with providing accounts than providing an understanding of the network of relations involved in a *pros hen* relationship. But can understanding the network in question provide reason sufficient for satisfaction of non-univocity?

On Ackrill's interpretation (1997) it is not the subjects of predications that we are to be concerned with, but the grounds upon which predications are made, as they are categorically diverse (207–8). Ackrill's primary concern is with the homonymy of "good" as it is applied to good, and he asks us to consider the following schemata:

… is good in virtue of (in that it is) … being a god.
… is good in virtue of (in that it is) … being virtuous.
… is good in virtue of (in that it is) … being useful.[17]

On Ackrill's view, it is the grounds for predicating "good" that fall into different categories, and this is enough to indicate that "good" does not stand for a single common property. The account goes *mutatis mutandis* for being (1997, 208):

> This expansion of Aristotle's argument brings it into line with the way he typically shows a predicate not to be univocal. Thus, in *Metaphysics* Γ.2, he explains the multiple role of ὄν by comparison with "healthy" and "medical." One thing is healthy because it is productive of health (τῷ ποιεῖν), another thing because it is receptive of it (ὅτι δεκτικὸν). Similarly, some items are ὄντα because—or in that—they are substances (ὅτι οὐσίαι), others in that they are attributes (ὅτι πάθη οὐσίας). Aristotle takes it that the phrases introduced by τῷ or ὅτι (or sometimes ὥς) gives the sense of the predicate in the relevant example; they tell what it amounts to in each case to apply the predicate.

Broadly construed, if the criteria of predicating F of *a* falls under category C_1, and the criteria of predicating F of *b* falls under C_2, where $C_1 \neq C_2$, then

F, when predicated severally of *a* and *b*, is thus predicated non-univocally. Roughly speaking, we say that the tee-time is good, in virtue of the category of time, and that the god is good, in virtue of the category of substance, and that, therefore, good is not used univocally. Now Shields distinguishes two varieties of criteria, the evidential and the constitutive, where the former relates to the evidential grounds one has for a predication, and the latter relates to what it is for something to be an F (1999, 202). And his counterexample to the evidential notion of criteria runs as follows (202):

> Perhaps some café dwellers in Vienna will surmise that S is an American on the basis of their observation of her. One offers as a criterion that S smells of soap, another that S dresses well, and yet another that S walks with an odd overconfidence. They do not regard "American" as non-univocal. On the contrary, their accounts of what it is to be an American differ, even significantly. This is unproblematic. There may be distinct criteria for applying one and the same predicate. Hence, understood as an evidentiary notion, distinctness of criterion is not sufficient for non-univocity.

Despite the considerations of our café dwellers, "American" might be said in many ways—there are North Americans and there are South Americans, and there are further divisions therein. There are Canadian Americans and there are Mexican Americans. But an examination of the categories, to which the criteria for citizenship appeal, is not necessary, as our dwellers really seem preoccupied with a predication that is unscientific. If they are political scientists, they aren't very good ones. Their predications stem from something like stereotype or prejudice. Clearly Ackrill's proposal is not intended to extend to cases involving deviant causal chains or epistemic irresponsibility. With a real property and a real case of evidential responsibility in play, the evidential criterion might hold up a little better.

With that said, one might think the evidential criterion seems, for Aristotle, overly epistemic. When he says that "… is said in many ways" Aristotle probably means something like "… is truly said in many ways." And Aristotle appears keen to ground truth in being (Ross 1908, 1051b5–9):

> [W]hen is what is called truth or falsity present and when is it not? We must consider what we mean by these terms. It is not because we think that you are white that you are white, but because you are white we who say this have the truth.

In Chapter 3, we will consider Aristotle's conception of truth, as expressed in chapter 7 of *Book Gamma* (1011b25):

> To say of what is not that it is, or of what is that it is not, is false, and of what is that it is, and of what is not that it is not, is true.

And therein I will provide reasons for thinking that Aristotle's conception of truth countenances truth-makers—roughly, truth-makers as things that exist which make the bearers of truth true.

Suppose we take Ackrill's schema to express a primitive relation between predications and the existences that make them true. That the relation is primitive does not require that the grounds are without meaning, and therefore poor candidates for univocity or non-univocity. The *in virtue of* relation here can be understood, provided one can specify the true claims by specifying the existences which make them true.[18] Now if we may truly speak of *being* in many ways, it would seem that there are *ways of being* that make our thus speaking true. But this conclusion loses warrant if there are substantive objections to the constitutive approach.[19]

Shield's real objection to the constitutive criterion begins with the idea that the criterion is best understood as entailing (203): "(i) the criteria in accordance with which F is predicated of *a* and *b* diverge, and (ii) the criteria themselves belong to distinct categories." And his counterexample runs as follows (204):

> It may be dangerous to cross the street without first looking both ways, and it may be dangerous to expose oneself to ambient carcinogens, and it may also be dangerous to be in the wrong place at the wrong time. But *being* is not therefore non-univocal.

How should we understand the *in virtue of* relations in the above example? If we follow the schema set out by Ackrill, using Shield's examples here, while replacing "good" with "dangerous," we have:

(1) ……dangerous in virtue of (in that it is)……
(2) ……dangerous in virtue of (in that it is)……
(3) ……dangerous in virtue of (in that it is)……

What should we supply in the blanks to complete sentences (1) to (3)? Shield's examples will need to fit within this schema. Does crossing the street, for example, go in the first blank, the second, or both?

(1a) Crossing the street without looking is dangerous in virtue of (in that it is)……
(2a) ……is dangerous in virtue of (in that it is) crossing the street without looking.
(3a) Crossing the street without looking is dangerous in virtue of (in that it is) crossing the street with looking.

(3a) is clearly not an option. We might makes sense of (2a) if we really stretch and supply something like "Wearing a blindfold while crossing the street." So (1a) is, clearly, the way to go. But how do we fill in the second blank?

(1b) Crossing the street without looking is dangerous in virtue of (in that it is)……
(2b) Exposing oneself to ambient carcinogens is dangerous in virtue of (in that it is)……
(3b) Being in the wrong place at the wrong time is dangerous in virtue of (in that it is)……

We fill in the blanks, I would submit, with the following:

(1c) Crossing the street without looking is dangerous in virtue of (in that it is) the risk to one's welfare.
(2c) Exposing oneself to ambient carcinogens is dangerous in virtue of (in that it is) the risk to one's welfare.
(3c) Being in the wrong place at the wrong time is dangerous in virtue of (in that it is) the risk to one's welfare.

Now the idea of welfare might involve some reference to the predicate *good*. And the predications involving *good* might be non-univocal. However, insofar as the grounds in 1–3 are filled in in the same way, there is no reason to think appeal to different categories is made. And if no appeal to different categories is made, Shields is right that *dangerous* is not said in many ways, but he is wrong that this is a problem for the schema recommended by Ackrill. It's fair to say that the schema helps explain why the predications are univocal.

I.7: SUBSTANTIAL AND CATEGORIAL WAYS OF BEING

If we are going to countenance ways of being, we should at least have a principled way of discerning how many ways of being there are. It seems that we do. As we have seen, there are principled ways of generating the categories. Of course, there are at least two ways of being within the category of substance, and this may be a point of concern. And the objects that are mathematical in nature present a sticky point as well. The concern is not that there aren't principled reasons for countenancing the ways of being that relate to unchanged-separate entities, changing-separate entities, and unchanging-unseparate entities. In fact, there are. The concern is rather that Aristotle seems to suggest that the number of ways of being is comparable to the number of categories (tr. Kirwan 1993, 1017a22–30):

> All things which signify the figures of predication (τὰ σχήματα τῆς κατηγορίας) are said to be in their own right; for "to be" signifies in the same number of ways as they are said. Since, therefore, among things predicated some signify what a thing is, some a qualification, some a quantity, some a relative, some doing or being affected, somewhere, some when, "to be" signifies the same thing as each of these.

If we read the above as saying that there is a one-to-one correspondence between the ways of being and the categorial divisions, we seem to have a slight surplus in terms of the ways of being.[20] Is there something that moves Aristotle to recognize different ways of being in addition to those listed by the categories? Indeed, Aristotle, as we have seen divides the theoretical sciences by their objects of study. The science of mathematical, the study of natural substances, and theology, concern unchanging-unseparates, changing-separates, and unchanging-separates, respectively. We have argued that Aristotle countenances these differences. And, furthermore, so countenancing these ways of being has some philosophical merit. Part of the reason that one might be inclined to take there to be different ways of being includes appeal to the notable differences between natural and non-natural substances. Consider the case with abstract and physical objects for illustration. Some philosophers are inclined to take abstract entities and physical entities to have different ways of being *because* the square root of thirty-six, for instance, enjoys a radically different kind of existence than the largest book on my desk, or the fastest skier on the team. A philosopher thus inclined might defend her position by saying something like the following:

> The book on my desk undergoes change, has spatial and temporal properties, and so on, while the square root of 36 does not admit of change and lacks spatial and temporal properties. They are fundamentally different diachronically. They have fundamentally different identity conditions. These two varieties of being are different from that which I associate with Monica, for example, or Helena. I could try to stretch one concept of existence, that associated with the unrestricted quantifier over the ways of being, but that would be a tight fit. And I like to tailor my concepts precisely. It's not just that the book and the square root of 36 are different kinds of things, though that is true. It is that the book, Helly, and the square root of 36 are, in relation to identity conditions, worlds apart. I might need a general quantifier at times, but I understand it as posterior to the restricted quantifiers.

So too, Aristotle, if he is like-minded, can see an unchanged-separate, such as the Unmoved Mover, and a changed-separate, such as my Joshua Tree, as bearing radically different kinds of relations to time, change, and identity. When we consider colors and sounds, the discrete and the continuous, the thin and

the corpulent, within their respective categories, a similar judgment is not readily available. We strain to say that color bears a fundamentally different relation to time and change in contrast to sound.

The study of principles upon which every science relies, including principles of reasoning, falls to philosophy, insofar as the philosopher is disposed to contemplate every type of being (1005b5–7). And in the next chapter we will survey Aristotle's science of *being qua being* taking up the principle that it is impossible to have contradictory predications of the same subject. One might wonder why a science of *being qua being* would begin by discussing what we nowadays take to be a logical principle. One thought is that it is a condition upon the existence of anything that it not admit of contradictory predications in the same respects. And the categories of being serve as important respects that need to be distinguished. One can ask what this might have to do with the Unmoved Mover, given the role the Unmoved Mover plays on the Frede-Patzig approach that we've been considering. But the Unmoved Mover is a paradigm of consistency. While natural substances are at a time F and at another time not F, though never at the same time F and not F, the Unmoved Mover is eternally F, for any F, and never not F. And while the mathematicals are not separate, they too are never F and not F. There is a tendency within Aristotle's tradition to associate the changeless, the consistent, with a high level of reality. And there is a tendency for Aristotle to associate independence with a high-level of reality. And, so, one might conjecture that the consistency and separate nature of the Being associated with the Unmoved Mover is paradigmatic, with the natures of physical substances and mathematical entities being understood by, though not reducible to, the paradigm. The very last line of *Book Gamma* reads as follows (Ross 1908, 1012b29–31):

> But again it is not the case that all things are at rest or in motion *sometimes*, and nothing *for ever*; for there is something which always moves the things that are in motion, and the first mover must be itself unmoved.

Having adumbrated the science of being qua being, in *Book Gamma*, Aristotle turns to an application of it with a defense of consistency.

NOTES

1. In terms of translation: For *Metaphysics*, I tend to rely upon W.D. Ross' translation as well as his (1924) text in Greek. I draw from various other translators, as you will see, for works other than *Metaphysics*. In cases where translations vary significantly, I tend to supply the Greek parenthetically in order to indicate how the translation is arrived at. In those cases where a translator's name is not cited, I am

responsible for the translation. However, I usually consult the translations of others when developing my own. In particular, the translations from the Clarendon Aristotle Series, eds. J. Ackrill and L. Judson, are never very far from my desk.

2. Barnes lists *Topics* 121a18 and b6, *Metaphysics* 998b22-7, 1040b6-24, 1045b1-7.

3. See *Topics* 121a16 as well.

4. It would seem that the motives of the critic would go *mutatis mutandis* for meta-metaphysics.

5. Barnes' translation of Patzig's article corresponds to Patzig (1961), 185–186.

6. In the literature, what I'm calling the *pros hen* method is usually described as a method relying upon Core-Dependent Homonymy (Shields 1999, Ward 2008). Accordingly, when Aristotle says, in the passage I here quote, that the many ways of being are not homonymous, we are to supply something like "merely" and understand Aristotle as saying: "There are many senses in which a thing may be said to 'be,' but they are related to one central point (ἀλλὰ πρὸς ἓν), one definite thing, and are not *merely homonymous*." See Irwin (1981), and Shields (1999) has argued that related equivocals are considered to be a variety of homonyms. Jurgis Brakis has recently argued that ultimately related equivocals are not homonyms (2011).

7. van Inwagen here makes use of Frege's statement in *The Foundations of Arithmetic*, 2nd edition. (New York: Harper & Row, 1960, p.65), saying "[T]hese words express my thought exactly. But there is a difference between what Frege meant by them and what I would mean by them. The difference lies in what Frege's deservedly controversial idea that existence is what some have called a 'second-level' predicate …" (2014, 61).

8. The problem here seems to be that (1), as I have it below, will simply be false on a *de re* reading. For example, in the actual world, Smith is sick and Jones is a novice skier. Both are, in the actual world, green in a non-synonymous way. In a world $w1$, accessible from the actual, however, Jones is sick (or Smith is a novice skier).

F (1) $\forall x \forall y \{[(x \neq y) \ \& \ \neg Sxy] \Rightarrow \neg \Diamond \ Cxy\}$

9. One might say, for example, that "flat" has a strict sense when applied to the table in the lab and a loose sense when applied to a stomach. Of course, here we have degrees of flatness. "One and the same" in the strict sense may not apply to the acorn and the oak, while in the loose sense it may well. And we *needn't* take there to be degrees of "one and the same."

10. We may of course order things in terms of degree, but we needn't. Borrowing an example from Kit Fine (1994), we might take the fact that Socrates exists and the fact that Socrates is a member of the singleton of Socrates to be necessarily mutually entailing. Intuitively we take Socrates existence to be prior to the fact that Socrates is a member of singleton of Socrates. But we don't take the relata here to admit of degrees.

11. As Morrison puts it:

> In the *Categories* there is conclusive evidence for degrees of being. … In the *Metaphysics* it is not so uniformly firm. … But in most of the [important cases] interpreting the passage as involving degrees of being is significantly easier … than not doing so.

12. Ward (2008, 127) seems to think that Shields cannot get to comparability from the beings associated with the categories because: "Since substances and relatives belong to different categories, there is no specific similarity for things belonging to

distinct categories to be compared." She seems to read Aristotle as maintaining that comparability comes about with items that have specific similarity. Shield's argument, as I read it, stipulates that there be specific similarity of attribute with the locution *as Fs*. As for the thing in which the attribute is found, it would seem that I can rightly claim that the vase is whiter than the dog. But there is no specific similarity, other than whiteness, to wit, the F, which they have in common.

13. Jonathon Schaeffer seems to share Kant's view (2009, 352): "He simply assumes that all such types of entities exist without need for further discussion."

14. Precisely how Kant deduces his own set of categories is not exactly clear. Jonathon Bennett (1966, 100) refers to the 'jungle of the Transcendental Deduction of the Categories' and P.F. Strawson says (1995, 85): "In between the Metaphysical Deduction of the categories from the forms of judgment and this interpretation and demonstration of particular categories lies the whole mystery of the Transcendental Deduction."

15. Philosophically, one might be suspicious of the very idea of alternate conceptual schemes (Davidson, 1984, 184): "Different points of view make sense, but only if there is a common co-ordinate system on which to plot them; yet the existence of a common system belies the claim of dramatic incomparability."

16. But perhaps the linguistic labor is shouldered by those in the linguistic community who can provide such an account (Putnam 1975).

17. Ackrill's own formulation of schema is:

> … is good because (in that it is) a god.
> … x is good because (in that it is) virtuous.
> … is good because (in that it is) useful.

18. Adapting here an idea that belongs to Gonzalo Rodrigues-Pereyra (2005, 18–23) and (2002, 35–40).

19. While I defer discussion of truth-making to Chapter 3, this should not be considered a problem here, dialectically, as Shield's seems very open to the idea that Aristotle countenances truth-makers (1999, 125).

20. Of course, Aristotle's enumeration of the categories varies from time to time. In the *Topics* (103b22) he lists the usual ten, though *ti esti* (what it is) replaces *ousia* (substance). However, in *Posterior Analytics* he lists only: substance, quality, quantity, relative, action, passion, time, and place (83b15). In *Metaphysics* V.7 he reiterates the list from *Posterior Analytics*. Whether the categorial ways of being could be modeled best with restricted quantifiers or not is an interesting question. I'm inclined to think that outside of the objects of study associated with the theoretical sciences, the ways of being, those associated with the categories, are primitively tied to the *in virtue of* relation, but understood insofar as there is a function from the substances there are to the true categorial expressions. Insofar as substances are among the subvenient, they are not candidates for similar treatment, and insofar as the function is mathematical in nature, neither are the mathematicals. Something like this respects Aristotle's repeated claim that were there no substances, there would be no other categories of being.

Chapter 2

Contradictions

Metaphysics presupposes that axioms can be established by the method pursued therein. Whether this involves some revision of Aristotle's views concerning science in the *Organon* is another matter. Nevertheless, it is also the case that Aristotle seeks in *Metaphysics* to discover things *about* axioms. This much is clear with the argument we begin with in this chapter, the argument that ascribes indubitability to the PNC.

II.1: THE INDUBITABILITY ARGUMENT

As we saw in the previous chapter, the study of principles upon which every science relies, including principles of reasoning, falls to philosophy, insofar as the philosopher is disposed to contemplate every type of being (1005b5–7). Aristotle describes the nature of these principles, and the role the philosopher plays in relation to them, as follows (Ross 1908, 1005b6–18):

> Evidently then it belongs to the philosopher, i.e., to the person who is studying the nature of all substance, to inquire also into the principles of syllogism. But the one who knows best about each genus must be able to state the most certain principles of the subject, so that the person whose subject is existing things qua existing must be able to state the most certain principles of all things. This is the philosopher, and the most certain principle of all is that regarding which it is impossible to be mistaken; for such a principle must be both the best known (for all … may be mistaken about things which they do not know), and non-hypothetical. For a principle which everyone must have who understands anything that is, is not a hypothesis; and that which everyone must know who knows anything, one must already have when one comes to a special study.

Aristotle argues that if error about a principle is impossible, then the principle is not hypothetical and necessarily intelligible. If it satisfies these conditions it is a principle of that kind that is firmest of all. He proceeds to single out a principle that he believes is unassailable in the way required by his first premise, maintaining that the PNC fits his criteria (presumably better than any competitor) and is therefore the firmest, so to speak, of the firmest (Ross 1993, 1005b18–24):

> Evidently then such a principle is the most certain of all; which principle this is, let us proceed to say. It is, that the same attribute cannot at the same time belong and not belong to the same subject and in the same respect; we must presuppose, to guard against dialectical objections, any further qualifications which might be added. This, then, is the most certain of all principles, since it answers to the definition given above.

And here we have Aristotle's statement of a principle than which no other is more certain. It is, moreover, considered non-hypothetical, necessarily intelligible, and something one may not be mistaken about, as it is thought to satisfy the definition that Aristotle provided. And, as it turns out, some, who are philosophers no less, mistaken or otherwise, seem to have denied the PNC (Ross 1908, 1005b24–34):

> For it is impossible for anyone to believe the same thing to be and not to be, as some think Heraclitus says. For what one says, one does not necessarily believe; and if it is impossible that contrary attributes should belong at the same time to the same subject (the usual qualifications must be presupposed in this premise too), and if an opinion which contradicts another is contrary to it, obviously it is impossible for the same person at the same time to believe the same thing to be and not to be; for if one were mistaken on this point one would have contrary opinions at the same time. It is for this reason that all who are carrying out a demonstration reduce it to this as an ultimate belief; for this is naturally the starting-point even for all the other axioms.

In this last statement, Aristotle pens a little argument wherein he concludes that it is impossible to believe contradictory properties hold of the same thing, in the same respect, at the same time, and so on, as needed, to answer the dialectical difficulties. He seems to take those who deny the PNC to be insincere. And their insincerity is established on this basis. Simply put, for S to *believe* contradictory things to hold of the same subject, at the same time, is for contradictory properties to hold of S. Insofar as the latter is impossible, so too the former.[1] Plainly, the argument could use some unpacking. Let's have a closer look.

II.1.1: Contradictory or Contrary Beliefs?

One might dismiss the argument as hopeless as it presupposes the truth of the PNC. But this is not obviously a reason to attribute to Aristotle a *petitio principii* fallacy. He has been read, not as giving a proof that establishes the PNC, but rather as giving a proof that establishes something *about* the PNC.[2] He is free, therefore, to make use of it. Actually, on the face of it, Aristotle appears to assume not the PNC but something else: The Principle of Non-Contrariety, that is, contraries may not hold of the same subject at the same time. But what does Aristotle mean when he says that "the opinion contrary to an opinion is that of a contradictory?" Contraries and contradictories are distinguished as follows. Contraries admit of intermediates: Black and White and Hot and Cold admit, respectively, of grey and warm. Contradictories, for example, Black and Not-Black and Hot and Not-Hot exclude middle ground. One or the other of a contradictory pair is thought to apply to everything, where some things possess neither contrary, for example, those things that are grey or warm. Everything is either black or not, but not everything is black or white. When it comes to opinion, or belief, there is, it seems, middle ground:

(i) Belief that P is true.
(ii) Failing to consider P.
(iii) Suspension of belief concerning P.
(iv) Belief that P is false.

It would seem that (i) and (iv) are contraries. They admit of middle ground, are extremes on a continuum, it is not the case that one or the other belongs to everything, and so on. But we are moreover told (ἐναντία δ᾽ ἐστὶ δόξα δόξῃ ἡ τῆς ἀντιφάσεως): "the opinion contrary to an opinion is that of the contradictory." Thus, the opinion contrary to the opinion, so understood, involves less than the complement of type-(i) cases. However, normally one would think the contradictory of type-(i) cases includes not just cases of type-(iv), but, also, cases of type-(iii) and type-(ii). To use Aristotle's technical vocabulary from *De Interpretatione*, contraries are those assertions which cannot both be true, but which may both be false (17b6). And while it certainly seems that the assertions, *Helly believes we are going skiing* and *Helly believes we are not going skiing*, involve some impropriety on her part, there is no impropriety when Helly neither believes nor disbelieves, believing instead that *We might go skiing and, then again, we might not*. So, it looks like the opinion contrary to an opinion, given the normal criteria for the relationships in question, is really a contrary.[3]

Aristotle seems therefore to use the term "contrary" in relation to belief idiosyncratically. Both Alexander (270, 25) and Aquinas (602) think that *De*

Interpretatione defends this use. Therein, Aristotle maintains (on Ackrill's translation (1963), 23b21–25) that:

> [I]t is he who holds the contrary belief who is most deceived with regard to anything, since the contraries are among things which differ most with regard to the same thing. If therefore one of these is contrary and the belief of the contradiction is more contrary, clearly this must be the contrary.

C.W.A. Whitaker argues persuasively that Aristotle is concerned herein with the practice of dialectic, where presumably cases of type-(ii) and type-(iii) are not relevant, as only an interlocutor who has formed a belief will be suitable for cross-examination (2008, 176). Alternatively, as Aristotle is clearly concerned about epistemic error in chapter 14 of *De Interpretatione*, he may be thinking along the following lines. Cases of the type-(ii) and type-(iii) variety are considerably safer, when it comes to error, than those of type-(i) and type-(iv). Furthermore, one might think that while types (ii) and (iii) are intermediate epistemic states, they are not doxastic in the same way as types (i) and (iv), as neither involves the relation of belief to hold between the subject and object. Hence, Aristotle might be thinking that the distinction between contraries and contradictories wears a little thin when it comes to our beliefs. A little later, in chapter 6 of *Book Gamma* he says: (Ross 1908, 1011b13–22):

> Let this, then, suffice to show (1) that the most indisputable of all beliefs is that contradictory statements are not at the same time true, and (2) what consequences follow from the assertion that they are, and (3) why people do assert this. Now since it is impossible that contradictories should be at the same time true of the same thing, obviously contraries also cannot belong at the same time to the same thing. For of contraries, one is a privation no less than it is a contrary—and a privation of the essential nature; and privation is the denial of a predicate to a determinate genus. If, then, it is impossible to affirm and deny truly at the same time, it is also impossible that contraries should belong to a subject at the same time, unless both belong to it in particular relations, or one in a particular relation and one without qualification.

Thus, where the text in the Indubitability Argument favors a reading whereby contradictions are unbelievable *because contraries* cannot hold of the same thing, here we read Aristotle maintaining that contraries cannot be truly asserted of the same thing *because contradictories* cannot hold of the same thing. Presumably the idea is that for the same thing to have contrary predications would violate the prior PNC, as a subject would be, for example hot and cold (so as to be *per impossible* not hot), though there is nothing requiring a subject to have one contrary or the other (as it may be tepid).

We began with a pithy gloss of the argument: For S to *believe* contradictory things to hold of the same subject, at the same time, and so on, is for contradictory properties to hold of S. Insofar as the latter is impossible, so too the former. We can begin our attempt to better understand Aristotle's reasoning by dividing premises from their conclusions. Aristotle seems to accept an idea that I will call the Supervenience Thesis:

(ST) For S to believe x is F is for S to have a standard property in the form *believes x is F*, which is attributed to S.

On the basis of (ST) he is led to accept a conditional as premise (1):

(1) $\Diamond$ (∃s such that s sincerely denies the PNC) ⇒ $\Diamond$ (∃s has contradictory standard properties in the form of *Believes Fx and Believes ~Fx*)[4]

The PNC is thought to support a second premise, that is, (2), which, with an application of *modus tollens* yields (3):

∴ (3) ~$\Diamond$ (∃s such that s believes Fx &~ Fx)

Precisely how does Aristotle bridge the gap from (1) to (3)? That the second premise admits of some ambiguity has not eluded the notice of several commentators.[5] Which of the following, (2a) or (2b), best describes Aristotle's premise (2)?

(2a) ~ $\Diamond$ ∃s∃x (Bs: Fx & Bs: ~Fx)
(2b) ~ $\Diamond$ ∃s∃x (Bs: Fx & ~Fx)

I say that Aristotle needs (2b) and that (2b) is not directly available to Aristotle. In order to have a proof that the PNC is undeniable, or, short of that, that believing a counter-instance to it is impossible, one needs (2b). A contradiction is a conjunction such as (Fx & ~Fx) so that believing a contradiction means the scope of *the* belief is (Fx & ~Fx). When it comes to (2a) we do not have (Fx & ~Fx) as *the* scope of the belief. We have, rather, two scopes, if you will, that are conjoined:

(Bs: Fx	&	Bs: ~Fx)
Scope One		Scope Two

Another way to put it: (2a) involves two propositional attitudes conjoined and (2b) involves one propositional attitude with two propositions conjoined.

So, we either need the second premise to be (2b) or we need a closure principle to get from (2a) to (2b). Call that closure principle premise (2.5):

(2.5) (Bs: Fx & Bs: Gx) ⇒ (Bs: Fx & Gx)

I believe, moreover, that (2b) is not directly available to Aristotle. The beliefs in question have to be, as Aristotle states, at 1011b13–24, contradictories. Moreover, both Alexander (270, 25) and Aquinas (602) think that *De Interpretatione* defends the idea that the contrary to a belief is a contradictory (23b21–25). If the beliefs in question are contradictories, they are two in number. But (2b) involves one belief, that is, one propositional attitude in relation to a single conjunctive proposition. So (2b) involves one belief, the contradictories in question are two, and two does not equal one. Can we make use of (2a), along with the closure principle (2.5) to get to (2b)? Paradoxes of the Preface variety suggest otherwise.[6] A young author finds that he cannot *actually* doubt any single belief concerning the five central claims in his book. But when they are expressed as a five-part conjunction, he is *actually* too reluctant, perhaps out of a sense of humility, or insecurity, to believe that the conjunction of those five claims is true.[7]

Now one might think that the situation is somewhat different when it comes to contradictory beliefs. One might think that it is impossible either (i), to believe Fx and to believe ~Fx (where there are two beliefs, each with its own scope), or (ii), when it comes to contradictory beliefs, the closure principle is valid. But I think that certain counterexamples indicate otherwise. A father is in fairly desperate circumstances, say, and is fairly convinced that he will drink today, because he has a problem with drinking and he drinks nearly every day. At the same time, he cannot see himself drinking today, as it is Parent-Teacher night at his daughter's school, and he loves his daughter—counterexample to (i). Conditions are sufficient for believing he will drink, and conditions are sufficient for believing he will not drink. He finds it peculiar, phenomenologically, that he believes that he will drink today and that also he believes that will not drink today—life can be epistemically hostile (Garfield 2004)—but he is not thereby motivated to believe that he both will and will not drink today—counterexample to (ii). No doubt you might be really surprised to learn that the Alcoholic Father believes he will drink today and he believes that he will not drink today. No more surprising, I submit, than the surprise you would experience in learning you had won the lottery. And winning the lottery is not impossible. So, we should not think having two *actual* beliefs, one to the effect that Fx, the other to the effect that ~Fx, is impossible.

Furthermore, and crucially, Aristotle's Argument works only if the properties involved in the Supervenience Thesis are standard. For Aristotle is going

to argue that claims about belief are analogous to claims about what is the case. He is going to reason further that, *ontologically*, it is impossible that some x be F and not-F. And he will thereby conclude, *epistemically*, that it is impossible for someone to believe F and not-F. The assumption that standard properties adhere to laws such as the PNC, or the laws of Identity, is fair enough in the present context. For Aristotle is not here arguing for the PNC directly. He is arguing for a claim he takes to hold of it (Code 1986). That claim is, moreover, that nobody can doubt it. But there is reason to think that properties related to belief are not standard. That which falls under the epistemic and that which falls under the ontological do not compose a homogenous class. Evidence to the effect that properties of the form *believes x is F* are different in kind to standard properties such as *x is F* can be gleaned by considering the distinction grammarians maintain between direct and indirect discourse. Consider the unproblematic argument expressed entirely in direct discourse:

T (5) Cicero denounced Catiline.
T (6) Cicero = Tully
T (7) Tully denounced Catiline.

There is no problem in the substitution of the co-referring expressions *Tully* and *Cicero*. And, of course, this contrasts with the following argument involving indirect discourse:

T (5a) Phillip believes Cicero denounced Catiline.
(Philip has the property *believes Cicero denounced Catiline*)[8]
T (6a) Tully = Cicero
F (7a) Phillip believes Tully denounced Catiline.
(Philip has the property *believes Cicero denounced Catiline*)

What is the lesson to glean? One cannot seamlessly toggle in a truth-preserving manner to and fro between claims involving what is believed and what is the case. But a move from what is believed to what is the case is precisely what one finds in the Supervenience Thesis.

(ST) For S to believe x is F is for S to have a standard property in the form *believes x is F*, which is attributed to S.

We can also consider matters conversely. Suppose the properties in question are standard. Then it would be impossible for the following two claims (8) and (9) to be true:

(8) Oedipus actually believes he killed that man at the crossroads.
(9) Oedipus actually disbelieves that he killed his father.

One might take Oedipus' failure to *recognize* that (8) and (9) are contradictory to be relevant here. But we don't take the PNC to depend upon our recognition, and it is the PNC, ontologically understood, that is doing the lifting here. It should be impossible, if the properties of belief are standard, and Aristotle is right, for Oedipus to believe (8) and (9), whether he *recognizes* a contradiction or not.

Wedin (2004) suggests that Aristotle might distinguish between intrinsic and extrinsic contradictions, and limit his argument to the claim that believing an intrinsic contradiction is impossible. An intrinsic contradiction is a contradiction that can be reached by reason alone, where an extrinsic contradiction requires an element external to reason. A putative contradiction such as the one we find with (8) and (9) requires an element external to Oedipus' reason, as he is not privy to the fact that the man at the crossroads is his father. But, moreover, why should it matter whether the contradiction is of the intrinsic or extrinsic variety? We don't limit ourselves to intrinsic contradictions with the PNC, ontologically understood, and the same should go for belief, if the properties involved with belief are not different from those that are involved with what is the case independent of belief. It should be plain, furthermore, that an attempt to read Aristotle as arguing that it is impossible to believe a contradiction *qua* contradiction looks hopeless as well, so long as the properties involved in (ST) are considered standard. We do not place such constraints on the PNC ontologically understood. And if the epistemic situation is no different than the ontological, why the need for constraints upon the former?

Furthermore, Wedin's attempt to limit Aristotle's argument to intrinsic contradictions is not without its own difficulties. Consider (10):

(10) There is a Barber of Seville who shaves all and only those who do not shave themselves.

Now suppose Helly believes (10). She might come to disbelieve (10), needless to say, by asking the question of whether the Barber shaves himself or not. But what do we make of the interim? Wedin thinks that Aristotle will engage in a little revisionist history, for he will need to say that Helly thought she believed (10)—to wit believed that she believed (10)—when in fact she didn't believe (10). And this is something that strains credulity, on the one hand, and attributes a misuse of language to Aristotle on the other.

Suppose we give Aristotle (2b) and the Supervenieince Thesis. According to (2b), S cannot believe of any object in her world that it is F and not F. But this doesn't entail that she rules out the possibility of there being a world *accessible* from hers where something is F and not F.[9] She concedes the argument up to (3).

(3) $\sim\Diamond\ \exists s\ [(Bs: \exists x\ (Fx\ \&\ \sim Fx))]$

Now as Michael Wedin (2004) has pointed out, it seems that ultimately Aristotle is after something like (4) given that he is concerned with *the firmest principle of all*:

(4) $\sim\Diamond\ \exists s\ [(Bs: \Diamond\exists x\ (Fx\ \&\ \sim Fx))]$

And (3) says something like "nobody can accept an *actual* contradiction as true" while (4) says "nobody can accept that there is a world with a true contradiction."

If Aristotle aims at establishing that the PNC is indubitable, and what is more, "the firmest principle of all" he needs (4). However, (4) does not follow from (3) as the conditions of the latter may be satisfied without satisfying those of the former. Doxastically, a person might be open to the idea that there is a world where Fx & ~Fx while nevertheless conceding that she cannot believe of a single actual thing that it satisfies contradictory predicates. And we should not simply assume that such a view belongs merely to the metaphysical fringe. Jan Lukasiewicz, for example, nicely states a position that comes pretty close to endorsing this very sentiment: (1979, 61–2):

> One thinks, e.g., of the squaring of the circle, of the tri-section of any given angle, of the difficulties in transfinite theory. Thus we cannot exclude the possibility that constructions which appear non-contradictory today may nevertheless contain a deeply hidden contradiction which we have not yet been able to uncover …. Russell's recent discovery of a contradiction that touches on the logical foundations of mathematics proves that we may come upon completely unexpected and inexplicable contradictions in this area …. Real objects, and reconstructed concepts in so far as they correspond to reality appear to be raised above all contradiction. In fact, we do not know of a single contradiction existing in reality …. Nonetheless, we can never say with complete certainty that real objects contain no contradictions. Man did not create the world, and he cannot penetrate all its mysteries; he is not even master of his own conceptual creations.

Of course, Aristotle might decide to expect less than superlative firmness from his argument, as one might settle for (3), if she can get it. Sometimes failure to secure a counterexample provides some justification for a principle. And an interlocutor's case takes a hit *ad hominem*, if she is compelled to accept that she cannot produce a *bona fide* counterexample to the PNC. Unfortunately, this would be less than Aristotle's stated goal. Fortunately, the pages that follow the Indubitability Argument contain a formidable, direct defense of the Firmest Principle of all. And it may turn out that upon careful reading, we, like Aristotle, will think nothing admits of less doubt.[10]

II.1.2: Firmness Reconsidered

The last question that stands out in need of comment, in connection with the Indubatibility Argument, concerns Aristotle's claim that the PNC is the most fundamental of all principles. Are there grounds independent of those we have been considering to which one may appeal? In fact, he closes Chapter 3 by saying (1005b32):

> That is why all who demonstrate go back to this opinion in the end (διὸ πάντες οἱ ἀποδεικνύντες εἰς ταύτην ἀνάγουσιν ἐσχάτην δόξαν): it is, in the nature of things, the principle of all other axioms also (φύσει γὰρ ἀρχὴ καὶ τῶν ἄλλων ἀξιωμάτων αὕτη πάντων).

Is it really the case that the PNC, is the most fundamental of all, and is the principle of all other axioms? Some have thought otherwise. Lukasiewicz has argued that the principle of identity is more fundamental. He argues that the PNC cannot be stated without the use of negation and conjunction, where the principle of identity, on his formulation "a property belongs to that object to which it belongs," can. He takes (1979, 54–55) the principle of identity to be therefore "simpler and 'more evident' … [and something] which might be treated in preference to the Law of [Non-]Contradiction as … ultimate and unprovable." But I think that given Lukasiewicz' way of stating the principle, it is best expressed as: $\forall x\ (Fx \Rightarrow Fx)$. Is this a material conditional? There are countless books on logic that reduce " $\Rightarrow$" to more manageable sentential connectives. Conditionals are not free from controversy (Woods 2003), so one might not follow Lukasiewicz in taking the principle to be more fundamental on grounds of simplicity. What is more troubling, as Lukasiewicz points out, is a claim in *Posterior Analytics* that appears to suggest that syllogistic principles do not depend upon the PNC. On Barnes' (2002) translation (77a10–a22):

> No demonstration assumes that it is not possible to assert and deny at the same time— unless the conclusion too is to be proved in this form. Then it is proved by assuming that [*sic*] it is true to say the first term of the middle term and not true to deny it. It makes no difference if you assume that the middle term is and is not; and the same thing holds for the third term. For if you are given something of which it is true to say that it is a man, even if not being a man is also true of it, then provided only that it is true to say that a man is an animal and [*sic*] not not an animal, it will be true to say that Callias, even if not Callias, is nevertheless an animal and not an animal. The explanation is that the first term is said not only of the middle term but also of something else, because it holds of several cases; so that even if the middle term both is it and is not it, this makes no difference with regard to the conclusion.

There are two main ways of reading the passage. The first may be considered the Maier-Husik-Lukasiewicz reading. On this view, Aristotle indicates that, on the whole, demonstration does not rely upon the PNC, and he illustrates this thesis in the following way. Consider the following syllogism:

Major Premise: (1) All humans are animals.
Minor Premise: (2) Callias is a human.
Conclusion: (3) Callias is an animal.

It is the exclusion of not-animal in the major premise that is responsible for its exclusion in the conclusion. And it matters not, should it turn out that the PNC is violated in the minor premise, so long as all humans are animals and for anything for which human is predicated it is not the case that not-animal is also predicated. So, the following syllogizes:

Major Premise: (1) All humans are animals (and not one human is not an animal).
Minor Premise: (2) Callias is a human (and also not a human)
Conclusion: (3) Callias is an animal (and not also not an animal).

Lukasiewicz (1979, 59) and Husik (1906, 221) both argue that the principle of the syllogism and with it the *dictum de omni et nullo* are independent of the PNC. The *dicta* are commonly thought the justification for the four perfect syllogisms.[11] So there are some pretty heavy principles, if the Maier-Husik-Lukasiewicz reading is correct, which are independent of the PNC. (Furthermore, we read Aristotle above claiming the following (1005b6): "Evidently then it belongs to the philosopher, i.e., to the person who is studying the nature of all substance, to inquire also into the principles of syllogism ….") Their view gains further support from the very line after the passage (77a23): "Demonstrations by reduction to the impossible assume that everything is asserted or denied." Aristotle seems to set up a contrast between direct proofs that do not rely upon the PNC and proofs by *reductio ad absurdum* that do.

The second way the passage has been read might be considered the Waitz-Poste reading. (Jonathon Barnes (2002) seems sympathetic with what I'm calling the Waitz-Poste view (145–147)). This view has it that Aristotle's main theme is that, except on rare occasions, demonstrations do not explicitly use the PNC as a premise in a syllogism. Nevertheless, the PNC is in some sense implicitly relied upon. The illustration concerns the rare cases where an instantiation of the PNC occurs explicitly as premise, and it is thought that, so too, the conclusion will thereby be an instantiation of the PNC. And the point that follows is that when we syllogize, we are concerned that the major

term is both truly affirmed of the middle and not truly denied of the middle without concern for whether the middle can be truly denied of the major—so too with middle and minor. The illustration simply shows that if we assume (1) and (2), (3) syllogizes even though (4) is true:

(1) All humans are animals & no humans are not non-animals.
(2) Callias is a human.
So: (3) Callias is an animal and Callias is not a non-animal.
Even though: (4) Non-Calliases are human & non-humans are animals.

Why is (4) true? Presumably because, for example, Coriscus is not Callias and he is human, on the one hand, while *Caenorhabditis elegans* is an animal species different in kind from *Homo sapiens*. As for the apparent contrast between direct proofs, which do not rely upon PNC, and proofs by *reductio ad absurdum* which do, the view we are presently considering holds the contrast to be that the former makes no explicit use while the latter requires explicit use.

The Waitz-Poste reading has the advantage that it is consistent with Aristotle's claims in the last line of chapter 3 of *Book Gamma*. However, the Waitz-Poste reading renders *Posterior Analytics* I.11 entirely uninteresting. As Husik remarks, it is somewhat surprising that (219):

> Aristotle does not come to tell us at this late date, after having treated of the syllogism with the minutest detail in *Prior Analytics*, that in the first mode of the first figure the middle term need not be coextensive with the major, nor the minor with the middle.

In light of the relation between (1) and (4), Husik's remark may not be unfair. Of course, he does presuppose an order to the *Analytics*, even if the presupposition is somewhat orthodox. But it has been powerfully argued that *Prior Analytics* were written after the *Posterior*. Barnes has argued that syllogistic theory was developed in *Prior Analytics* as a response to concerns about demonstration developed from *Posterior Analytics* (1981). Robin Smith (1982) has persuasively argued that Aristotle developed *Prior Analytics* subsequently, though he was working with a syllogistic theory nonetheless in *Posterior Analytics*, albeit one inferior to the syllogistic of *Prior Analytics*. If this is right, looking to 77a10–22 as Aristotle's view of the syllogism and the *dictum de omni et nullo* is looking in the wrong place. Of course, some think, with good reason, that a response by appeal to development buys consistency on the cheap. That is, appeal to development is illegitimate, amounting to a *deus ex machina*. Still, the account of development, as described by Smith is very appealing on independent grounds—grounds

independent of our considerations here in chapter 3 of *Book Gamma*. And it provides a developmental answer to a developmental objection.

II.2: THE CLINCHER

Strictly speaking, the PNC does not admit of demonstration, or so begins chapter 4 of *Book Gamma*. Aristotle expresses a familiar concern about regress here: One cannot demonstrate *p* by appealing to *q*, if *q* is in need of demonstration as well. So, if *p* is demonstrated, it is in virtue of a principle that is not in need of demonstration. More generally, if there is a demonstration, there are principles that don't require demonstration, on pain of circularity or skepticism. (cf. *Posterior Analytics* 1.372b1–15.) And suppose that a disputant, along with some of those practicing natural philosophy, maintains that Non-Contradiction (PNC) is not a principle. Aristotle seems to believe that one would need to identify a principle that is less in need of demonstration than the PNC. And he seems to think this won't happen. However, he is about to argue dialectically (6b8) on behalf of the PNC. He here distinguishes between demonstration *simpliciter* and demonstration in the manner of an *elenchus*. And while he believes the PNC cannot be demonstrated *simpliciter*, he is willing to take a crack at arguing for it.

Aristotle has stated the firmest principle of all, rejected the very possibility of one countenancing a violation thereof, and he has argued that the PNC does not admit of demonstration *simpliciter*. He now sets out to defend the PNC by means of dialectical argument. At 1006b28, he begins his reasoning by stipulating that the disputant agrees that "human being" (ἄνθρωποϛ) signifies (σημαίνει) "bipedal animal." That line of reasoning runs (on Kirwan's translation (1993)) as follows (1006b28):

> It is accordingly necessary, if it is true of anything to say that it is a man, that it be a two-footed animal (for that is what *man* signified); and if that is necessary, it is not possible that the same thing should not be, at that time, a two-footed animal (for "to be necessary" signifies this: to be incapable of not being). Consequently, it is not possible that it should be simultaneously true to say that the same thing is a man and is not a man.

The argument may be initially sketched as follows:

(D) Bipedal animal is what "human" signifies.
So: (1) Necessarily, if anything is a human, it is a bipedal animal.
So: (2) It is not possible for anything that is a human not to be a bipedal animal.

Next, assuming that the operation of substitution of co-signifying expressions is closed within the present context, one substitutes "bipedal animal" for "human" with the result:

(3) It is not possible for anything that is a human not to be a human.

And, provided the term "human" is taken arbitrarily, something far from obvious, we may generalize universally from here:

(4) It is not possible for anything that is F to be not-F.

The Clincher has been characterized, at one extreme, by Graham Priest as "fundamentally flawed," (2014, 15) and, at another, by C.W.A. Whittaker (2008, 199) as "genuinely irresistible." Both characterizations seem to be overstatements on my view. Either way, the argument is interesting, providing an opportunity to consider the connection between definition and consistency.

II.2.1: An Initial Worry

An initial worry concerns what seems to be a gradual slide in what is required for the disputant. We are told that it is possible to provide a demonstration by means of an elenchus provided that the disputant says something (τι λέγῃ), and the Clincher requires that the disputant provide a definition. One might take the former to entail the latter, but this seems to presuppose a high degree of Intellectualism—that one needs to be able to define F in order to successfully use F—to which the disputant need not subscribe. Aquinas (1995) seems to take something like the Intellectualist Reading, saying (Rowan 1961, 227):

> [B]ut it is necessary to take as a starting point that a term signifies something both to the one who utters it, inasmuch as he himself understands what he is saying, and to someone else who hears him. But if such a person does not admit this, he will not say anything meaningful either for himself or to someone else.

Alexander might agree. On Madigan's translation he states (2013): "[B]ecause speech is significant vocal sound, and one who says that speech no more signifies than it does not signify would also negate speech." W.D. Ross seems to think that to have a seat at the table, one needs to be able to give an account of at least something (1924, 268): "if he should only say something. It is absurd to seek to give an account of our views to one who cannot give an account of anything." Either way, one seems within one's dialectical rights to ask the disputant for a definition of her predicates, if, for no other reason, than to guarantee that the content of F, when asserted of a

subject is identical to the content of F when denied of the very same subject, lest the Clincher turn upon homonymy (1006b19): "And it will not be and not be the same thing unless homonymously, as if others were to term not-man what we term man …." Of course, if the Clincher is sound, the *substituens* and s*ubstituendum* will need to be, at a minimum, necessarily co-extensive. A definition of the kind Aristotle seems to have in mind fits the bill, as it will need to satisfy what Kei Chiba (2010, 224) has called the Replacement Condition, to wit, that the *definiens* and *definendum* are interchangeable *salva veritate*. This is not to say that Aristotle literally takes "human" and "bipedal animal" to satisfy the condition. These are mere placeholders for whatever the disputant will supply. (Though I do think there is a reason for Aristotle's using a non-accidental term, "*anthropos*," at this point in the dialectic.) The cause of the demonstration by means of elenchus, as Aristotle puts it, is the one who submits (06d25a). At 1006b25ff. Aristotle indicates that the operative relationship is like jacket and coat (ὡς λώπιον καὶ ἱμάτιον), when the formula is one. And in the Clincher he expects the formula. For what it's worth, in connection with defending excluded middle, Aristotle says (1012a21–24): "But some tend to seek an argument for everything. In relation to such people the place to begin from is definition. And a definition comes to be from the necessity for them to signify something."

II.2.2: Aristotle′s Interlocutors and The Paradox of Coincidental Unity

Because the Clincher is situated in a dialectical context, exegesis and evaluation will benefit from some understanding concerning the putative parties involved (*Topics* 155b7–10). Aristotle could say more about the motivations of his disputants, but there are a few clues to piece together. Consider again Aristotle's formulation of the PNC, in chapter 3 of *Metaphysics*, *Book Gamma* (Ross 1908, 1005b18–22):

> Evidently then such a principle is the most certain of all; which principle this is, let us proceed to say. It is, that the same attribute cannot at the same time belong and not belong to the same subject and in the same respect; we must presuppose, to guard against dialectical objections, any further qualifications which might be added.

Given the last clause, one should expect Aristotle to strain every sinew in order to find a distinction where the disputant finds a true contradiction. He indicates that many of those concerned with nature (1006a2) deny the PNC. Alexander puts the following gloss on his remarks (on Madigan's (2013) translation of Hayduck's edition (228, 9ff.)):

> Many of the natural scientists also use this argument (χρῶνται δὲ τῷ λόγῳ τούτῳ πολλοὶ καὶ τῶν περὶ φύσεως), as some think Heraclitus did. This view also follows for those who say that what appears to each person also is such [as it appears to be], among whom would be the followers of Democritus and Protagoras. For opposite things appear to some people concerning the same thing. But if things also are as they appear, then contraries and opposites would be [true] at the same time of the same object.

Aristotle is probably concerned with arguments from relativity (akin perhaps to those adumbrated in the *Theaetetus* where the views associated with Protagoras are said to meet up with those of Heraclitus (152d-e)). In the next chapter (1010b19–1010b30), Aristotle argues against this kind of thing, maintaining that, for example, the wine isn't both sweet and not sweet *simpliciter*. It's sweet at one time (or to one person) and bitter at another (or to another person). Arguments from relativity readily admit of the kinds of indices that serve as "further specifications that might be added against the dialectical difficulties." In addition, those concerned with nature are described as taking contraries to hold of the same thing, because subjects display contraries at various times, and because something cannot come to be ex nihilo, the contraries need to be present, albeit not displayed, in the subject all the while (1009a22ff). Likewise, these natural scientists overlook temporal indices and, perhaps, the distinction between the potential and the actual.

There is however an argument, which is in some ways more interesting, for denying the PNC.[12] In the chapter prior to the introduction of the Principle of Non-Contradiction, indeed on the previous page, Aristotle, in discussing the discipline to which it falls to discuss an account of being, states (Ross 1908, 1004b1–5): "For if it is not the function of the philosopher, who is it who will inquire whether Socrates and Socrates-seated are the same thing, or whether one thing has one contrary, or what contrariety is, or how many meanings it has?" Aristotle references a puzzle here, which can be formulated as follows. Suppose one takes it that Socrates is sitting at t_1, Socrates-seated is identical to Socrates, and, furthermore, that Socrates exists at t_2.

(1) Socrates exists at t_2.
(2) Socrates = Socrates-seated.

When Socrates stands, as the argument runs, Socrates-seated, no longer exists.

So: (3) Socrates-seated no longer exists.

By the Indiscernibility of Identicals, "Socrates" is substituted for "Socrates-seated," and one arrives at the unwelcome conclusion that:

(4) Socrates no longer exists at t_2.

Claim (4) contradicts claim (1). So pretty clearly we ought to have reservations about (2), as (1) is accepted ex hypothesi. Aristotle, like most of us, is going to take issue with (2), in place of (i) accepting a contradiction or (ii) restricting the use of the substitution of identicals to non-temporal contexts. An entity such as Socrates-seated is a pale shadow of a man, a coincidental unity (Ross 1908, 1026b15–21):

> For the arguments of the sophists deal, we may say, above all with the coincidental, e.g., the question of whether musical and lettered are different or the same, and whether musical Coriscus and Coriscus are the same, and whether everything which is, but is not eternal, has come to be with the paradoxical conclusion that if one who was musical has become lettered, he must have been lettered and become musical—and all the other arguments of this sort. The coincidental (συμβεβηκός) is obviously akin to non-being.

Suppose that Coriscus, a known musician, begins to study literature, and that we use descriptions with the definite article to pick him out, as in (5).

(5) The musical person has become the lettered person.

We take the *becoming relation*, as it is here understood, as being asymmetrical without fail. So (6) is true:

(6) The lettered person did not become the musical person.

However, if it is said that the "musical person" and "lettered person" are the same individual we ought to be able to substitute as follows:

(7) The lettered person has become the musical person.

Seems that the lettered person both did and did not become musical. Coincidental unities thus pave the way to inconsistency. A coincidental unity in Aristotelian terms is a substance-cum-accident treated as a substance.[13] The sophistical arguments, on his view, take Socrates-seated, the lettered-thing, the pale thing, the things Aristotle takes to be akin to non-being, to be substances, or realities, unconditionally. For our purposes, it is interesting that at 1007a20, having just provided the Clincher, Aristotle begins discussing coincidental unities. He states (Kirwan 1993, 1007b1–5):

> But this is impossible; for not even more than two terms can be combined in coincidental predication. For (1) an accident is not an accident of an accident, unless it be because both are accidents of the same subject. I mean, for instance, that the white is musical and the latter is white, only because both are coincidenal to man.

We don't moreover want to say:

(14) The pale thing became an artistic thing.
(15) The pale thing = the artistic thing.
So: (16) The artistic thing became the artistic thing.

It is an important part of Aristotle's etiology of the disputant's mistake that the disputant fails to take account of the distinction between the substantial and the accidental (Ross 1908, 1007a20–23):

> And in general those who say this do away with substance and essence. For they must say that all attributes are accidents, and that there is no such thing as "being essentially a man" or "an animal."[14]

II.2.3: Issues of Scope

The interpretive crux of the Clincher involves a controversy over whether the necessity in question should be considered to be of the *de re* or *de dicto* variety. The interpretation that reads the necessity in question as governing the entire conditional may be read, following Kirwan (1993, 98), as follows:[15]

D-Clincher: (D) $M =_{df} B$ M: Human B: Bipedal Animal
(1d) $\forall(\forall x\ (Mx \longrightarrow Bx)$
(2d) $\neg\Diamond\ \exists x\ (Mx\ \&\ \neg Bx)$
$\therefore$ (3d) $\neg\Diamond\ \exists x\ (Mx\ \&\ \neg Mx)$

Another contender, again following Kirwan's commentary, places our modal operator ranging only over the consequent.

R-Clincher: (D) $M =_{df} B$
(1r) $\forall x\ (Mx \longrightarrow \forall Bx)$ M: Human B: Bipedal Animal
(2r) $\forall x\ (Mx \longrightarrow \neg\Diamond\neg Bx)$
(3r) $\forall x\ (Mx \longrightarrow \neg\Diamond\neg Mx)$
$\therefore$ (4r) $\neg\Diamond\ \exists x\ (Mx\ \&\ \neg Mx)$

The D-Clincher, has three major advantages over the R-Clincher:

1. Word order favors placing the operator over the entire conditional (Kirwan 98).
2. It avoids the questionable inference from (3r) to (4r) (Kirwan 98–99).
3. It is complete, if sound, and not limited to non-accidental predications (Kirwan 93).

The first of these advantages is not decisive. The second is more of a concern. Here's a prima facie counter-model. Suppose in $w_@$ everything that happens to be wearing a raincoat is essentially a human. In w_1, where w_1 is accessible from $w_@$, raincoats have been fashioned for dogs, so (4r) is false, while (3r) is true. With that said, so long as "$\longrightarrow$" is a sign of strict implication, with an accessibility relation that is reflexive, the form is valid.[16] (Of course the predicate "wearing a raincoat" will not instantiate (D) and allow for the substitutions that follow. So, one might question the efficacy of the counter-model.) Still, the shift, without indication, to a strict conditional seems to incur an interpretive cost. In any case, the third consideration is crucial. Aristotle clearly intends the PNC to be simply inviolable.

Advocates of the R-Clincher, it bears mentioning, claim to give a better account of the lines leading up to the Clincher, 1006b13–15 (Kirwan 93). Aristotle here seems concerned to distinguish the predicate "to be a man" from predicates such as "pale" or "artistic." So, the use of a substance term does not look arbitrary, as the opposing reading has it.[17]

II.2.4: The RD-Clincher

There is an alternative reading that I would here like to propose. Suppose we take the operator to govern the entire conditional, much like the *de dicto* reading, but take the predicates akin to rigid designators, so that, much like the *de re* account, the predications involve substances.

RD-Clincher: (D_R) M and B co-designate across counterfactual scenarios.
(1d) $\forall(\forall x\ (Mx \longrightarrow Bx)$
(2d) $\neg\Diamond\ \exists x\ (Mx\ \&\ \neg Bx)$
$\therefore$ (3d) $\neg\Diamond\ \exists x\ (Mx\ \&\ \neg Mx)$[18]

We are told (1006b26) that "Bipedal" and "Human" are akin to "jacket and coat (ὡς λώπιον καὶ ἱμάτιον), when the formula is one." And we know that Bipedal Animal is, ex hypothesi, the formula of Human. We have textual reasons therefore to treat the predicates as involving an identification that is going to hold rigidly across counterfactual scenarios.[19] Much of this may ring too reminiscent of a semantic theory associated with, among others, Hilary Putnam (1975).[20] Does all of this presuppose a framework that the disputant

cannot be expected to accept? Putnam thought his own view metaphysically ecumenical, as even someone like Carnap, who would eschew grounding necessity in *rerum natura* (rather than in our linguistic practices), could consistently accept it.[21] Sameness conditions were thought of as relative to sortal criteria (Putnam 1990, 64):

> In this view, the criteria for [say] person-identity, for example across possible worlds are, to some extent, to be *legislated* and not *discovered*. I do not mean to suggest that this is the quasi-"conventionalist" attitude, but only that the attitude seems, as a matter of fact, to be associated with the appearance of the device.

By means of the device of sortal-relativity, a philosopher is free to employ her own criteria of sameness of kind.[22] Of course, one should be careful not to attribute to Aristotle an acceptance of this semantic theory. David Charles, for example, has shown that there are important differences between Aristotle's essentialism and the view Charles describes as the *programme of modern essentialism* (2000). But it is not Aristotle's views at this point in the dialectic that are advocated. What is needed is agreement sufficient for conversation (Kirwan (1993) 1006b9):

> For not to signify one thing, is to signify nothing, as when names aren't signifying, dialectic (τὸ διαλέγεσθαι) with others is destroyed, and in truth also in relation to one's self.

Aristotle can require that the content of the predicates be univocal by insisting upon a definition wherein the *definiens* and *definiendum* are fixed across counterfactual scenarios, have the substitution of these be thereby valid in the Clincher, while not requiring that the disputant take on *his* ontological framework.[23]

Of course, while the RD-Clincher enjoys the first two advantages attributed to the D-Clincher, it also accommodates the single advantage claimed by advocates of the competing reading. It is, however, as things stand, open to the charge, much like, R-Clincher, that its scope is limited to non-accidental predications.

II.2.5: An Auxiliary Argument

The disputant maintains that it is possible that something admits of contradictory predications. The RD-Clincher only establishes, if sound, that nothing admits of contradictory predications when the terms in question apply rigidly. Russell Dancy (1975, 104–114) (following the cue of Elizabeth Anscombe (1061, 39ff.)), suggests that Aristotle has an auxiliary argument at his disposal for accidental predications.[24]

Take a non-essential descriptor such as "tall" or "pale." Dancy (108) argues that "above standard height" might be supplied for the former, and (112) that Aristotle seems to understand "pale" as "colored more penetratively than standard"

(119a30, 153a38–b1, 107b28–31, 1057b18–19). He suggests that the following argument, which I will call "the A-Clincher," is available to Aristotle:

(D) That which is beyond standard height is what "tall" signifies.
So: (1) Necessarily, if something is a tall so-and-so, then it extends beyond standard height.
So: (2) It is not possible for anything that is a tall so-and-so, simultaneously, not to extend beyond standard height.
So: (3) It is not possible for anything that is tall, simultaneously, not to be tall.

As Dancy argues, there is no standard height *simpliciter* (108). One needs to reference a class of, for example, humans, Burr Oaks, tigers, buildings, and so on. The point is not that the predicate "tall" is ambiguous, as "above standard height" is an acceptable signification. The point is rather that (Dancy 1975, 108):

> [T]he conditions under which it is true to say of something that it is tall vary with the sorts of things in question. Aristotle, I would bet, would say that they vary with what the things are, with their essences.

Sentences such as "It is tall" and "He is pale" do not stand on their own. One needs to understand the *kind* of thing being spoken of in cases such as these.[25] I see the dialectic playing out as follows. Aristotle is meeting up with some individuals who are impressed with arguments from relativity or who, failing to recognize a distinction between accidental and non-accidental predications, reason fallaciously about coincidental unities (see II.2.2). He introduces the RD-Clincher.

RD-Clincher: (D_R) M and B co-designate across counterfactual scenarios.
(1d) $\forall(\forall x\ (Mx \longrightarrow Bx)$
(2d) $\neg\Diamond\ \exists x\ (Mx\ \&\ \neg Bx)$
$\therefore$ (3d) $\neg\Diamond\ \exists x\ (Mx\ \&\ \neg Mx)$

He has the A-Clincher at his disposal. So, one might wonder why he goes with the more limited RD. One reason is probably the one given in *Categories* 3b34–4a2:

> Substance, it seems, does not admit of a more and a less …. For example, if this substance is a man, it will not be more a man or less a man either than itself or than another man. For one man is not more a man than another as one pale thing is more pale than another.[26]

If you are limited to the A-Clincher you leave out an important class of terms that do not admit, as the A-Clincher requires, of the comparative

relation. It makes sense to say of Monty that she is more pale than standard. But it is nonsense to say that Socrates is more of a human than Monty.

In addition, when one has moved from the RD-Clincher to the A-Clincher, one has thereby distinguished accidental from non-accidental predications, making a distinction that is crucial for providing the disputant with an etiology of his mistake. And that is precisely, moreover, what we find Aristotle doing, having just provided the Clincher, he states (Ross 1908, 1007a20–1007b5): "And in general those who say this do away with substance and essence. For they must say that all attributes are accidents, and that there is no such thing as 'being essentially a man' or 'an animal.'" With the RD-Clincher and the A-Clincher Aristotle's elenchus is comprehensive, and it includes a distinction that provides an error-theory for the disputant: he countenanced coincidental unities, took predications to form a homogenous class, which led to the acceptance of inconsistencies.[27] Aristotle might illustrate his point in the following way:

(i) We assume we can say the following:

(1) The *musical one* has become the *lettered one*.

(ii) We take this *relation* to be asymmetrical:

So: (2) The lettered one did not become the musical one.

However, if we take *musical one* and *lettered one* to refer to the same individual we ought to be able to substitute these locutions as follows:

(3) The *lettered one* has become the *musical one*.

(iii) Merely countenancing what Aristotle calls coincidental unities paves the way to inconsistency.

Aristotle's diagnosis is going to be that the disputant is motivated by a failure to recognize the distinction between substantial and coincidental predications. As a result, the disputant does not distinguish between substantial unities and coincidental unities, being misled by the surface grammar. The disputant's first claim can be paraphrased as follows (Williams 1985):

(1a) There is some unique x such that x is a human and x is musical at time t_1 and x is lettered at t_2.

(1a) captures the truth-conditions of (1), but *musical* and *lettered* are considered different coincidental properties of something that is essentially

human. And there is no reason to take *musical* and *lettered* as co-referential, so there is no reason to think that the substitution needed for (3) can be made from (1a)—contradiction averted.

I find the idea attractive that Aristotle included substance terms in the argument, as doing so allows him to address some of the motivations of the disputant. It is also supported by the text. Further, this reading takes advantage of all three considerations that favor the *de dicto* reading, while also accommodating the one advantage attributable to the *de re* reading. With that said, one might take issue with the claim that *definiens* and *definiendum* rigidly co-designate. Perhaps the relation here is analytic? Aristotle says some three lines before the Clincher that (1006b25):

> For "to be one thing" signifies this: being like jacket and coat if the formula (logos) is one.

However, the expression "if the formula is one" seems out of place, if the idea is merely that "jacket" and "coat" mean the same thing. One would think that saying "being like jacket and cloak" is enough. For what it's worth, in the *Categories*, Aristotle says that things which are called synonyms are the same in their *logos of being* (1a6). *Same in being* seems different to me than *same in meaning*. In fact, it seems like property-identity. Furthermore, it seems to me that "jacket" and "coat" have one formula in a way that "creature with a heart" and "creature with a kidney" do not. So, I don't think Aristotle is talking merely extension equivalence. Of course, the definition in question involves necessity, so one might settle for necessary extensional equivalence. Something similar goes, it seems to me, mutatis mutandis, about "being triangular" and "being trilateral." If the relation is something stronger than necessary extensional equivalence, I think we're arriving at the conclusion that it is identity. If the relation is identity, and the statement is true, the predicates pass the test for rigidity.

As I've argued, moreover, Aristotle is right to be guarded, lest the putatively true contradiction turn upon an equivocation. Fixing the predicates rigidly is a nice way to ensure that the content of F when it is affirmed of a subject is the same content of F when denied of the same subject—less room for equivocation on the part of the disputant. And, it bears reiteration, reading the predicates as designating rigidly may account for the context of the argument being imbued with discussion about essential and accidental properties, without limiting the scope of the argument to necessity *de re*, as rigid designation is commonly associated with essentialism.

Nevertheless, one might object as follows. If the proposal is that the predicates designate rigidly, what is the *designatum*? And here there is a well-known issue. General terms are thought to designate their extensions. So, if a

term is rigid, it will have the same extension in every world. But then none of the paradigm examples, water, heat, human, and so on, will be rigid. So, as some have suggested, let rigid predicates designate kinds and not mere extensions. However, if to be rigid is to have, as we might say, the same intension with respect to every world, then just about every predicate, for example, even "bachelor," is rigid. What should we say?

I submit that the designata should be understood as properties. But I don't think every general term found in a putative identity statement is rigid. A few examples are here taken from Nathon Salmon's (2005) paper "Are General Terms Rigid?"

(1) Tiger is the species that serves as the mascot of Clemson.
(2) Water is the liquid that covers most of the Earth.

As putative identity claims, these claims, if true at all, are not necessarily true. So, they fail the test. One might call them coincidental "identities." (There is of course reason to think that they are not identity statements, if you are sensitive, for example, to the argument in Kripke's "Identity and Reference" (2011).) Of course, some general terms do not even designate properties, provided that "green before midnight or otherwise blue" does not cut at the joints, so they do not designate rigidly. It seems there is something analogous with Aristotle. As I suggested, Aristotle thought that misclassifying coincidental unities, such as those we find in (3), as identities, paves the way to contradiction.

(3) The person who is seated is Socrates.

As a putative identity claim, (3), if true at all, is not necessarily true. The terms here are singular and not general. But they fail the same test as those that are general.

Still, one might further object. How does the substantial and accidental distinction become broached when, for example, it seems that a great many general terms designate rigidly? Suppose we start with the *definiendum* "chirpie-laddie" with a *definiens* "upbeat youth."[28] Would the RD-Clincher work just as well with a property that seems, on the face of it, accidental? Just as I would analyze "tall" as "above average height relative to kind K," I'm inclined to read "chirpie-laddie" as "Young human with a greater than average sense of alacrity." But to read this we need to first signify human, and we are back to dealing with items that are substances. Suppose we instead simply begin the RD-Clincher with "chirpie." For my part, I'm inclined to think that "chirpie" references a certain temperament. That temperament may be described as above in some worlds but not those where conditions are so grave that even those with such a temperament lack a sense of alacrity.

Finally, if every predicate does rigidly designate, the Clincher is, still and nevertheless, best read as the RD-Clincher. This means Aristotle doesn't need the A-Clincher. Of course, this leaves us with significantly fewer resources for explaining why the passage involves frequent reference to substantial and accidental predication.

II.2.6: An Alternative Way of Extending the Clincher

Michael Wedin offers an alternative way of reading the Clincher as complete. He begins by suggesting that we "explicitly register" that the predication involved in the conclusion of the Clincher is essential predication by means of subscripts in the following way (236):

(C) $\neg\Diamond\exists x\ (Mx_E\ \&\ \sim Mx_E)$.

He attempts to establish the thesis that the Clincher is comprehensive by showing that every predication of the form ($M\alpha\ \&\ \sim M\alpha$) violates (C). I will argue that his argument establishes either less than his thesis or more than we should want.

Wedin believes that when we have a "standard accidental predication … [such as] …. 'Socrates is white,'" there is, as he calls it, a 'fine ontological configuration' at work which he symbolizes partially as follows (236):

(foc) $\exists x\exists y$ (x is a substantial particular & x = Socrates & y is a color individual such that y is in x & Wx_E)

We may assume that human is essentially predicated of Socrates. But the innovation here is that the color individual, a non-substantial individual that belongs to Socrates, is essentially white. I take it that there is a controversy over including these non-substantial particulars in Aristotle's ontology. The view here is anything but metaphysically ecumenical. But if Wedin's argument works, it might provide some additional support for the view. In any case, the next move involves consideration of the truth-conditions involved in expressing a "standard accidental predication" that involves a contradiction. Suppose someone asserts, perhaps a follower of Heraclitus, that Socrates is both white and not white. Wedin takes such a claim to have the following form:

(1) $\exists x\exists y$(x is a particular substance & x = Socrates & y is a color individual such that y is in x & $Wy_E\ \&\ \sim Wy_E$)

As Wedin argues, the last conjunct violates (C), that is, the conclusion of the Clincher. He generalizes the argument as follows:

(2) $\Diamond \exists x\ (Fx_E \ \& \sim Fx_E) \Rightarrow \Diamond \exists x \exists y\ ((y = x)\ v\ (y \in x)\ \&\ (Fy_E \ \& \sim Fy_E))$
(3) $\sim\Diamond \exists\ x \exists y\ ((y = x)\ v\ (y \in x)\ \&\ (Fy_E \ \& \sim Fy_E))$
So: (4) $\sim\Diamond \exists x\ (Fx_E \ \& \sim Fx_E)$

And he claims (237) that in (4) "we are free to read Fx as a general predicative schema accommodating accidental as well as essential predication." Simply put, every accidental predication where the *relata* involved include a particular substance and a non-substantial individual, implies an essential predication to obtain between at least one non-substantial individual (a particular trope of F) and the property F. And were one to attribute contradictory predicates F and ~F to a particular substance, then F will be *essentially* predicated of a non-substantial particular and ~F will be *essentially* predicated of a non-substantial individual. But this latter result, so the argument runs, is ruled out by the conclusion of the Clincher.

The mistake here seems to be this. It is assumed, quite plausibly, that substantial predications are essential predications. And it is assumed, given the ontology Wedin attributes to Aristotle, that non-substance particulars satisfy predicates essentially. But what are we to make of the relationship between a particular substance and a non-substantial particular? The relationship between Helly and human is essential, and we can suppose, for the sake of argument, that the relationship between a white color–individual and whiteness is essential, but what about the relationship between Helly and the color individual? The predication that expresses the relationship between Helly and the color individual will need to be an essential predication, if the account is comprehensive. If not, the possibility of contradiction—in the form of "is both in and not in"—is not ruled out by Wedin's: (C) $\neg\Diamond\exists x\ (Mx_E \ \& \sim Mx_E)$.

Now one might respond that the relationship between Socrates and the trope, or more generally the relationship between a subject and its properties, is not something easily explicated. We invite a regress by treating the instantiation relation as just another property, or so the argument runs. If one is going to countenance such relations, they are best thought of as primitive. These are perhaps fair considerations, but they would miss their mark if applied here. It is one thing to accept that "has the property" is primitive, doesn't admit of further analysis, and so on. It is quite another to take "has the property of *being white*" as a primitive. There is a perfectly meaningful question one can ask about this relation: Why is it that one non-substance particular is in Socrates rather than some other non-substance particular? And to this question one may not reasonably respond: I take Socrates's being pale as a primitive, which doesn't admit of further inquiry, and so on.

The reason for the oversight here might be explained as follows. Consider the truth-conditions for a substance's having a non-essential property. Familiar from the *Categories* is the idea that substances must have some properties:

(foc_1) Nec ∀x∃y (x is a substantial particular ⇒ y is a color individual & and x *in fact* has y & and y belongs necessarily to y's genus)

But Wedin seems to take this to say:

(foc_2) Nec ∀x∃y (x is a substantial particular ⇒ y is a color individual & Nec x *has* y & y belongs necessarily to y's genus)

The former says that necessarily every substantial particular has some color individual or another *in it*, and that the color individual belongs essentially to its genus, but that the relation between color individual and substantial-individual is accidental. The latter strengthens the claim so that the relationship between color individual and substance-individual is essential. The latter closes the gap for Wedin's account, but at the cost of eliminating the essential-accidental distinction. That is, acceptance of (foc_2) entails, for example that Helly is essentially pale, and, by parity of reason, essentially musical, and essentially literate, and so on. As we've seen, Aristotle thinks that people are misled into countenancing contradictions as true by neglecting the distinction between essential and non-essential predications. So, an acceptance of (foc_2) is simply not available to him. If we loosen our grip even slightly, and attribute (foc_1) to him, then there are some predications that are not ruled out by Wedin's reading of the conclusion of the Clincher, and the attempt to extend the proof to all predications fails.

II.3: THE ARGUMENT FROM MONISM

The argument Aristotle provides after the Clincher takes an interesting turn. Aristotle sees the disputants' rejection of the PNC as tied in some way to Monism. The argument begins at (Ross 1908, 1007b18–25):

> Again, if all contradictory statements are true of the same subject at the same time, evidently all things will be one (ἅπαντα ἔσται ἕν). For the same thing will be a trireme, a wall, and a man, if of everything it is possible either to affirm or to deny anything (and this premise must be accepted by those who share the views of Protagoras). For if anyone thinks that the man is not a trireme, evidently he is not a trireme; so that he also is a trireme, if, as they say, contradictory statements are both true.

The clarity commonly associated with Aristotle's work is here on display. How have we moved from the PNC to Monism? The idea seems to run as follows. Suppose the radical thesis found in (1) is true. Then (2) follows, since every object has every property and its complement property:

(1) Every object has every contradictory property.
So: (2) Everything has the same properties.

If we accept the Identity of Indiscernibles, as in (3), and everything has the same properties, then we are driven to (4) and only one thing exists.

(3) The Identity of Indiscernibles: Same properties, same thing.
So: (4) Everything is one.

The dialectic seems to have evolved considerably. Aristotle has gone from arguing against the claim that *some* object may possess *some* contradictory properties to arguing against the claim that *every* object has *every* contradictory property. Even if his argument here succeeds, it does not establish the PNC. Why the shift in scope? Perhaps he believes that those who deny the PNC are led to do so by an acceptance of the idea that *every* object has *every* contradictory property. This is suggested by the reference to Protagoras as well as Anaxagoras. I will have more to say about the views associated with Protagoras, inter alia, in the following. But the idea might be cursorily expressed as truth is in the eye of the beholder, such that if S′ believes that *P*, and S′′ believes that *P* is false, for any S, or any *P*, then it is true that *P* and true that ~*P*. (One wants to ask: "*Is there some disagreement over every proposition?*") The philosophers of nature, in contrast, are thought to have observed contrary properties in relation to a substrate, and to have assumed that they must have been present within the substrate ab initio (Ross 1908, 1009a22–30):

> Those who really feel the difficulties] have been led to this opinion by observation of the sensible world. They think that contradictories or contraries are true at the same time, because they see contraries coming into existence out of the same thing. If, then, that which is not cannot come to be, the thing must have existed before as both contraries alike, as Anaxagoras says all is mixed in all, and Democritus too; for he says the void and the full exist alike in every part, and yet one of these is being, and the other non-being.

Aristotle summarily dismisses the view here described by suggesting that they believe they are dealing with something definite when, in fact, they are treating something indefinite. In all likelihood, he thinks they overlook a distinction between actuality and potentiality, as the contraries in question are mere potentialities. As such, they wouldn't pose a threat to the PNC. But Aristotle is not so much arguing for this conclusion as exploiting a facet of *his* system, and providing an etiology of what he takes to be a mistake.

Aristotle probably thinks of the Third Argument as a follow-up to the Clincher. Recall that Aristotle argued in the Clincher as follows:

(D) Humans are bipedal animals.
So: (1) Necessarily all humans are bipedal animals.
Therefore: (2) It is not possible that any human is not a bipedal animal.

Substituting "human" for "bipedal animal" we get:

(3) It is not possible that any human is not a human.

Aristotle's third argument makes a little more sense if it is seen in relation hereto. He argues (Ross 1908, 1007b29–1008a37):

> But they must predicate of every subject the affirmation or the negation of every attribute. For it is absurd if of each subject its own negation is to be predicable, while the negation of something else which cannot be predicated of it is not to be predicable of it; for instance, if it is true to say of a man that he is not a man, evidently it is also true to say that he is either a trireme or not a trireme. If, then, the affirmative can be predicated, the negative must be predicable too; and if the affirmative is not predicable, the negative, at least, will be more predicable than the negative of the subject itself. If, then, even the latter negative is predicable, the negative of "trireme" will be also predicable; and, if this is predicable, the affirmative will be so too.

If one is going to cavil in the case where we have predications such as we do in the definitional cases, we will have the interlocutor saying that we can make sense of (i):

(i) There is an x such that x is human and x is not human

However, if it is reasonable to assert that some human is not a human, it is a fortiori reasonable to believe that some human is not a trireme, and so on.

(ii) x is not a horse.
(iii) x is not a trireme.
(iv) x is not a wall.
(v) x is a not a fried egg ….

However, the predication of trireme of some human holds no less than the predication of *non-human* of some human. So, if one is going to accept the latter predication, there is no reason for hesitation with the former. Presumably the subjects and predicates are taken arbitrarily (though it is interesting that they are count-nouns), so that one may generalize. However, they only generalize so far. Why would a disputant begin with the claim *some human is not a human*? The disputant is still seen as caviling over the Clincher. With

that said, anytime such a disputant were to deny something of x, she should by parity of reason affirm it. So, the disputant should both affirm and deny every property and its complement to any given subject. This seems to be what Aristotle has in mind in saying that any object is going to have every contradictory property.

(ii) x is not a horse and x is a horse.
(iii) x is not a trireme and x is a trireme
(iv) x is not a wall and x is a wall.
(v) x is not a fried egg and x is a fried egg ….

And if any object has every property and its complement, there is no object that has a different set of properties. This takes care of the first inference in the Third Argument. The rest of the argument is not without difficulties, though the difficulties are less exegetical than philosophical. In order to get to the desired conclusion, that all things are one, from the premises that all things have the same property, Aristotle needs the Identity of Indiscernibles: for any x, and for any y, if x and y have the same properties, x = y. The principle is suspect, to say the least. A critic will readily conceive of a world with *two* bodies that have the same properties. Perhaps they are spheres alike in shape, mass, material, and so on. Space in this world can be relational, so they have the same spatial properties, and any temporal considerations may be handled as well (Black 1952). One might also question why the predication of trireme of some human holds no less than the predication of *non-human* of some human. I think that I can conceive of myself as non-human—as an angel, to wit, without great difficulty. I think it less intelligible that I might be a trireme.

II.3.1: AN ADDENDUM

A further consequence, as Aristotle sees matters, is that one will be moved to give up the principle that it is necessary to assert or deny any one thing of one thing. He will argue for this principle, which is sometimes called Excluded Middle, at some length in chapter 7 of *Book Gamma*. That giving up this principle is a consequence, for those who are committed to the view that every subject has every contradictory, is found at 1008a2–1008a7 (Ross 1908):

> Those, then, who maintain this view are driven to this conclusion, and to the further conclusion that it is not necessary either to assert or to deny. For if it is true that a thing is a man and a not-man, evidently also it will be neither a man nor a not-man. For to the two assertions there answer two negations, and if the former is treated as a single proposition compounded out of two, the latter also is a single proposition opposite to the former.

We suppose, with the interlocutor, that it is legitimate to say:

(1) He is a human and not a human.

As Kirwan seems to understand the argument (102–3), it appears that Aristotle divides the conjunction into two conjuncts as (1a) and (1b). And he takes (1a) to hold bi-conditionally, given his interlocutors commitments, with (2a). The same goes, *mutatis mutandis* for (1b) and (2b).

(1a) He is a human [iff] (2a) He is not a human.
(1b) He is not a human [iff] (2b) He is not not a human.

Aristotle then, as the reading runs, seems to take the conjunction of (1a) and (1b) to be the assertion for which the conjunction (2a) and (2b) is the denial. And he maintains that there is no reason to consider the latter the denial of the former, when, ex hypothesi, one can, as the disputant apparently does, accept both.

However, as Kirwan points out, the argument, read this way, seems to involve an egregious error. Aristotle seems to take a form such as (5) to be the denial of (4):

F (4) p & q
F (5) ~p & ~q

But let the value of p = false = *Joseph Biden is a Republican* and the value of q= true = *Barack Obama is a Democrat*. Quite obviously (4) and (5) are false on this assignment. But if they are both false, they are not contradictories. And one would have thought that the necessity involved when we are compelled to *assert or deny any one thing of one thing* involved mutual exclusivity. It seems that while one might not want to assert both (4) and (5), one should be willing to deny both (4) and (5). By extension, one need not agree with Aristotle that (1ab) is the assertion for which (2ab) is the denial. The principle that Aristotle understands as violated is, presumably, it is necessary to assert or deny, but not both assert and deny, one thing of one thing. And the disputant may have no issue with bivalence. Of course, the *but not both* clause seems to assume the PNC. And the PNC, if true, rules out the disputant's current thesis that every subject has every set of contradictory properties. So, appeal thereto is likely a *petitio principii*.

However, Aquinas seems to take Aristotle's point differently. Thomas says the following (Rowan 1961, 640):

> He now draws the other impossible conclusion which follows from this view, namely that a negation will not be distinguished from an affirmation as regards

Table 2.1 Universal Falsehood

p	*&*	*q*	*&*	*~p*	*&*	*~q*
T	T	T	**F**	F	F	F
F	F	F	**F**	T	F	F
T	F	F	**F**	F	F	T
F	F	F	**F**	T	T	T

> falsity, but each will be false. Thus he says that not only the foregoing impossible conclusions follow from the above-mentioned position, but also the conclusion that it is not necessary "either to affirm or deny," i.e., it is not necessary that either the affirmation or the negation of a thing should be true, but each may be false; and so there will be no difference between being true and being false.

Aquinas clearly understands that (4) and (5) are not contradictories. The problem, as he sees it, is that the disputant is committed to every claim taking the form of (1), and so, (1a) and (1b). He is further committed, in virtue of (1a) and (1b), and the view that every subject has every contradictory, to every claim having counterparts (2a) and (2b). The conjunction of forms (1a) and (1b), that is, (1ab), and the conjunction of forms (2a) and (2b), that is, (2ab), are not contradictories. (That is, (1ab) and (2ab) are not contradictories). They have the form of (4) and (5). The problem I take it, is that conjoining (1ab) and (2ab) leaves one with a statement that is tautologically false (See Table 2.1).

As Aquinas puts it, "there is no difference between being true and being false." Read charitably, Aquinas may mean that every claim is going to come out false. And there isn't any need to go about asserting (or denying) when everything is false. Of course, one might extend the argument here in *peritrope* fashion, to say that the disputant's view must also be false, if everything is. (We will see Aristotle doing just that below at 1008a29).

One might respond: the disputant arrives at a statement that is tautologically false, provided we rely upon classical logic. And classical logic relies upon the PNC. So, the move is after all a *petitio principii*. It will come as no surprise that we can have non-classical tables. Suppose we provide truth-functional definitions as follows:

&-def: ϕ & ψ = 1 iff ϕ = at least 1(though perhaps both values) and ψ = at least 1(though perhaps both values).
~def: ~ϕ = 1 iff ϕ = 0 or ϕ = both 0 and 1.
v-def: ϕ v ψ = 1 iff ϕ = at least 1 or ψ = at least 1.

Let "B" = both true and false, and we don't get the conjunction as tautologically false (See Table 2.2):

Table 2.2 A Non-Classical Model

		p	*&*	*q*	*&*	*~p*	*&*	*~q*
T	T	T	T	T	**F**	F	F	F
F	T	F	F	F	**F**	T	F	F
T	F	T	F	F	**F**	F	F	T
F	F	F	F	F	**F**	T	T	T
B	B	B	T	B	T	B	T	B
T	B	T	T	B	**F**	F	F	B
F	B	F	F	B	**F**	T	T	B
B	T	B	T	T	T	T	T	T
B	F	B	F	F	**F**	B	T	T

And the assignment here really doesn't exclude anything like Excluded Middle, which will remain tautologically true (as we find in Table 2.3):

Table 2.3 Excluded Middle

	p	*v*	*~p*
T	T	**T**	F
F	F	**T**	T
B	B	**T**	B

Of course, logic itself cannot decide the issue. But Aquinas seems to take us a little further than we might have gone otherwise. Let's see how far the penultimate argument of the fourth chapter can take us.

II.4: THE PRIORITY OF ASSERTION

Aristotle begins the next argument by distinguishing between a disputant who accepts some contradictions and the now familiar disputant, who takes the *strong view* that every subject has every set of contradictories. His refutation aims at the latter (Ross 1908, 1008a11–29):

> Again, either the theory is true in all cases, and a thing is both white and not-white, and existent and non-existent, and all other assertions and negations are similarly compatible or the theory is true of some statements and not of others. And if not of all, the exceptions will be contradictories of which admittedly only one is true; but if of all, again either the negation will be true where the assertion is, and the assertion true where the negation is, or the negation will be true where the assertion is, but the assertion not always true where the negation is. And (a) in the latter case there will be something which fixedly is not, and this will be an indisputable belief; and if non-being is something indisputable and

> knowable, the opposite assertion will be more knowable. But (b) if it is equally possible also to assert all that it is possible to deny, one must either be saying what is true when one separates the predicates (and say, for instance, that a thing is white, and again that it is not-white), or not. And if (i) it is not true to apply the predicates separately, our opponent is not saying what he professes to say, and also nothing at all exists; but how could non-existent things speak or walk, as he does? Also, all things would on this view be one, as has been already said, and man and god and trireme and their contradictories will be the same. For if contradictories can be predicated alike of each subject, one thing will in no wise differ from another; for if it differs, this difference will be something true and peculiar to it. And (ii) if one may with truth apply the predicates separately, the above-mentioned result follows none the less, and, further, it follows that all would then be right and all would be in error, and our opponent himself confesses himself to be in error.

The argument begins with a distinction concerning assertions and denials:
(Asymmetry): Everything asserted can be denied but there is something that may be denied but cannot be asserted.
(Symmetry): Everything asserted can also be denied and everything denied can also be asserted.

What happens to the advocate of the *strong position* if *Asymmetry* is chosen? How does Aristotle get from there to the claim, as the argument requires, that there would be something that steadfastly (παγίως) is not a thing-that-is? Kirwan notes that in *Posterior Analytics* it is claimed that assertions are "prior to and more certain than denials." At 86b34 Aristotle makes the following, fairly parenthetical, remark (tr. Barnes 2002): "[F]or negations are familiar because of affirmations, and affirmations are prior—just as being the case is prior to not being the case." Alexander (294, 30) points us to the opening lines of chapter 5 of *De Interpretatione*, where Aristotle says (Ackrill 1979): "The first single statement-making sentence is the affirmation, next is the negation. The others are single in virtue of a connective."[29] The idea might be that before one can deny that a property belongs to a subject, one has to have some familiarity with that which is being rejected. One can simply assert something without considering the state of affairs that would obtain were the assertion false. But one cannot meaningfully say "I reject that," without reference to the state of affairs, namely the one that is being said to not obtain. *Ceteris paribus*, affirmations are prior in being. However, if there is something that can be denied that cannot be asserted, the denial would have what it cannot, priority—which is to say more being and, if you will, prima facie certitude. It is as if there were a steadfast fact about some denial independently of any content denied. So, in sum, Aristotle is arguing

that someone who takes the *strong position* will need to head down path A or path B. On the former, these ontological difficulties await.

Asymmetry, however, presents the following reason for curiosity. Insofar as we are dealing with an advocate of the *strong position*, we are dealing with someone who maintains that every contradictory holds of every subject. Hence, every property holds of every subject. *Asymmetry* seems to entail that there is at least one thing, for which a property, does not hold. So, *Asymmetry* may not be a *bona fide* alternative for the advocate of the *strong position*.

What about *Symmetry*? This alternative, in turn, presses a dilemma upon one pushing the *strong position*, with the following two horns:

(S_1) We cannot truly assert separately "A is B" and "A is not B"
(S_2) We can truly assert separately "A is B" and "A is not B"

Taking (S_1) first, the *reductio* may run as follows. The disputant says, for example, that *A is B and A is not B* in the same breath. According to (S_1) we cannot truly assert the conjuncts of this conjunction severally. But then it seems that we cannot truly assert what we might call atomic propositions. If we cannot truly assert atomic propositions, then, as *we* might put it, albeit somewhat anachronistically, there aren't truth-components for the complex propositions. So, the advocate of the *strong position* won't be able to truly assert anything. Further, given that there are no truly asserted atomic propositions, there are no truth-makers to underwrite them, so nothing whatever is the case (1008a20): "then not only does he not state these [singular propositions] but nothing whatever is." Hence, the advocate of the *strong position* will not be a thing that can "walk and talk," much less argue, but will be, rather, a "thing-that-is-not." Acceptance of (S_2), we are told, issues in "the result we have stated." Which stated result is that? Ross (1924) takes it to be the claim, familiar from the Argument from Monism, that everything is indistinguishable (267). Perhaps Aristotle has the following in mind. When he says "We can truly assert separately the conjuncts 'A is B' and 'A is not B,'" he means that they may be asserted *definitely*. That is, to assert 'A is B,' in the intended way is not to assert 'A is B (though A is also not B as well),' where the parenthetical remark is tacitly understood but not uttered. Aristotle might argue that this latter is not really a conjunct of the conjunction, but rather the conjunction itself. So, on the assumption that the conjuncts are *definitely* asserted, 'A is B' entails 'A is not B.' Therefore, there will be a counterexample to the *strong position*. There will be some A that is B that is not also not-B. And if the disputant is not willing to grant these *definite assertions*, then he gives up (S_2) and therewith anything definite (Ross ,1908, 1008a30–34):

> And at the same time our discussion with him is evidently about nothing at all; for he says nothing. For he says neither "yes" nor "no," but "yes and no"; and again he denies both of these and says "neither yes nor no"; for otherwise there would already be something definite.

The alternative is to have something "true and distinctive." Otherwise, Aristotle thinks "it follows that everyone would have the truth and everyone would be in error, and [the disputant] is in error by his own admission." If I am not in error, we are touching upon themes that will be relevant to Aristotle's critique of Protagoras. It is preferable to take up this theme carefully and at length, so treatment may be usefully deferred to the next chapter.

II.4.1: Truth and Assertion (Lest we Beg the Question)

If Aristotle is offering an argument at (1008a35–b1), he recognizes that he meets the burden of proof with less agility here than heretofore. Nevertheless, his position is concisely summarized, and his position has been well received (Ross 1908):

> Again, if when the assertion is true, the negation is false, and when this is true, the affirmation is false, it will not be possible to assert and deny the same thing truly at the same time. But perhaps they might say this was the very question at issue.

It is difficult to argue on behalf of the PNC without relying upon it. For its defenders, it's comparable to defending reason, insofar as it is difficult to avoid making use of the very notion that is *said to be* in need of accreditation. Nevertheless, clarified positions can be more persuasive. Aristotle's pithy summary displays the simplicity of his position, putting it in stark contrast with what he takes to be an impossibly counterintuitive and unwieldy competitor.

II.4.2: The Inscrutability of the Indefinite

Could an advocate of the *strong position* describe anything whatsoever, given that everything has every property?

> Again, is he in error who judges either that the thing is so or that it is not so, and is he right who judges both? If he is right, what can they mean by saying that the nature of existing things is of this kind? And if he is not right, but more right than he who judges in the other way, being will already be of a definite nature, and this will be true, and not at the same time also not true. (Ross 1908, 1008b2–8).

Suppose one believes that, for all x, and for all F, x is F and that x is not F. What is the nature (φύσις) of the things that are of that kind (τοιαύτη)? Consider the role that predicates play for someone who believes that everything satisfies every predicate and its contradictory. Some philosophers have thought "predications" such as "is identical to itself" or "exists" are not *bona fide*, as these do not provide any new content attributable to their object.[30] Predicates, on the *strong position*, face a similar, though more severe, situation. Every object has every property. Therefore, predicating F of some object does not provide any new content attributable to the object. Add to this the claim that every object also has the contradictory of every property, and there is no predication that provides any new content (1008b4): "What can they mean by saying that the nature of existing things is of this kind?" It is hard to see how there could be a nature or kind for the things-that-are for the advocate of the *strong position*. To borrow a phrase from Nelson Goodman (1978, 11), "Just as to stress all syllables is to stress none," one might say that to attribute every property to everything is to attribute none. And this will leave the nature of things inscrutable. Perhaps the advocate will concede this, maintaining there are no kinds—only flux. Graham Priest believes Aristotle's question easily answered (2006, 38): "The Heraclitean will reply: What could it be like? In a state of flux; just like that Aristotle." But Aristotle is going to worry about this locution "state of flux." Is that the determinate, and thus non-fluctuating, φύσις of things? Is it unequivocally true that this is the nature of things? If so, there is a counter-example to the *strong position*.

Perhaps, as Aristotle considers the matter, the disputant takes himself to have less than the whole truth but to approximate truth more than those who disagree (Kirwan 1993, 1008b5):

> "And if he is not right, but more right than he who judges in the other way, being will already be of a definite nature, and this will be true, and not at the same time also not true."

And so Aristotle might believe that if we can say x has more truth than y there is something z that is determinate, some z, such that $z \neq x$, to which x approximates more than y. One might worry about this inference, as it doesn't hold for comparatives in general. Helly, the fastest skier, is currently faster than Monty. But Helly is not closer, except reflexively, to some fastest skier. Still, Aristotle can ask: "Again, is he in error who judges either that the thing is so or that it is not so, and is he right who judges both?" That is, in peritrope fashion, he can ask: Is it definitely true to say that the disputant has more of the truth? And the disputant will agree, retreat or remain silent. And if he agrees, Aristotle maintains, there will be something definite. And if there is something definite, the disputant's account admits of that which it should not. The disputant can retreat, agreeing that it is both true and false that he

has more of the truth. But then Aristotle can ask: Is it definitely true to say that it is both true and false that the disputant has more of the truth? And the disputant is pushed onto a regress. Or perhaps the disputant takes the onus of proof to be another's? He thinks everyone (himself included) is equally stating the truth and in error (1008b8–b11):

> But if all are alike, both wrong and right, one who is in this condition will not be able either to speak or to say anything intelligible; for he says at the same time both "yes" and "no." And if he makes no judgment but "thinks" and "does not think," indifferently, what difference will there be between him and a vegetable?

One might concede that the disputant appears by his own account to lack beliefs, for the sake of argument, and still think it possible to have other mental, non-vegetative states (Priest 2006, 39). Some animals appear to have mental characteristics, even though we might be reluctant to attribute propositional-attitudes to them. Aquinas suggests that Aristotle's point might be that "even brute animals have certain definite concepts," so that were the disputant accurately characterizing himself he would place himself below the animals. But there are many animals to which we would be loath to attribute definite concepts. Nevertheless, the advocate of the *strong position* takes everything to have every property. He will agree (and disagree) with everything. And, "Just as to stress all syllables is to stress none," to bear the same attitude to every proposition is to bear none. So, conversing with the disputant, who advocates the *strong position*, seems akin to conversing with a Joshua Tree.

II.5: THE SPRINGS OF ACTION

If the advocate of the *strong position* does not have any beliefs, then it seems that there are no advocates of the position. Being an advocate would require beliefs. And that there are no sincere advocates of the *strong position* is Aristotle's position. Furthermore, Aristotle, quite reasonably, thinks that action presupposes belief (Ross 1908, 1008b12–24):

> Thus, then, it is in the highest degree evident that neither any one of those who maintain this view nor anyone else is really in this position. For why does a man walk to Megara and not stay at home, when he thinks he ought to be walking there? Why does he not walk early some morning into a well or over a precipice, if one happens to be in his way? Why do we observe him guarding against this, evidently because he does not think that falling in is alike good and not good? Evidently, then, he judges one thing to be better and another worse. And if this is so, he must also judge one thing to be a man and another to be not-a-man, one thing to be sweet and another to be not-sweet. For he does not aim at and judge all things alike, when, thinking it desirable to drink water or to see a man, he proceeds to aim at these things.

Of course, intentional action may be thought to presuppose belief. It must be admitted that we speak of actions of reflex and involuntary actions, which may not presuppose belief. But the advocate of the *strong position* will leave intentional action unintelligible, if explanation requires something like the model of explanation Aristotle prefers. The practical syllogism provides the model for explaining action (1147a24–1147b1). And in that model the agent believes a universal, for example, everything sweet should be tasted, and a particular fact, for example, this thing is sweet. When a single opinion results thereby—and not accidentally, as when someone rambles off a proof while drunk—the agent immediately acts. The advocate of the *strong position*, however, does not recognize anything universal, as everything is contradictory. Indeed, as we've seen he lacks beliefs entirely. But even if we overlook this, behavior becomes unintelligible on the *strong position*. Were there an advocate of the *strong position*, he would forever be in the position of Buridan's ass or Aristotle's man in the De Caelo (295a32) who is "exceedingly hungry and thirsty, and both equally, yet being equidistant from food and drink, is therefore bound to stay where he is." Insofar as those with whom we would argue over the *strong position* are not paralyzed, it is plain that nobody sincerely believes the *strong position* (1008b19–24).

Still, we often distinguish between a person's theoretical commitments and his actual practice. Perhaps the advocate of the *strong position* would take the hit *ad hominem*, and admit to an inconsistency between his behavior and his position. It might also be argued that Aristotle's view of action is strongly Internalist—to have a reason to act is to be motivated to do so. Perhaps the advocate of the strong position could argue that the model is defective. And that to have a reason, either to *A* or to *not A* does not connect importantly to the motivation for an action. The advocate recognizes that his theoretical commitments, if Internalism is correct, should press him toward not *A-ing*, for any A. But he is unmoved by his theoretical reasons, and so rejects Internalism. But in rejecting Internalism, one is rejecting the view that *all* reasons are *in the right way* related to motivation. And so those who accept Externalism think there are *some* reasons that do not motivate. A Radical Externalism that entailed there is no reason that relates importantly to motivation would again leave behavior quite inexplicable.

II.6: THAT TO WHICH THE MORE AND THE LESS RELATE

In the final argument of Gamma's chapter 4 Aristotle seems to suggest that adopting the *strong position* renders unintelligible the idea that some opinions are better than others (Ross 1908, 1008b31–1009a1):

> Again, however much all things may be "so and not so," still there is a more and a less in the nature of things; for we should not say that two and three are equally even, nor is he who thinks four things are five equally wrong with him who thinks they are a thousand. If then they are not equally wrong, obviously one is less wrong and therefore more right. If then that which has more of any quality is nearer the norm, there must be some truth to which the more true is nearer.

One might worry about what is meant in saying one person has more truth than another. Priest reads the claim as suggesting that truth comes in degrees. And this idea he thinks can reasonably be resisted (and accepted?) by the advocate of the strong position (2006, 42). Aristotle might be read, however, as saying that we take some people to have better opinions than others. There are those who error and those who do so egregiously. A person who was arguing for wholesale relativism, for example, might be asked why some opinions are thought better than others?[31] The simple explanation is that some opinions approximate objective, determinate truth more than others. And Aristotle seems to believe that the advocate for the *strong position* is in a situation similar to that of the relativist. We've seen that one can be concerned about the idea that a comparison implies an independent standard. Helly is currently faster than Monty. But Helly is not closer, as she herself is the fastest skier, to some independent, superlative standard of fastness. Still, there is a mind-independent fact about Helly's being faster. And Aristotle might say something mutatis mutandis about the value of opinions.

One might also respond that it is the evidence for a claim more so than its correspondence to an unverifiable "reality" that accounts for one opinion's superiority over another's. But Aristotle as we've seen is willing to recast the question: *why is this one's evidence better than that one's?* Maybe one can appeal to assertability conditions in some contexts? Could one do so globally? In any case, a certain class of individuals who subscribe to the *strong position* are likely to reject the idea that there is a measure beyond man to which one may appeal. Perhaps that is why Aristotle moves in the next chapter, as will we, to consider the various positions that have led to the *strong position* and the rejection of the PNC.

II.7: THE USUAL SUSPECTS

Does the PNC hold up when it comes to the dialetheist's pet examples, that is, the Russell Set, or the Liar Sentence? Many have found that here as well we may provide, as Aristotle would put it, "further specifications that might be added against the dialectical difficulties." Russell's Paradox, for example finds resolution by understanding a ranking among sets in such a way that

sets at each rank have members only of preceding layers. This ensures that no set can be a member of itself. When we worry about whether *the set of all sets that are not members of themselves* is a member of itself or not, we do so needlessly, for no set is a member of itself.

What about the following kind of example? The Faculty Handbook that says every dossier must be read by the chairperson of the Promotions Committee, and that no person up for promotion may view her own dossier. What do we say if the chairperson happens to be up for promotion? She must, and yet must not, read her own dossier? Aristotle may not express metaphysical worry over constitutions, for example, that seem to both grant and deny a right. People assert contradictions. No real surprise that their documents should happen to contain them. It is only surprising if we don't act to eliminate them. As for those difficulties that are thought to issue in a need for Relevance Logics, I think Aristotle and David Lewis, at least on this matter, share a similar attitude (1988, 106): "Strictly speaking, an ambiguous sentence is not true and not false, still less is it both. It's various disambiguations are true or false simpliciter, however." To my mind, this rings reminiscent of Aristotle's recommendation that we can add "further specifications … against the dialectical difficulties." With that said, Aristotle does, like a good puzzle. And in Appendix A, I consider whether Aristotle was privy to something akin to the Liar Paradox, and, if so, what his reaction thereto might have been.

NOTES

1. The argument has been abruptly dismissed as "hopeless" by some (Priest 2006, 9), while others are more sanguine (Barnes 1969 and Wedin 2004).

2. It has been argued, moreover, that the *entire* series of arguments that relate to the PNC, in Aristotle's *Book Gamma*, are not intended to establish the PNC, but, rather, something *about* the PNC (Code 1988).

3. Lukasiewicz (1979, 52–53) takes Aristotle to fall prey to the error of "logicism in psychology," the converse of psychologism in logic. The idea seems to be that belief qua mental act is an action and actions are not the bearers of truth and falsity; so, to speak of the contradictories of beliefs is a category mistake. He also takes Aristotle to confuse logical consequence with psychological causation.

4. "I should state that the modal operators should not be understood as epistemic operators." Aristotle, as we will see, grounds his argument upon ontological considerations.

5. See Barnes (1969), Cohen (1986), and Wedin (2004).

6. See Mankinson (1965) and Priest (2006, 9).

7. I am limiting the argument here to beliefs that are actual in Aristotle's sense of the term; beliefs, we might say, that are currently being entertained. Aristotle's Indubitability argument fairs much worse if we allow the beliefs in question to be

beliefs that are not currently being entertained. It's a belief of mine that a symptom of tuberculosis is coughing, and it's a belief of mine that Barack Obama is the 44th president of the United States, satisfying the antecedent of (2.5). Of course, I never get around to believing the conjunction *A symptom of Tuberculosis is coughing and Barack Obama is the 44th president of the United States*, so the consequent of (2.5) goes unsatisfied.

8. In the idiom of the Supervenience Thesis.

9. For comparison: Jim has struck out in on-line dating so long that he believes there is no actual person for him. But he thinks his world might have gone otherwise, which is to say things might have turned out differently. So, he can't think anybody in the actual world is right for him, but he thinks there are possible worlds that are otherwise.

10. I have argued that the Indubitability argument is beset with difficulties.

11. But see Barnes (2007, 392–519) and Malink (2013, 19–114) for some of the controversies.

12. Though it might be that the argument from relativity, as stated by Alexander, involves a line of reasoning that is fallacious for reasons similar to those I am about to discuss.

13. Christopher Shields (1999) calls coincidental beings HFIO, hyper-finely individuated objects, and he maintains that Aristotle is not committed to their existence. They are analyzed by S. Marc Cohen (2013) in the following way. When one has a substance *s* (Socrates) and an accident A (sitting, pale), an accidental being is "*s* + A at *t*," for example, *Socrates seated at t*, or, more generally, *the thing seated at t*. And he points out that this analysis bears a striking resemblance to more contemporary analyses of events. On Jonathon Bennet's analysis (1988): "an event is an instantiation, at a time, of a property by a substance."

14. Dancy (1975, especially 59–73) has done more to reconstruct Aristotle's interlocutor than anyone. He suggests a connection between the disputant's thinking and the fallacy related to coincidental unities on page 120. But he may have less confidence than I display here as to the connection. He says (120): "In *Sophitici Elenchi* 5, he records two sophisms that, I think, the disputant, had he ever lived, would have appreciated. The analysis provides a sharp distinction between subject and predicates …." Dancy then discusses fallacies associated with coincidental unities. He locates the fallacy within close proximity of the Clincher, that is, 1007b1–6 (103). I believe I am here in agreement with him.

15. I am following Kirwan in making use of modern symbolic logic. In what follows I will speak of "predicates" in the sense used therein. At first glance, this may appear anachronistic. But we will see that there is an advantage in understanding the Clincher in metaphysically ecumenical terms, to the extent possible. And "predicate" in the sense I intend may be most neutral.

16. Kirwan (1993, 98) believes the inference is "valid in any normal modal system, provided that "→" is read as a sign of strict implication." Graham Priest concurs (2006, 18), believing the *de re* version is valid, provided we understand the conditional in the last inference to be strict, though he adds in a footnote that the accessibility relation in question needs to be at least reflexive. And about this he is right. A proof is easily constructed using the system Priest employs in his *Introduction to Non-Classical Logic* (2001).

17. Advocates of the *de dicto* exegesis include Kirwan (1993), Dancy (1975), Priest (2006, 25–26). Among those who read the necessity as governing the consequent, Irwin (1982), Cresswell (2004), Anscombe (1961, 39ff.), and Charles (2000, 376).

18. To be sure, I am taking the necessity to be *consequentiae* and not *consequentis* even though the terms are being taken as belonging to the essential variety.

19. Or, stand-ins, as it were, since Aristotle isn't going to accept that the definition is correct as it stands. Aristotle, we know, is willing to allow a name to refer across counterfactual situations, which, in relation to the actual state of affairs, are extremely foreign. On Ross's translation (1040a30–1040b1.):

> For they err not only by adding attributes after whose removal the sun would still exist, e.g. "going round the earth" or "night-hidden" (for from their view it follows) that if it stands still or is visible, it will no longer be the sun; but also by the mention of attributes which can belong to another subject, e.g., if another thing with the stated attributes comes into existence, clearly … <on their view it follows that> … it will be a sun; the formula therefore is general.

Of course, the argument, part of a polemical with the supporters of the Ideas, concerns not kinds, but eternals and individuals, and their lack of definability. Extending the reasoning, however, to include kinds is fairly natural. He is, it seems, assuming for the sake of argument that an individual, the sun, can be defined, and arguing that citing features thereof, which he takes to be contingent, will be neither necessary nor sufficient.

20. And, of course, to Saul Kripke's (2011) which, despite the metaphysically appealing views therein, is less useful at this point of the argument, where maximizing metaphysical neutrality is desirable.

21. Though apparently not so for Ayer! From Putnam's (1990, 64): "I … was presenting a theory which is related to Kripke's but which was stripped of metaphysical assumptions to the point where Carnap might have accepted it."

22. For illustration: A philosopher can analyze "x is the same y" as x and y belong to the same mereological sum of time-slices, or x and y belong to the same (discontinous) space-time region, or x is numerically identical to y, and so on. And something similar will go mutatis mutandis for sameness of kind as well.

23. See also Nathon Salmon's (1979) "How not to derive Essentialism from a Theory of Reference."

24. Dancy accepts a *de dicto* version and Anscombe the *de re*.

25. As Dancy points out, Aristotle has not established that the A-Clincher can be employed with every accidental predicate (108): "A great deal of work would be needed to make it even faintly plausible that this distinguishing feature of the word 'tall' is generalizable over the whole class of accident-words." I think that Aristotle can place the burden on the disputant. The disputant owes a d*efiniens* that admits of substitution with its *definiendum salva veritate* to insure that the content of the predicate is the same when affirmed as when denied of a subject, lest the disputant's view turn on homonymy.

26. Translation is John Ackrill's (1963).

27. David Charles (2000, 377) reads Aristotle as making use of substance terms in the Clincher with an auxiliary argument to the effect that predication is impossible

without kinds. He indicates in a footnote that Aristotle suggests that any predication lacking a substance term may be reduced to one that does. And that once this reduction occurs the argument can resume as before. Charles doesn't indicate how this reduction will go, but he might appreciate Dancy's point, that the argument I'm calling the A-Clincher might make plain the need for a sortal class. In contrast, I think that Aristotle can simply use the A-Clincher for an interlocutor who stubbornly refuses to countenance predications of the non-accidental variety, providing an error-theory of her mistake, giving the disputant reasons for considering there to be a need for a sortal class. Charles' reconstruction, unlike mine appears to take the necessity to be *consequentis* and, curiously, he indicates that the unit the quantifier ranges over is a kind and not its instances (376 see notes 8 and 10 as well). If the argument does not extend to its instances, it seems woefully incomplete. But perhaps he sees a way of extending it. A discussion of the values of Aristotelian quantifiers in syllogistic can be found in Malink (2013, 34–73) and Barnes (2008, 386–419).

28. I owe the example to Scott O'Connor.

29. See *De Caelo* 286a25 as well, as Barnes suggests.

30. With respect to self-identity, this might be Wittgenstein's point in the *Tractatus* (5.5301) where he says "Roughly speaking: to say two things are identical is nonsense, and to say of one thing that it is identical with itself is to say nothing." Kant argues that "being is obviously not a real predicate," in *The Critique of Pure Reason*, A598/B626, in the course of his critique of the Ontological Argument for God's existence.

31. Kirwan seems to think that something similar goes for skepticism with the pithy note (105): "Similar arguments have been brought in modern times against the skeptical thesis that everything is uncertain."

Chapter 3

Truth, Being, and Perspective

Having provided a defense of the PNC, Aristotle attempts to provide an etiology of the manner by which his predecessors came to deny the principle, with the aim of showing they were led astray.[1] Aristotle's work in this section of *Book Gamma* is beset with controversies of the philosophical and exegetical variety. And this is much as one might expect, as Aristotle is taking on nothing less than the relationship between mind and world.

III.1: TRUTH, PERSPECTIVE, AND THE PNC

Book Gamma's Chapter 5 opens with a reference to the thesis of Protagoras, who is described as advancing a fairly radical view of truth (and belief), wherein it is held that all opinions are true (Ross 1908, 1009a6–16):

> From the same opinion proceeds the doctrine of Protagoras, and both doctrines must be alike true or alike untrue. For on the one hand, if all opinions and appearances are true, all statements must at the same time be true and false. For many men hold beliefs in which they contradict one another, and all think those mistaken who have not the same opinion as themselves; so that the same thing must be and not be. And, on the other hand, if this is so, all opinions must be true; for those who are mistaken and those who are right are opposed to one another in their opinions; if, then, reality is such as the view in question supposes, all will be right in their beliefs. Evidently, then, both doctrines proceed from the same way of thinking.

The denial of the PNC and the doctrine that every opinion is true are said to go hand in hand. How is this so? It seems that a bi-conditional is being argued for, as the conditions for being true or false co-vary. We are told that the view

that contradictories hold of a subject entails the doctrine that all opinions are true and that the doctrine that all opinions are true entails that contradictories hold of a subject. Aristotle seems to be referencing what we called the *strong position* in Chapter 2, namely that every subject *has* every contradictory pair. There is some quantificational ambiguity here, but the contours of a line of reasoning can be discerned. Beginning with the doctrine of Protagoras, so-called, and moving therefrom to the denial of the PNC, might provide some aid, when it comes to arguing there and back again:

(1) For any given x and F, anyone with the opinion that x is F has a true opinion and anyone with the opinion that x is not F has a true opinion.
(2) If for any given x and F, anyone with the opinion that x is F has a true opinion and anyone with the opinion that x is not F has a true opinion, then anyone with the opinion that x is F, for any given x and F, is correct and anyone with the opinion that x is not F is correct.
[$1,2_{mp}$] (3) It is correct, for any given x and F, that x is F and it is correct that x is not F.
[$1–3_{cp}$] (4) If for any given x and F, anyone with the opinion that x is F has a true opinion and anyone with the opinion that x is not F has a true opinion, then for any given x and F, it is correct that x is F and it is correct that x is not F.

That might be what Aristotle is thinking in terms of one direction of the biconditional. Here is an interpretation for the opposite direction:

(5) It is correct, for any given x and F, that x is F and it is correct that x is not F.
(6) If it is correct that such-and-such, anyone with the opinion that such-and-such has a true opinion.
[$5,6_{mp}$] (7) For any given x and F, anyone with the opinion that x is F has a true opinion and anyone with the opinion that x is not F has a true opinion.
[$5–7_{cp}$] (8) If it is correct, for any given x and F, that x is F and it is correct that x is not F, then, for any given x and F, anyone with the opinion that x is F has a true opinion and anyone with the opinion that x is not F has a true opinion.

We then conjoin (4) and (8) and we have what looks like the equivalence Aristotle is referencing. One might rightly worry that this line of reasoning involves some equivocation with regard to the notion of truth. On the view of truth in (1), one might argue, there is no discernible difference between truth and opinion. To have an opinion is to be correct, and "it is correct" just means "there is an opinion that such-and-such." But suppose that (6), for example, were to have that same sense, then (6) could be read as follows:

(6a) If there is an opinion that such-and-such, anyone with the opinion that such-and-such has a true opinion.

Premise (6) does not depart significantly from the way that Tarski (1944) would have it: "Such-and-such" is true only if such-and-such. And (6) will be more widely received, given the idea that this use of "correct" presupposes the possibility that one might be incorrect. To stress every syllable is to stress none, as the saying goes. That is, many will find (6) plausible because it allows for a possibility that (6a) does not: that it might be correct that such and such, despite opinions to the contrary. And given that the truth-conditions for "true" vary throughout, the argument might well be thought to turn upon equivocation. Premise (1) depends upon a notion of truth where opinion is infallible. And the credibility of premise (6) is significantly diminished if it shares a dependence on the same notion of truth.

One might also question whether or not the person who opines of x that x is *only* F has a true opinion (or neither F nor not F). Suppose *ad arguendo* that (1) and (5) are true, and suppose further that Helly believes that Monty is *not* both fast and not fast. Helly's opinion, by (5), ex hypothesi, is untrue. But, by (1), ex hypothesi, all opinions are true. Of course, this is a peritrope argument to which Aristotle is privy and he is also privy to the idea that the advocate of the *strong position* can accept this (1008a30–1008b2). So, one can take the argument concerning the equivalence as it is set out in chapter 5 of *Book Gamma* as an etiology of the reasoning of those who are in error. At the same time, the use to which Aristotle means to put this material equivalence is not obvious. He goes on to say (Ross 1908, 1009a16–21):

> But the same method of discussion must not be used with all opponents; for some need persuasion, and others compulsion. Those who have been driven to this position by difficulties in their thinking can easily be cured of their ignorance; for it is not their expressed argument but their thought that one has to meet. But those who argue for the sake of argument can be convinced only by emending the argument as expressed in speech and words.

There is the suggestion here that Aristotle takes the equivalence to amount to a difficulty for an advocate of the *strong* position. *If you believe that, you'll reside in the same camp with Protagoras,* as it were. Many advocates of the *strong* position may not have thought their position reducible to the position that all opinions are true, believing it less trivial. With this in mind, the "difficulties in their thinking can easily be cured." The cure for those who "argue for the sake of argument" will be different in kind. As we will see, the cure for those who sincerely arrive at the position, will involve a better understanding of what one may take away from observation of the sensible world.

III.2: COSMOLOGY AND CONTRADICTION

The first of those mentioned, among those who sincerely feel the difficulties, are Democritus and Anaxagoras. A great deal of thought can be organized, perhaps over-simplified, around the principle nowadays referred to as the Principle of Sufficient Reason. We meet up with the principle, or something related thereto, in Aristotle's discussion of the role it plays in the thought of his predecessors, here in chapter 5 of *Book Gamma* (Ross 1908, 1009a25–30):

> If, then, that which is not cannot come to be, the thing must have existed before as both contraries alike, as Anaxagoras says all is mixed in all, and Democritus too, for he says the void and the full exist alike in every part, and yet one of these is being and the other non-being.

The Principle of Sufficient Reason is referenced by the idea that *that which is not, cannot come to be*. And it plays a pivotal role in *The Paradox of Generation*.

Claim-I: Something cannot come into being from nothing.
Claim-II: There are instances of things coming into being.
Claim-III: Coming into being involves a transition from not being to being.

Claim-I is the principle of sufficient reason. Claim-II is at least part of the manifest image of the world. We experience things coming into existence. Prior to 2009 Helena did not exist. By March 2009, Helena existed, but Monica, who now exists, did not. Claim-III involves the idea that something that exists cannot come into being, as it already has it.

Democritus and Leucippus are thought to deny Claim-III (*De Generatione et Corruptione*, Joachim 1922, 325a23–34):

> Leucippus, however, thought he had a theory which harmonized with sense-perception and would not abolish either coming-to-be and passing-away or motion and the multiplicity of things …. The many move in the void (for there is a void); and by coming together they produce coming-to-be, while by separating they produce passing-away. Moreover, they act, and suffer action when they chance to be in contact (for they are not thereby one), and they generate by being put together and becoming intertwined.

Anaxagoras, too, seems to deny that (what we call) generation requires coming to be ex nihilo. According to the account received from Theophrastus (Graham 2010, 293):

> Anaxagoras the son of Hegesibulus, of Clazomenae, sharing in the philosophy of Anaximenes, first changed the opinions about principles by supplying the missing

> cause, making the corporeal principles infinite. For all the homoeomeries, such as water, fire, or gold, are ungenerated and imperishable, but they appear to come to be and perish only by congregation and segregation, since everything is in everything, though each thing is characterized by what predominates in it.

The picture that one can take away is that a reconfiguration of material lies behind what we take to be generation and destruction. And Anaxagoras and Democritus seem to be read by Aristotle as taking contraries to be bound up with one another, when he says, moreover: "[A]s Anaxagoras says all is mixed in all, and Democritus too, for he says the void and the full exist alike in every part, and yet one of these is being and the other non-being." Anaxagoras, as it were, takes something that is predominantly fire to contain a putative opposite such as water, insofar as it contains everything. For any perceptible P, P has everything else in it, and thus contains the opposite of P. This view meets up with the *strong position*, the view that everything has every contradictory. And given that the views associated with Protagoras precipitated the current discussion, it would seem that it is the *strong position* that is currently under consideration.[2]

However, the view associated with Democritus is said to imbue every perceptible thing with non-being, in terms of void, and being, insofar as the perceptible things are constituted by atoms.[3] The only contraries referenced are being (non-void) and non-being (void). This might get us to the view that every perceptible being has some contraries, but it does not seem to entail that every subject has every contrary, and much less every contradictory. One might take *being* and non-being as so general to include every contrary, though we are told specifically that non-being is void and that *being* is atomic. There is, of course, an eliminativist picture associated with Democritus, captured in the following reductionist creed (Graham 595):

> For by convention, [Democritus] says, sweet, by convention hot, by convention cold, by convention color, but in reality atoms and the void.

So perhaps one could think that the only *real contraries* we detect can be reduced to void and non-void. Every perceptible object would have every real property. But the atoms themselves fall into categorical description, so this is a stretch. In any case, Aristotle's response to these cosmologists runs as follows (Ross 1908, 1009a30–36):

> To those, then, whose beliefs rest on these grounds, we shall say that in a sense they speak rightly, and in a sense they err. For "that which is" has two meanings (τὸ γὰρ ὂν λέγεται διχῶς), so that in some sense a thing can come to be out of that which it is not (ὥστ᾽ ἔστιν ὃν τρόπον ἐνδέχεται γίγνεσθαί τι ἐκ τοῦ μὴ

> ὄντος), while in some sense it cannot, and the same thing can at the same time be and not be—but not in the same respect. For the same thing can be potentially at the same time two contraries (δυνάμει μὲν γὰρ ἐνδέχεται ἅμα ταὐτὸ εἶναι τὰ ἐναντία), but it cannot actually (ἐντελεχείᾳ δ᾽ οὔ).

There is an appeal to the distinction between potentiality and actuality. He wants to say that these cosmologists were right to think nothing comes to be ex nihilo. They were wrong to think that nothing comes to be F from not being F. Something becomes a table, not ex nihilo, but, rather, out of something that is suitable for being a table, such as wood. Few are surprised by the carpenter's thought that a piece of wood is potentially a table and potentially not a table. Many begin to worry when the carpenter considers a piece of wood to be actually and not actually a table.

Having pointed out that Democritus and Anaxagoras have overlooked certain distinctions related to generation and corruption, Aristotle caps off his response by indicating that they have overlooked the cases where generation and destruction are not present (Ross 1908, 1008a35–1009b1):

> And again we shall ask them to believe that among existing things there is another kind of substance to which neither movement nor destruction nor generation at all belongs.

The point of the remark is simple enough. There are some things that not only do not admit of generation and construction, they don't admit of change, and, thus, couldn't, as Alexander suggests (*vide infra*), have contraries. So, an argument on behalf of the *strong position*, which relies upon contraries, will be ineffective for beings such as these. At the very least, these will not admit of contradictories. Alexander takes divine realities to be of this kind (Madigan 2013, 92):

> In addition, he says we think that these people should not think that the only beings are those involved in coming-to-be and perishing, but also that there are, among beings, certain ungenerated and imperishable and unmoved beings, to which contraries could not belong, given that they do not change at all and that nothing comes to be from them. The divine realities would be of this kind.

Aquinas, too, takes Aristotle to be referencing what moves but is unmoved (668), and he refers us to *Physics* 258b5 accordingly. Aristotle may have in mind "another kind of substance to which neither movement nor destruction nor generation at all belongs." As I suggested in Chapter 1 there may be some reason for thinking the Unmoved Mover to be a paradigm of consistency. So, the view put forth by Alexander and Aquinas is not out of place. Reference to the Unmoved Mover provides a counterexample to the *strong position*, and, if

we are to model the *being* of separate substances that admit of change thereupon, this is some reason for thinking that the advocate of the *strong position* will cast his net too broadly in relation to these as well.[4]

III.3: PERCEPTION AND RELATIVISM

Aristotle seems to have an opponent who is persuaded by an argument that we may denote as *The Paradox of Decidability*:[5]

(1) It appears that P.
(2) It appears that ~P.
(3) There is no objective reason to prefer one appearance over the other.
So: (4) There is no fact of the matter whether P or ~P.
Therefore: (5) P is no more true than ~P.

However, if bivalence holds, and the PNC, then so too the principle of excluded middle, and exactly one of the disjuncts here is true: P versus ~P. Aristotle is attempting to respond to those who deny the PNC. He will defend the principle of excluded middle within a few more pages of *Book Gamma*, as we will see, in the course of so doing. Some of those whom he is discussing seem to hold onto bivalence. The person who thinks all opinions are true appears to believe that all statements are true *or false*, given an inclusive use of the disjunction. Given their rejection of the PNC, however, they are not obviously obligated to except excluded middle, that either P or ~P is true at the exclusion of the other.

It is difficult to get a firm handle upon the view Aristotle opposes because, not unlike Plato in the *Theaetetus*, he thinks there is a general mode of thinking, which models knowledge on the process of sensation, which is commonly shared, even though manifested in various ways. Aristotle's attempt to place his predecessors within the same framework can seem fairly procrustean. And it seems that he moves freely from criticizing the general view to the peculiarities of the various philosophies to which he attributes the view.

In response to the Paradox of Decidability, one might ask whence preferences for one belief derive if they do not stem from objective reasons. Certainly, the way things seem is not something that comes about ex nihilo. One might appeal to non-epistemic, or pragmatic advantages for the preferences in question. But Aristotle seems concerned to emphasize how relativism itself is not very practical (Ross 1908, 1009b33–b39):

> And it is in this direction that the consequences are most difficult. For if those who have seen most of what truth is possible for us (and these are those who

> seek and love it most)—if these have such opinions and express these views about the truth, is it not natural that beginners in philosophy should lose heart? For to seek the truth would be to pursue flying game.

The reference to flying game provides a transition to discuss the views of Heraclitus and Cratylus.[6] The merely sensible, transitory and fleeting, provides us with nothing we can objectively pursue (Ross 1908, 10101a):

> But the reason for this opinion is that while these thinkers were inquiring into the truth of that which is, they thought that which is was identical with the sensible world; in this, however, there is largely present the nature of the indeterminate.

Heraclitus and Cratylus are perhaps the clearest illustration, as they are thought to reject the idea that things come into being, as the flux does not admit of being. Given the inexorable, rapid, and "universal" change that characterizes the Heraclitean flux, the continuity required for affirmation "is" not present on their view. Aristotle argues that their position leads to its denial. They leave nothing into which things may change, so everything is at rest (1010a32–b1). (Perhaps there is a note of irony in the thought that they end up in a position similar to the Eleatics, who also deny the second claim of *The Paradox of Generation*.) But he thinks of the followers of Heraclitus as a vivid example of how limiting one's ontology to the perceptible leaves us cognitively unmoored.

Those who limit ontology to the sensible are left with the impression that sense-experience provides us with what is the case. And because the testimony provided on the basis of sense-experience frequently leaves matters indeterminate or contradictory, these are left with the impression that our ontology should be similarly described.

III.4: SENSE AND OBJECT

Having addressed specifically the views he attributes to Anaxagoras and Democritus, Aristotle attempts to provide a general reason for the confusion that has led to the remarkable view that truth is to be identified with appearance. He states (Ross 1908, 1009b1–b10):

> And similarly some have inferred from the sensible world the truth of appearances. For they think that the truth should not be determined by the large or small number of those who hold a belief, and that the same thing is thought sweet by some who taste it, and bitter by others, so that if all were ill or all were mad, and only two or three were well or sane, these would be thought ill and

> mad, and not the others. And again, many of the other animals receive impressions contrary to ours; and even to the senses of each individual, things do not always seem the same. Which then of these impressions are true and which are false is not obvious; for the one set is no more true than another, but both are alike?

The argument here, as Anthony Kenny has shown, has a similar starting-point to a mode of arguing which A.J. Ayer called *The Argument from Illusion*. Kenny usefully organizes the main positions taken in relation to this starting-point around four propositions such that acceptance of any three should result in a rejection of the fourth.

(1) S indicates that *P*
(2) S indicates that ~*P*
(3) What S indicates is true.
(4) Not both *P* and ~*P*

A cursory examination of the positions Kenny locates in relation from (1) to (4) will provide a small taxonomy of positions serving as a means of contrast or context within which to place Aristotle's outlook. The most problematic case would seem to be the one where the same observer says that *P* and also that ~*P*. So, we can start out by supposing that the observer in premise (1) is the same as the observer in premise (2). Let *P* have for its content something akin to *the oar is straight.* Kenny reads a Cartesian skeptic, and indeed Descartes himself, perhaps at one moment or another, as accepting (1), (2), and (4), and thereby rejecting (3). Kenny refers the reader to the Sixth Meditation. He might have in mind the following passage (2013, 76, tr. Cottingham):

> Later on, however, I had many experiences which gradually undermined all the faith I had in the senses. Sometimes towers which had looked round from a distance appeared square from close up; and enormous statues standing on their pediments did not seem large when observed from the ground. In these and countless other such cases, I found that the judgments of the external senses were mistaken (et talibus aliis innumeris in rebus sensuum externorum judicia falli deprehendebam).

Reading Descartes as rejecting (3) might overplay his hand. Descartes does at times speak as if beliefs that are formed by sense-experience should be considered false for the purpose of maintaining methodical doubt, as he does in the First Meditation (2013, 22 tr. Cottingham): "In view of this, I think it a good plan to turn my will in the opposite direction … by pretending for a

time that these former opinions are utterly false and imaginary." But perhaps Descartes would prefer to emend (3) to something akin to (3_{cs}), as one might think that accepting (1), (2), and (4), with a wholesale rejection of (3) pushes one in the direction of rejecting the law of excluded-middle.

(3_{cs}) It is not known that what S indicates is true.

The Protagorean, according to Kenny (186), accepts (1), (2), and (3) "as showing the falsity of (4)." One might wonder about attributing this line of reasoning to the Protagorean, as one will be puzzled by the inconsistent quartet only if one finds inconsistency problematic. Furthermore, one might question whether the person who takes all beliefs to be true takes (4) to be false. Presumably the Protagorean in question is one who accepts the *strong position*. Will this entail that each claim in the quartet is both true and false? Of course, if the Protagorean position is a position, few believe the reasoning that underwrites it particularly clear, and at least here one has a model of what Aristotle is attributing to the Protagorean.

Kenny refers us to Berkeley and A.J. Ayer as advocates of a sense-data theory of perception. A.J. Ayer's account of the Argument from Illusion runs as follows (1956, 94–5):

> If we examine the reasons which philosophers have given in favor of the view that only sense-data are directly perceived we find that they mainly rest upon what is known as the argument from illusion. The starting point of this argument is that objects appear differently to different observers, or differently to the same observer under different conditions, and further, that the way in which they appear is causally dependent upon extraneous factors such as the presence of light, the position of the observer, or the state of his nervous system.

From different angles or perspectives the coin appears round or elliptical, and there are a number of ways or degrees in between the extremes which the appearances may take. Let the number be definite, say twelve. Suppose *ad arguendo* that one of the appearances among the many is the "right one." We can explain the discrepancy by saying that the physical coin is perceived indirectly, *pace* Berkeley, as the sense-datum, which *is* perceived directly, represents the coin. And as Ayer argues, there will be nothing to distinguish the right appearance from the others except a slight aspect. There will be no way to maintain that the appearances are, as he puts it, generically distinct (96). If we take eleven of the appearances to involve a case of perceiving the coin indirectly, by analogy, we should say the same for the "right one."[7] So where does this put someone like Ayer in relation to Kenny's inconsistent quartet? The sense-data theorist is going to accept (1), (2), (3), and (4), provided that (1) and (2) are read as (1_{sd}) and (2_{sd}):

(1_{sd}) S indicates there is a sense-datum SD_1 (with content straight oar)
(2_{sd}) S indicates that there is a sense-datum SD_2 (with content bent oar)

Because $SD_1 \neq SD_2$ there is no contradiction in what is indicated by S in (1) and what is indicated by S in (2).

Where, in contrast, should Aristotle be placed in relation to the inconsistent quartet? Aristotle is going to make qualifications of his own. In a passage where the text is thought to be less than ideal, Aristotle says the following (Ross 1908, 1010b1):

> Regarding the nature of truth (περὶ δὲ τῆς ἀληθείας), thus not everything which appears is true (ὡς οὐ πᾶν τὸ φαινόμενον ἀληθές). In the first place, even if perception is not false (εἰ ἡ αἴσθησις μὴ ψευδὴς) indeed concerning what pertains (τοῦ γε ἰδίου ἐστίν) to itself, nevertheless imagination is not the same as sensation (ἀλλ᾽ ἡ φαντασία οὐ ταὐτὸν τῇ αἰσθήσει).

The passage is confusing because Aristotle is thought to be arguing that not every perception is true. However, he seems to concede that perception is not false so long as the faculty responsible for the perception is the right faculty for the job. And this can seem to provide some support, prima facie, for the view he is arguing against. The special objects of four senses are listed at *De Anima* II.6, 418a12: "sight of color, hearing of sound, taste of flavor, while touch has many different" objects. And at *De Anima* III.3, 427b6, Aristotle, in the course of distinguishing thinking from perceiving, says the following (Smith 1931, my italics):

> That perceiving and understanding are not identical is therefore obvious; for the former is universal in the animal world, the latter is found in only a small division of it. Further, thinking is also distinct from perceiving—I mean that in which we find rightness and wrongness—rightness in understanding, knowledge, true opinion, wrongness in their opposites; *for perception of the special objects of sense is always free from error*, and is found in all animals, while it is possible to think falsely as well as truly, and thought is found only where there is discourse of reason. For imagination is different from either perception or discursive thinking, though it is not found without sensation, or judgment without it. For imagining lies within our own power whenever we wish (e.g. we can call up a picture, as in the practice of mnemonics by use of mental images), but in forming opinions we are not free: we cannot escape the alternative of truth or falsehood.

Kenny argues that Aristotle would distinguish between the faculties that are indicating that *P* or ~*P* in (1) and (2), respectively (195). If we have conflicting reports, one possibility to be considered is whether the reports issue from

the same or different faculties. Suppose they are different as in (1_a) and (2_a)

(1_a) Faculty F indicates that *P*
(2_a) Faculty G indicates that ~*P*

Then Aristotle will recommend that there is a sense faculty most fit to render judgment, a highest court of appeal, as he does here in chapter 5 of *Book Gamma* (Ross 1908, 1010b15–20):[8]

> And again, among sensations themselves the sensation of a foreign object and that of the special object, or that of a kindred object and that of the object of the sense in question, are not equally authoritative, but in the case of color, sight, not taste has the authority, and in the case of flavor, taste, not sight; each of which senses never says at the same moment of the same object that it at the same time is so and not so.

If however we have contradictory reports issuing from the same faculty, Aristotle is going to recommend that we prefer the report that is delivered in the most favorable situation. The oar looks straight when out of water, and it looks bent when submerged. But we have reason to think our faculty of sight works better when the medium is air rather than when the medium is water (Ross 1908, 1011a29–1011b1):

> For to those who for the reasons named above say that what appears is true, and therefore that all things are alike false and true, for things do not appear the same to all men or always the same to the same man, but often have contrary appearances at the same time (for touch says there are two objects when we cross our fingers, while sight says there is one)—to these we shall say "yes, but not to the same sense and the same part of it and in the same way and at the same time," so that what appears *is* under these qualifications true.

Now what about the case where conflicting reports issue from the same faculty even as the faculty in question is employed under ideal conditions? Aristotle's view seems to contrast with Ayer's. While, Aristotle, like Ayer, will put certain, albeit different, qualifications upon (1) and (2), he seems to think that conflicting reports conveyed by the same faculty, within ideal conditions, are not possible. He would prefer either to explain the conflict as resulting from hostile epistemic conditions, for example, one is far from the tower, suffering from jaundice, dreaming, and so on, or to maintain that the conflict may be resolved by recognizing the authority of a faculty over its object or the favorability of its exercise in one set of conditions over another (Ross 1908, 1010b3–7):

> Again, it is fair to express surprise at our opponents for raising the question whether magnitudes are great, and colors of such a nature, as they appear to people at a distance, or as they appear to those close at hand, and whether they are as they appear to the sick or to the healthy.

All of this can be seen as Aristotle rejecting the third premise of the Paradox of Undecidability, to wit, that when it comes to conflicting reports, there is no higher court to which one may appeal in deciding which report it is better to accept.

III.5: THE CONTRARY COUNTEREXAMPLE

Aristotle continues with an argument that appears to concede that certain experiences are incorrigible, and, on the basis of that concession he argues that there is a clean counterexample to his opponent's view. Here is his argument (Ross 1908, slightly modified, 1010b20–29):

> But not even at different times does one sense disagree about the quality, but only about that to which the quality belongs. I mean, for instance, that the same wine might seem, if either it or one's body changed, at one time sweet and at another time not sweet; but at least the sweet (ἀλλ᾽ οὐ τό γε γλυκύ), such as it is when it exists, has never yet changed (οὐδεπώποτε), but one is always right about it (ἀλλ᾽ ἀεὶ ἀληθεύει περὶ αὐτοῦ), and that which is to be sweet is of necessity of such and such a nature. Yet all these views destroy this distinction (καίτοι τοῦτο ἀναιροῦσιν οὗτοι οἱ λόγοι ἅπαντες), and leave nothing to be of substance (ὥσπερ καὶ οὐσίαν μὴ εἶναι μηθενός), and thus nothing is out of necessity; for the necessary cannot be in this way and also in that, so that if anything is of necessity, it will not be "both so and not so."

The argument has a Platonic air.[9] We are told that sweet things sometimes appear otherwise, but that *the sweet* (τό γε γλυκύ), such as it exists, is never otherwise. To my mind the argument rings a bit reminiscent of an argument in Plato's *Phaedo* (74b–c):

Soc: Look at it this way: Do not equal stones and sticks, while remaining the same, appear to one to be equal and to another unequal?
Sim: Certainly, they do.
Soc: But what of the equals themselves (αὐτὰ τὰ ἴσα)? Have they ever appeared (ἐφάνη) unequal (ἄνισά) to you, or Equality (ἡ ἰσότης) to be Inequality (ἀνισότης)?
Sim: Never (οὐδεπώποτέ), Socrates.

For Socrates and Simmias the equal things sometimes appear otherwise, while the equal never (οὐδεπώποτέ) appears otherwise. And for Aristotle the

sweet itself never (οὐδεπώποτε) changes its appearance, even though the things that are sweet sometimes appear not sweet. The argument Aristotle seems to have in mind may be sketched as follows:

(1) S*weet things* sometimes appear not sweet.
(2) The sweet, whenever it is present, never appears not sweet.

An application of the Indiscernability of Identicals, then, provides one with a distinction between the contraries a thing may have and the thing that may have the contraries.

So: (3) *The sweet* is something different from the things that tend to fall under the description *sweet*.

One can, of course, worry about this kind of inference. Compare the structure here with an argument such as the following:

(1a) The Morning Star sometimes appears to be different from the Evening Star.
(2a) The Evening Star never appears to be different from the Evening Star.
So: (3a) The Evening Star is something different from the Morning Star.

The Morning Star might well appear to Helly to be different from the Evening Star, even though the Evening Star never appears to be different from the Evening Star. But we would not want to say the Morning Star is numerically distinct from the Evening Star on the basis of these appearances. But perhaps the argument here is not sufficiently analogous to Aristotle's. His opponent believes that contradictory reports about, for example, the sweet are provided by sense-experience. The opponent overlooks a distinction between, moreover, that which may have the property of being sweet and the property which it may have. Having distinguished the sweet for the objects to which it is attributed, Aristotle maintains that disagreement about sweetness is confined to the objects to which the sweet is attributed, and does not extend to the sweet itself (1010b20):

> But not even at different times does one sense disagree about the quality (ἀλλ᾽ οὐδὲ ἐν ἑτέρῳ χρόνῳ περί γε τὸ πάθος ἠμφισβήτησεν), but only about that to which the quality belongs (ἀλλὰ περὶ τὸ ᾧ συμβέβηκε τὸ πάθος.).

Having distinguished between the quality and that which has it, Aristotle is ready to say something about the quality itself.

(4) If the sweet is distinguished from sweet things, the sweet is something *such as it is whenever it is* which has never yet changed and is something about which one is always right.

So: (5) The sweet is something *such as it is whenever it is* which has never yet changed about which one is always right.

If Aristotle can get to (5), he has an example of something about which sense-experience never provides conflicting reports. And it is the conflicting reports provided by sense-experience that move his opponents to the position they occupy. He also seems to have something that does not admit of contradictory properties—to wit, properties themselves. So, there is a counterexample to the *strong position*.

But why does Aristotle think, in accordance with (4), that distinguishing the sweet from sweet things requires understanding the sweet as something *such as it is whenever it is* (οἷόν ἐστιν ὅταν ᾖ) which has never yet changed (οὐδεπώποτε μετέβαλεν), about which one is always right (ἀλλ᾽ ἀεὶ ἀληθεύει περὶ αὐτοῦ)? Here are a couple possibilities:

Call this reading (R1): When Aristotle characterizes the sweet as something "one is always right about it" (ἀλλ᾽ ἀεὶ ἀληθεύει περὶ αὐτοῦ), he understands the sweet to be something we are always right about, in a sense similar to the sense in which we are inclined to think one who is in pain is thus in pain incorrigibly. We might mistakenly experience the wine as sweet, but we never mistake our subjective experience of sweet as a subjective experience of non-sweet.

Call the following reading (R2): In order to maintain that the wine appears at one time sweet, and, at another not sweet, the opponent presupposes that at one time the wine appears sweet. In order to make sense of the idea that the wine appears at one time sweet, we need to understand *the sweetness* that the wine appears to have univocally. And we need, thus, to think that there is an essence of sweetness. But then *the sweet* is something *such as it is whenever it is* (οἷόν ἐστιν ὅταν ᾖ) which has never yet changed (οὐδεπώποτε μετέβαλεν), about which one is always right (ἀλλ᾽ ἀεὶ ἀληθεύει περὶ αὐτοῦ). R2 is perhaps suggested by the way that Aristotle closes the argument:

> Yet all these views destroy this distinction (καίτοι τοῦτο ἀναιροῦσιν οὗτοι οἱ λόγοι ἅπαντες), and leave nothing to be of substance (ὥσπερ καὶ οὐσίαν μὴ εἶναι μηθενός), and thus nothing is out of necessity; for the necessary cannot be in this way and also in that, so that if anything is of necessity, it will not be "both so and not so."

The idea seems to be that an opponent might double-down, so to speak, and say that the sweet is also not sweet, but then, as they destroy the distinction, we no longer know what they meant when it was said the wine appeared

sweet. Now it is somewhat surprising to see Aristotle invoking the category of substance here, given, moreover that Aristotle began the discussion treating *the sweet* as something that belongs to the category of quality or affect (1010b20):

> But not even at different times does one sense disagree about the quality (ἀλλ᾽ οὐδὲ ἐν ἑτέρῳ χρόνῳ περί γε **τὸ πάθος** ἠμφισβήτησεν), but only about that to which the quality belongs (ἀλλὰ περὶ τὸ ᾧ συμβέβηκε τὸ πάθος.).

R1and R2 make sense of the idea that we are always right about the sweet. R1 might make better sense of the idea that Aristotle treats the sweet as a quality or affect.[10] R2 might meet up with the suggestion near the end of the argument that the sweet is a substance. But then the sweet is apparently abstract and a substance, which fits neatly neither into the categories of primary nor secondary substance. In fact, the sweet appears to take on an ontological status that is frequently associated with Plato. Maybe Aristotle is thinking that the sweet has an essential aspect to it, so that if the opponent doubles-down, as it were, he is doing something analogous to rejecting secondary substances, as a secondary substance is a τὸ τί ἦν εἶναι.

III.6: IDEALISM, NIHILISM, OR REALISM?

Aristotle believes, moreover, that those who accept relativism and the *strong position* are led to their view by a provincial ontology countenancing merely that which is experienced by sense. The final argument of chapter 6 of *Book Gamma* seems to suggest that his opponents are committed to something like Idealism, and that, furthermore, Idealism entails the possibility of Nihilism (ROT, 1010b30–32):

> And, in general, if only the sensible exists, there would be nothing if animate things were not (ὅλως τ᾽ εἴπερ ἔστι τὸ αἰσθητὸν μόνον, οὐθὲν ἂν εἴη μὴ ὄντων τῶν ἐμψύχων:); for there would be no faculty of sense (αἴσθησις γὰρ οὐκ ἂν εἴη).

The reasoning is here complicated by the fact that some of the claims are expressed in the optative, giving us translations that deal in counterfactual conditions. As an initial gloss, the argument seems to be that if it were the case that there are only sensible things, and it were the case that there are no souls to sense, nothing would exist, and this consequent is thought to be unwelcome.

Aristotle seems to be using "sensible" as "directly sensible." An advocate of a Representational Theory of Perception (RTP)—Aristotle himself seems

to be an advocate as we shall see in a moment—might be inclined to understand perception in the following way. We sometimes notice after images, for example, as we avert our gaze from an object or when the object of our gaze is abruptly removed. This suggests that what we directly experience is a sensation. Most of us want to say that we experience more than sensations, and the advocate of the RTP agrees, maintaining that because our sensations represent things such as houses, mountains, and rivers, we experience these as well, albeit indirectly, as what we perceive directly maps onto, in some sense, that which we perceive indirectly. Now, for some reason, Aristotle seems to assume that the opponent who limits ontology to the sensible, thereby limits the ontology to the directly sensible. As we will see below, he is eager to argue against this view by arguing for something like the RTP. Before we examine his reasoning there, we should perhaps attempt to grasp the argument that if one limits an ontology to that which is directly sensible, were there no souls, there would be nothing else.

Let's begin with the counterfactual claim that were there only the sensible and no souls, there would be nothing else. The counterfactual option that parts ways with actuality least is usually thought to be the right option, so we can begin assessment by evaluating Aristotle's argument in this way. Let A be the conjunctive antecedent: *Only the sensible Exists* & *There are no souls.* For the value of B: *Nothing exists*. When antecedent and consequent are brought together the subjunctive conditional reads as follows (CF):

(CF) If A were the case, then B would be the case.

And (CF) will be true provided that the world where A is true and B is true parts ways with the actual world less than the world where A is true and B is false (See Tables 3.1 and 3.2):

Table 3.1

	$W@$	W_1	W_2	W_3	W_4
A	F		T	T	
B	F		T	F	

Table 3.2

	$W@$	W_1	W_2	W_3	W_4
A	F		T	T	
B	F		F	T	

(In short, given W_n and W_{n+1}, W_n will resemble the actual world more than W_{n+1}.) If (CF) is true, we should favor Table 3.1 over Table 3.2. Favoring Table 3.1 over Table 3.2 however presents a difficulty. Table 3.1 depicts the world where nothing exists as parting ways with the actual world less than a world where something exists. And this is counterintuitive to say the least. It seems that the world where A is true, and B is false, no matter how peculiar, is less peculiar than the world that is, so to speak, devoid of all content.[11] Now, admittedly, it is not at all clear how a world where nothing exists can be a world.[12] But if we allow for the possibility that there is nothing rather than something, it seems as if we reference that very possibility. One might try to argue that the state of affairs, as described in Table 3.2, such that only the sensible exists, there are not souls, and there are objects, is a contradictory world, and so the situation in Table 3.1, however peculiar, is nevertheless, therefore, preferable. Another option might be to understand Aristotle as arguing by *reductio ad absurdum* as follows:

(1) If only the sensible exists, then CF is true.
But: (2) If (CF) is true, then there is a world where nothing exists.
And: (3) It is impossible for a world to exist without objects.

Aristotle might be read as asserting something akin to this at 1010b32 (Ross 1908):

> Now the view that neither the sensible qualities nor the sensations would exist is doubtless true (for they are affections of the perceiver), but that the substrata which cause the sensation should not exist even apart from sensation is impossible.

And (3) and (2) will get one to (4), and (1) and (4) may be used to arrive at (5):

(4) (CF) is not true.
So: (5) It is not the case that only the sensible exists.

Whichever path we choose here, as the passage at 1010b32 seems to suggest, Aristotle's argument addresses those for whom there is no distinction between that which is directly sensible and that which is indirectly sensible. And he offers an argument for why the distinction in question should be upheld (Ross 1908, 1010b35–1011a11):

> For sensation is surely not the sensation itself (οὐ γὰρ δὴ ἥ γ᾽ αἴσθησις αὐτὴ ἑαυτῆς ἐστίν), but there is something beyond the sensation, which must be prior to the sensation; for that which moves is prior in nature to that which is moved, and if they are correlative terms, this is no less the case.

The idea expressed here seems to be that if there were nothing behind sensation, what we sense would be the sensation itself. Alexander comments that "the senses do not come to be of themselves"[13] And, Aquinas complains that Aristotle's opponents are committed to the view that the object of sight is sight itself and not color. And this presents a kind of circuitous, unintelligible picture of sense perception. Sensation becomes both subject and object at once, as the reasoning appears to be, if there is nothing beyond and thereto prior.

But does the argument turn upon an ambiguity? Consider (6a) and (6b):

(6a) If there is nothing beyond and prior to the sensation, then ***sensation*** is of sensation itself.
(6b) If there is nothing beyond and prior to the sensation, then ***awarenes***s is of sensation itself.

The locutions *sensation of* and *awareness of* admit of substitution in some contexts because sensation of an object and awareness of the same object co-occur with great regularity. Nevertheless, someone like Berkeley or perhaps someone impressed with J.S. Mill's "permanent possibilities of sensation" might accept the antecedents of both (6a) and (6b), while agreeing only to accept the consequent of (6b).[14]

Aristotle says that there is something beyond the sensation which must be prior to sensations, as that which moves is naturally prior to that which is moved. At first glance, this looks a little bit like there is something prior to the sensation because there is something prior to the sensation, so that we have stipulation rather than argumentation. I read Aristotle as saying that our sensations require an independent cause. Aristotle, in contrast to the way he portrays his opponents, is a realist.[15] He distinguishes between directly sensible and indirectly sensible. And, so, his view is comparable to the Representation Theory of Perception. It is also perhaps vulnerable to the objections commonly associated with it. As Berkeley argued, x is legitimately said to represent y only if one may compare x with y. I can say that Helly's painting of Caberfae Peak represents Caberfae Peak, only if I can compare the painting with the peak. But I cannot somehow get outside of my sense-experience to compare that experience with that which may lay behind it. More cautiously, one might simply say, as Aristotle does here, that our perceptions require an external cause. And while this is not an idea objectionable to Berkeley, so long as we understand God to be the external cause, there is a powerful objection we owe to Hume. We speak of causal relations when we observe a regularity to obtain among *relata*, though we never observe a regularity to obtain between something directly sensible and something indirectly sensible, as access is restricted to the former.

Nevertheless, feeling that desire for a game of backgammon at the pub, one can relate to the idea that there is more behind the front door of that pub than Mill's permanent possibilities of sensation. An unreduced, structured, world underwrites the truth about what would be experienced were one to open that door.[16] Aristotle takes truth to thus supervene upon being, as we will see when we turn to chapter 7 of *Book Gamma*.

III.7: REALISM, ANTI-REALISM, AND BIVALENCE

A recurring theme in *Book Gamma* is that many have been led astray by a failure to recognize the appropriate indices. Those who make all appearances true, and all things relative, need to be mindful of the fact that what they are saying is (Ross 1908, 1011a23–24): "what appears exists *for him to whom* it appears, and *when*, and *in the sense in which*, and *in the way in which* it appears." With the indices in place, Aristotle can argue that the putative contradictions are thereby eliminated.

We have seen that Aristotle is ready to target premise three of the *Paradox of Decidability*. He believes that there are objective reasons to prefer one appearance over another, and that the advocates of what we might call *universal undecidability* have employed examples, in the course of making their case, which Aristotle believes presuppose that we have criteria for favoring some appearances over others (1010b1–15). When, however we turn to chapter 7 of *Book Gamma*, Aristotle turns his attention to premise (4).

(1) It appears that P.
(2) It appears that ~P.
(3) There is no objective reason to prefer one appearance over the other.
So: (4) There is no fact of the matter whether P or ~P.
So: (5) P is no more true than ~P.

Aristotle is going to argue on behalf of a principle that very much resembles the Principle of Excluded Middle (PEM). Thus, Aristotle can be read as arguing that even if we were to allow premises (1), (2), and (3), *ad arguendo*, (4) is nevertheless false, and, therefore would not follow from these premises.

The dialectical moves here may be usefully compared to the more contemporary debates between realists and anti-realists. There are some philosophers who maintain that we cannot understand a claim of the form "It is true that *p*" without understanding the conditions under which one would be warranted in asserting a claim of this form. Ludwig Wittgenstein, here, paints a nice picture for us (*Tractatus* 4.063, tr. Pears and McGuiness, 1974).

An analogy to illustrate the concept of truth: imagine a black spot on white paper:

> You can describe the shape of the spot by saying, for each point on the sheet, whether it is black or white …. But in order to be able to say that a point is black or white, I must first know when a point is called black, and when white: in order to be able to say "*p* is true (or false)," I must have determined in what circumstances I call "p" true, and in so doing I determine the sense of the proposition (und damit bestimme ich den Sinn des Satzes).[17]

And there are some philosophers who believe that determining the circumstances under which one is warranted in asserting a claim of the form "*p* is true," is invariably linked to our interests. This point is expressed by Michael Dummett in his essay "Truth" as follows (1978a, 3):

> A certain criticism applies to many accounts of truth and falsity or of the meaning of certain sentences in terms of truth and falsity. We cannot in general suppose that we give a proper account of a concept by describing those circumstances in which we do, and those in which we do not, make use of the relevant word, by describing those circumstances in which we do, and those in which we do not, make use of the relevant word; we must also give an account of the *point* of the concept, explain what we use the word *for*. Classifications do not exist in the void, but are always connected with some interest which we have, so that to assign something to one class or to another will always have consequences with this interest.

If we cannot understand a claim of the form "It is true (or false) that *P*" without understanding the conditions under which one would be warranted in asserting a claim of this form, then in cases where we do not understand the conditions under which one would be warranted in asserting *P* or asserting ~*P*, then, on the present line of reasoning, *P* is not true and *P* is not false. And, furthermore, the anti-realist believes we do not understand the conditions under which one would be warranted is asserting *P* or asserting ~*P*, for some *P*. Dummett, for example refers us to certain subjunctive conditionals, or to statements that concern remote spatial or temporal regions. With respect to the former, we simply have no way of determining, for someone who never faced danger or risk, in virtue, say, of a sheltered life, between these apparently competing alternatives (1978b, 148, Cf. 1978a, 15):

P: If George had faced danger, he would have acted bravely.
~P: If George had faced danger, he would not have acted bravely.

With respect to the latter, an example taken from Chase Wrenn's explanation of Anti-Realism will illustrate the point (2015, 23):

P: There is an odd number of water molecules 63 billion light years from earth.
~P: There is not an odd number of water molecules 63 billion light years from earth.

Here, *p* is a *bona fide* undecidable, if our scientists are correct in saying that there is no way to receive information from areas more than 62 billion light years away, and that our universe is a great deal larger. To know the meaning of a statement we need to know what it is for the statement to be true. However, we know what it is for a statement to be true only if we know what evidence could be offered on its behalf. And when it comes to the propositions above, so runs the argument, we do not have what we need.

Of course, some philosophers want to keep our epistemic relation to *P* distinct from the truth thereof. And these philosophers will maintain that we may not know that *P*, and we may not know that ~*P*, but we nevertheless know that (*P* or ~*P*). And this characterizes the debate between realists and anti-realists along these lines (Dummett 1978b, 155):

> It is this therefore which makes acceptance of the law of excluded middle for statements of a given class a crucial test for whether someone takes a realist view of statements of that class. The anti-realist cannot allow that the law of excluded middle is generally valid: the realist may, and characteristically does.

Acceptance of PEM is a rejection of premise (4) in the *Paradox of Decidability*. Now, the views of those Aristotle associates with Protagoras, in contrast to the views of contemporary anti-realists, can be described as fairly radical. In Aristotle's view, they take every claim to be undecidable. And this means, unless PEM is upheld, that they hold that for every *P* there is no objective fact of the matter whether *P* or ~*P*. If we understand Realism as the view that the impossibility of knowing *P* does not affect the truth of *P* (Wrenn 2015, 24), we can think of Aristotle's Protagoreans as extreme anti-realists, whose anti-realism extends to every claim, as these Protagoreans would seem to take the belief that *P* to be a necessary condition for *P*'s being true. Aristotle opens chapter 7 of *Book Gamma* maintaining that the PEM should be upheld (1011b23–30):

> But on the other hand there cannot be an intermediate between contradictories (ἀλλὰ μὴν οὐδὲ μεταξὺ ἀντιφάσεως ἐνδέχεται εἶναι οὐθέν), but of one subject we must either affirm or deny any one predicate (ἀλλ᾽ ἀνάγκη ἢ φάναι ἢ ἀποφάναι ἓν καθ᾽ ἑνὸς ὁτιοῦν). This is clear, in the first place, if we define what

> the true and the false are (δῆλον δὲ πρῶτον μὲν ὁρισαμένοις τί τὸ ἀληθὲς καὶ ψεῦδος.) To say of what is that it is not (τὸ μὲν γὰρ λέγειν τὸ ὂν μὴ εἶναι), or of what is not that it is (ἢ τὸ μὴ ὂν εἶναι) is false, while to say of what is that it is (τὸ δὲ τὸ ὂν εἶναι), and of what is not that it is not (καὶ τὸ μὴ ὂν μὴ εἶναι), is true; so that he who says of anything that it is, or that it is not, will say either what is true or what is false (καὶ ὁ λέγων εἶναι ἢ μὴ ἀληθεύσει ἢ ψεύσεται) ….[18]

Aristotle's definition of truth, where he asserts that there is a relationship between truth (ἀλήθεια) and being (τὸ ὂν), has been importantly influential. The relationship Aristotle has in mind might be initially diagrammed as follows (See Table 3.3):

Table 3.3 Truth as That Which Is

	x is that which is	*x is that which is not*
Says of x that it is	T	F
Says of x that it is not	F	T

The passage invites a number of interesting questions. And it has been read in a number of ways. In the following section, we will consider some of the ways in which his account has been classified. Aristotle's countenance of the relation between truth and being is clearly suggestive of realism. And, interestingly, he appears to argue directly from the definition of truth to the (PEM). Some passages in Aristotle suggest that something could be true even were no one to entertain a thought corresponding thereto. Aristotle says the following in the *De Interpretatione* (tr. Ackrill (18b26)):

> Nor of course does it make any difference whether any people made the contradictory statements or not …. Hence, if in the whole of time the state of things was such that one or the other was true, it was necessary for this to happen, and for the state of things always to be such that everything that happens, happens of necessity.

So, it seems that Aristotle would countenance a unit, a truth-maker, which need not enter into a relation with a speaker's attitude (Ross 1908, 1051b5–8):

> This being so, when is what is called truth or falsity present, and when is it not? We must consider what we mean by these terms. It is not because we think truly that you are white, that you are white (οὐ γὰρ διὰ τὸ ἡμᾶς οἴεσθαι ἀληθῶς σε λευκὸν εἶναι εἶ σὺ λευκός), but because you are white we who say this have the truth (ἀλλὰ διὰ τὸ σὲ εἶναι λευκὸν ἡμεῖς οἱ φάντες τοῦτο ἀληθεύομεν).

One take away here is that there is a co-extensive relationship between the true statement "Socrates is white" and the truth-maker *Socrates is white*. It is said that we who say, for example, "Socrates is white" have the truth, and this entails that Socrates *is* white; and the entailment clearly goes in the other direction. Nevertheless, there is an unmistakable priority relation at work. For Aristotle takes the truth-maker to be asymmetrically responsible for the truth of the statement. That truth, in general, obtained *in virtue* of a truth-maker, makes it sound as if we are dealing with a grounding relation, and, to be sure, many current advocates of the truth-maker theory see the relation between truth and states of affairs as just that.[19] The truth-makers underwrite the things that are said, which involve combination (*Categories* 1a16), so Aristotle's view may be usefully compared with those who take truth to supervene upon being.[20] Of course, stating precisely what a grounding relation is has proven very difficult, with some philosophers who countenance the relation going so far as to argue that the relation is not strictly ordered (Rodriguez-Pereyra 2015). Nevertheless, Aristotle, as we have seen, countenances ontological dependencies, whereby the existence of one set of things depends, asymmetrically upon the existence of more basic entities. And here we seem to read Aristotle thus grounding truth upon being. An approach such as this is not without difficulty.[21] But the ontology that Aristotle seems to want to accommodate countenances a ready-made world[22] where discovering what is true involves carving at the joints. Some worry that we might fix upon truth in our theories only to have reference of the terms therein be inscrutable.[23] Some philosophers take some terms, those playing a key role in nomological discourse perhaps, to be more natural, that is to be more eligible to reference, than those more gruesome or bleensome (1999b and 1999c). And if one takes there to be different ways of being, one might be inclined to think that countenancing varieties thereof will carve accordingly at the joints, as we suggested Aristotle's countenance of ways of being might be modeled, in Chapter 1.[24]

Aristotle takes it to be clear that the PEM is valid once we grasp the way truth is to be related to being (Ross 1908, 1012a2–5):

> Again, every object of understanding or reason of the understanding either affirms or denies—this is clear from the definition—whenever it says what is true or false. When it connects in one way by assertion or negation, it says what is true, and when it does so in another way, what is false.

How is this clarity reached? Maybe the idea is that once we take truth to be grounded in being, truth is going to be something independent of the tests we use to detect it. Our tests answer to being. And, therefore, even in a case where we cannot decide between P or $\sim P$, there is nevertheless a fact of the matter that obtains. Now if we read Aristotle in this way, as a realist who

will resist any restriction upon PEM, because there are joints in the world independent of our means for carving, there is a problem. In *De Interpretatione* II.9, Aristotle appears to loosen his grip on PEM. This is a problem to which I will return in III.9. For the moment, I would like to consider how best to understand Aristotle's views on truth. For we have invoked the idea of a truth-maker in the course of discussing Aristotle's views. And without an explanation concerning the role of a truth-maker, it may seem that what is been invoked is a *Deus ex Machina*. A successful account of Aristotle's views on truth should have something to say about the relation between truth and being.

III.8: ARISTOTLE'S THEORY OF TRUTH?

That Aristotle held or formulated views sufficiently robust to satisfy the description *theory of truth* is something that may be doubted (Barnes 2007, 66). At the same time, the influence of Aristotle's definition of truth, as we encounter it in *Book Gamma*, can hardly be exaggerated. That definition runs, moreover, as follows (1011b2–5):

> This is clear, in the first place, if we define what the true and the false are (δῆλον δὲ πρῶτον μὲν ὁρισαμένοις τί τὸ ἀληθὲς καὶ ψεῦδος.) To say of what is that it is not (τὸ μὲν γὰρ λέγειν τὸ ὂν μὴ εἶναι), or of what is not that it is (ἢ τὸ μὴ ὂν εἶναι) is false, while to say of what is that it is (τὸ δὲ τὸ ὂν εἶναι), and of what is not that it is not (καὶ τὸ μὴ ὂν μὴ εἶναι), is true.

In the genre concerning the philosophical treatment of truth, there are quite a few classifications, and most of those that you can think of, have, at one time or another, been attributed to Aristotle. In this section, I will discuss four ways that Aristotle's remarks concerning truth might be classified. Aristotle's views have been described in terms associated with the Semantic Conception of Truth, as satisfying the criteria for the Correspondence Theory of truth, and they have been related to The Minimalist Conception of truth. I think that Aristotle's views on truth might be sui generis. However, as comparisons are interesting, I will argue that Aristotle's view bears a keen resemblance to more modern Causal Theories of Truth.

III.8.1: Aristotle and the Semantic Conception of Truth

It is said, by some very good commentators, that Aristotle's definition of truth is a semantic definition of truth (Cavini 1993, 86 and Cavini 1998). And one can rightly wonder what is meant by "semantic definition of truth." The

phrase "semantic definition of truth" calls to mind, of course, the title of Alfred Tarski's 1944 paper "The Semantic Conception of Truth." And we find within the writings of those who thus describe Aristotle's definition, that certain features commonly associated with Tarski's treatment of the concept of truth (in formalized languages) are attributed to Aristotle (and Plato too no less). In particular, you find that something resembling Tarski's Equivalence Thesis is attributed to Aristotle. And not without reason. As Walter Cavini writes (1993, 86–87):

> In Plato and Aristotle, in particular ἀληθεύω means not only *speaking* but *thinking* or *believing* truly. And Aristotle's celebrated "semantic" definition of truth in *Metaphysics* IV.7, 1011b25–8, is by the same token a "semantic" definition of speaking truly …. There is a second basic truth principle … according to which saying "p is true" is (logically) equivalent to simply saying that *p*. This is the so-called "Equivalence Thesis" as expressed, for example, by Tarski T-sentences of the form: "p" is true if and only if p.

As Tarski maintained, any adequate theory of truth should imply every instance of the pattern of the Equivalence Thesis, where a name (or a definite description, if we are so distinguishing,) for a sentence is provided on the left-side of the bi-conditional and the sentence itself is provided on the right side of the bi-conditional:

(ET) "S" is true if and only if S

(ET) allows for both semantic ascent and semantic descent. That is, one may logically transition, in the case of semantic ascent, from *Snow is white* to *"Snow is white" is true*. And one may transition, furthermore, in the case of semantic descent, from *"Snow is white" is true* to *Snow is white*. There is something undeniably similar to the ascent and descent licensed by (ET) found within Aristotle's writings (*Categories* 14b15–18).

> For if there is a man, the statement by which we say that there is a man is true (εἰ γὰρ ἔστιν ἄνθρωπος, ἀληθὴς ὁ λόγος ᾧ λέγομεν ὅτι ἔστιν ἄνθρωπος) and conversely indeed (καὶ ἀντιστρέφει γε), if the statement by which we say there is a man is true, there is a man (εἰ γὰρ ἀληθὴς ὁ λόγος ᾧ λέγομεν ὅτι ἔστιν ἄνθρωπος, ἔστιν ἄνθρωπος).

One might, of course, uphold (ET) as an important feature of truth without endorsing Tarski's Semantic Conception of Truth. So, it might be useful to consider what a Semantic Conception of Truth is a conception of.

In the "Semantic Conception of Truth," Tarski cites Aristotle's definition of truth, saying the following (1944, 342–3):

> We should like our definition to do justice to the intuitions which adhere to the classical Aristotelian conception of truth which find their expression in the well-known words of Aristotle's *Metaphysics.*[25]

After citing Aristotle's definition of truth from chapter 7 of *Book Gamma*, he offers several formulations that appeal to agreement or correspondence with reality (1944, 343): "The truth of a sentence consists in its agreement with (or correspondence to) reality or A sentence is true if it designates an existing state of affairs." He continues by saying the following of the (three) definitions to which he has referred:

> However, all these formulations can lead to various misunderstandings, for none of them is sufficiently precise or clear (though this applies less to the Aristotelian formulation than to either of the others).[26]… It is up to us to look for a more precise expression of our intuitions.

Clearly Tarski has some sympathy with the Aristotelian understanding of truth. He takes the Aristotelian formulation to be the classical conception and he understands his Semantic Conception to be a modernized formulation of the classical conception (1944, 355–6):

> Referring specifically to the notion of truth, it is undoubtedly the case that in philosophical discussions—and perhaps in everyday usage—some incipient conceptions can be found that differ essentially from the classical one (of which the semantic conception is but a modernized form). In fact, various conceptions of this sort have been discussed in the literature, for instance, the pragmatic conception, the coherence theory, etc.

It is not therefore unreasonable to understand Aristotle's definition of truth to be a semantic definition of truth, when, Tarski sees his project as one of modernizing Aristotle's conception, while supplementing it with precision. Bypassing some of the exegetical issues related to Tarski's work, some of the more modern features thought to be responsible for this precision may here be usefully considered. Tarski seems to attempt to understand truth in terms of designation.[27] Some singular terms designate or name individuals, as "Helly" names Helena, for example, and "Monty" names Monica. Some terms, namely predicates, are not singular, and, being general, are said to designate the class of objects within their extension. Helly and Monty satisfy the predicate "downhill skiers under the age of ten living at 402 Mingo

Street." Sentences—atomic sentences to be precise—are formed, it will come as no surprise, by juxtaposing singular and general terms using the verb *to be*, for example, *Helly is a skier.* Of course, in addition to the atomic sentences there are molecular sentences. There are universally quantified sentences, existentially quantified sentences, negated sentences, conjunctions, disjunctions, and conditionals. And part of Tarski's insight seems to have been that we can rest an understanding of truth upon the semantic notions of designation and satisfaction. A truth-predicate—quite crucially a truth-predicate in a metalanguage—applies to a sentence in an object language just in case:

(i) The sentence is atomic and the singular term designates an object that satisfies the general term.
(ii) The sentence is an expression of universal quantification and everything satisfies the general term.
(iii) The sentence is an expression of existential quantification and something satisfies the general term.
(iv) The sentence is an expression of a negation and the sentence negated is false.
(v) The sentence is an expression of a conjunction and each conjunct is true ….

And as Tarski puts it (1944, 352): "A definition of truth can be obtained in a very simple way from that of another semantic notion, namely, of the notion of satisfaction." It might be thought that (iv) and (v), for example, presuppose the very notion being defined. But this is not worrisome as negations, conjunctions, disjunctions, and conditionals, are built up from atomic, universal, and existential statements, which are understood to be true in virtue of the semantic notions of satisfaction and designation. The requirement that a sentence only satisfies a truth-predicate in a language of a higher order ensures, for example, that semantic paradoxes such as the Liar Paradox do not undermine the consistency of our "scientific language."[28] (I will have more to say about how Aristotle may have reacted to considerations such as the Liar Paradox in the Appendix.) And thus Tarski (1969, 64), in "Proof and Truth" would describe the efforts as one where "We shall attempt to obtain here a more precise explanation of the classical conception of truth, one that could supersede the Aristotelian formulation while preserving its basic intentions."

One might ask, however, as Donald Davidson has (1996, 267), where the added precision Tarski seeks is ultimately found? Considering Aristotle's celebrated expression of the classical conception of truth, and Tarski's conception that rests an understanding of truth upon satisfaction, Davidson states:

> For the languages Tarski considered, and for which he showed how to define truth, all sentences can be put in the form of an existential quantification, or a

> truth-functional compound of such sentences. So how "incomplete" is Aristotle's formulation? It deals with four cases. There are the sentences that "say of what is that it is not": in modern terms it is a false sentence that begins "It is not the case that there is an x such that …." An example might be: "There does not exist an x such that x =4." Then there are sentences that "say of what is not that it is"; for example "There exists an x such that x = 4 and x = 5." There are sentences that "say of what is that it is"; for example: "There exists an x such that x = 4." And, finally, there are sentences that "say of what is not that it is not": for example "It is not the case that there is an x such that $x \neq x$"…. What would Tarski add? Just the truth-functional compounds (beyond those involving negation) already mentioned. These are true or false on the basis of the sentences already provided for.

That certain features of the semantic conception of truth are relatable to Aristotle's conception of truth should be unsurprising. Tarski, much like his Lvov-Warsaw School predecessors, saw himself as working within an Aristotelian tradition. However, Tarski's conception of truth differs from Aristotle's in notable ways. Tarski, unlike Aristotle, was radically nominalist in terms of ontology (Murawski and Wolenski 2008). The notion of satisfaction upon which so much is usefully rested is constructed in the way a Class Nominalist would pursue an account of predication. Aristotle's definition of truth in *Book Gamma* is, to be sure, ontologically austere. It is natural that Aristotle would state a fairly ecumenical definition of truth, in *Book Gamma*, without making explicit the ontological conditions thereof, as he is dialectically engaged with interlocutors who share other commitments (Hestir 2013, 27). As we will see, his ontology of immanent universals and substantial particulars play a role in truth-making. And one can feel some dissatisfaction with an interpretation of Aristotle's views on truth where those views are bereaved of his ontological considerations.

III.8.2: A Correspondence Theory of Truth?

A cursory glance at the literature will bear it out that "Correspondence Theory" is said in many ways. Paulo Crivelli finds that Aristotle's view falls within the genus, though he usefully places his interpretation of Aristotle's view in contrast with certain species of the Correspondence Theory. Crivelli also produces a thorough commentary on what he takes Aristotle's truth-makers to be, namely, states of affairs. He begins by considering a variety of the Correspondence Theory, which makes appeal to facts (204, 130): An assertion *A* is true (false) if and only if there is some (no) fact that corresponds to *A*. And he argues that Aristotle's view would not be correctly described as a Correspondence Theory, thus defined, as Aristotle's account fails to mention facts. As Crivelli points out (204, 130), while Aristotle does use *pragma*

in a way similar to the way *fact* is used, there appears to be no count-noun in Greek that corresponds word for word to the English expression "the fact that …" (One might wonder if "word for word" correspondence is required for sameness of use, and, therefore, sameness of meaning.) However, Aristotle does, on Crivelli's reading, countenance states of affairs. So, it might be thought that Aristotle's view could be understood as: An assertion *A* is true (false) if and only if there is some (no) obtaining state of affairs that corresponds to *A*. Given that *fact* is usually understood as *state of affairs that obtains*, one might take Aristotle's view to involve a correspondence between assertions and facts after all. However, Crivelli reads Aristotle's views concerning states of affairs as, ultimately, incompatible with such an approach. For, unlike the advocates of the *correspondence-with-fact* approach, who tend to countenance both negative and positive states of affairs, Aristotle countenances only positive states of affairs (2004, 130 cf. 49). Crivelli reduces states of affairs, as near as I can discern, to relations involving combinations or divisions between objects denoted ("grasped" as he puts it) and universals designated ("grasped") by predicates.

Cr1 Assertion "S is F" is true: iff the object grasped by "S" is combined in the relevant way with the object grasped by "F."
Cr2 Assertion "S is F" is false: iff the object grasped by "S" is divided from the object grasped by "F" in the relevant way.

The *definiens* in (Cr2) might plausibly be thought to account for the falsehood of "S is F" without reckoning a negative state of affairs to obtain. Actually, Crivelli's interpretation is a little more nuanced (2004, 131). As I read him, we understand the *relevant way* clause by understanding Aristotle to be employing a function that takes classifications of assertions, C_1,……,C_n, and maps them to attributes A_1,……..,A_n. And correspondence-as-isomorphism results whereby an assertion *a* is true iff *a* belongs to C_i and the item (or items) *a* is about has (or have) A_i. Assertions, when properly classified, exhibit structures that enter into a mapping relation with states of affairs, such that the assertion corresponds in an isomorphic way with the state of affairs. Crivelli also suggests (2004, 137) that "Aristotle's theory of truth seems to count as a correspondence theory in a different stricter sense." An assertion classified, for example, as *asserting the combination of holding* is said to map upon *being combined in such a way to hold*. And an assertion classified, for example, as *asserting the division of holding* is said to map upon *being divided in such a way to hold*. An assertion is true (2004, 137), and is said to mirror a corresponding states of affairs, "when, and only when, it asserts its object to be as it is."

There are well-known difficulties associated with invoking states of affairs in order to provide an exposition of truth. For, while advocates of the

structurally isomorphic conception may find analogous features, in states of affairs and the assertions to which they are said to correspond, the disanalogous features are numerous as well (Wrenn 2015, 79). The view has drawn sharp criticism from philosophers such as J.L. Austin and P.F. Strawson, who parody states of affairs, so understood, as "sentence-shaped objects" (1950). The language of "mirroring" suppresses, for a moment, one's concern about the *relata* involved with correspondence. Thereafter, however, one begins to wonder if one obscurity has been replaced with another. What does it mean to assert a false but meaningful statement? Consider an assertion such as "Monty is a pitcher for the Tigers." On the *states-of-affairs* account, it is to assert a statement that represents a state of affairs that does not obtain.[29] What is the criteria that we rely upon in determining that the assertion represents a state of affairs that does not obtain? It seems to be that the assertion is a meaningful but *false* assertion (see Wrenn 80). And we cannot rest an account of false assertion upon the idea of a meaningful but *false* assertion. Of course, one might respond that Aristotle does not rest matters there. Aristotle understands the universal *pitcher for the Tigers* as failing to belong to Monty. But then it seems that Aristotle is resting his conception of truth upon his conception of immanent universals, and not the sentence-shaped chunks of being repudiated by Strawson. The states of affairs are, if anything, mere shadows cast by the universals and the subjects to which they belong.

So, why would someone be moved to understand Aristotle as committed to an ontology of states of affairs that does not countenance negative states of affairs? Indeed, why would one understand Aristotle as relying upon an ontology of states of affairs in the first place? Crivelli grounds a fair amount of interpretation upon two texts. We may begin with chapter 29 of *Metaphysics*, *Book Delta*, (Crivelli's translation 2004, 46):

> One way in which what is false is spoken of is by being a false object. This can happen, on the one hand, because it is not combined or it is impossible for it to be composed (the diagonal's being commensurable and your being seated are spoken of in this way, for one of these is false always and the other sometimes, for it is in this sense [sc. in the sense of being false] that these are non-beings), and, on the other hand, in the case of such items that … [*sic*](1024b17–21) …. Objects are then called "false" in this way either because they themselves are not or […][*sic*] (1024b24–5)

And here he reads Aristotle as saying that there are objects that bear a truth-value, and that the examples "you are seated" and "the diagonal's being commensurable" are best understood as states of affairs (2004, 47):

> Therefore, the items which Aristotle [above] describes by using "object" and "false" are probably states of affairs. Accordingly, [the passage's] main point is probably to explain what it is for a state of affairs to be false.

Crivelli also directs his readership to chapter 10 of *Metaphysics*, *Book Theta*. I will quote Aristotle at length here, as the passage is an important piece of evidence in reconstructing Aristotle's view on truth (1051a 35–1051b 9):

> The terms being and not being are said according to the figures of the categories (Ἐπεὶ δὲ τὸ ὂν λέγεται καὶ τὸ μὴ ὂν τὸ μὲν κατὰ τὰ σχήματα τῶν κατηγοριῶν), and in accordance with potentiality and actuality or the opposites of these (τὸ δὲ κατὰ δύναμιν ἢ ἐνέργειαν τούτων ἢ τἀναντία), and [being most strictly] true or false (τὸ δὲ [κυριώτατα ὂν] ἀληθὲς ἢ ψεῦδος), but this in the case of objects is to be combined or divided (τοῦτο δ᾽ ἐπὶ τῶν πραγμάτων ἐστὶ τῷ συγκεῖσθαι ἢ διῃρῆσθαι) so that he has the truth who thinks that which is divided to be divided and that which is combined to be combined (ὥστε ἀληθεύει μὲν ὁ τὸ διῃρημένον οἰόμενος διῃρῆσθαι καὶ τὸ συγκείμενον συγκεῖσθαι), and he is mistaken who has things oppositely (ἔψευσται δὲ ὁ ἐναντίως ἔχων ἢ τὰ πράγματα). And when is there and isn't there what is called true or false? (πότ᾽ ἔστιν ἢ οὐκ ἔστι τὸ ἀληθὲς λεγόμενον ἢ ψεῦδος;) We must consider what we call this (τοῦτο γὰρ σκεπτέον τί λέγομεν). For you are white not because we believe truly you to be white (Οὐ γὰρ διὰ τὸ ἡμᾶς οἴεσθαι ἀληθῶς σε λευκὸν εἶναι εἶ σὺ λευκός), but because you are white we who assert this assert truly (ἀλλὰ διὰ τὸ σὲ λευκὸν εἶναι ἡμεῖς οἱ φάντες τοῦτο ἀληθεύομεν).

Crivelli reads Aristotle as saying that "What 'is' and what 'is not' are spoken of … by being *in the strictest sense* true or false" (1051a34–1051b2). He finds Aristotle adding 'This in the case of objects is to be combined and or to be divided' (1051b2–3). And he paraphrases the passage as: "…in the case of objects, being in the strictest sense true is being combined and being in the strictest sense false is being divided" (2004, 51). He understands the combinations and divisions to be states of affairs. And they are states of affairs, no less, that admit of truth and falsity per se.

One might well think otherwise. We encounter something very counter-intuitive on Crivelli's view here. States of affairs are objects that are true or false. Of course, states of affairs are generally thought to be the truth-makers. So, on Crivelli's view, Aristotle considers states of affairs to be truth-maker and truth-bearer alike. Presumably, the states of affairs are truth-makers for assertions and beliefs. But are we not left wondering what the truth-makers for states of affairs are? It is probably better to avoid a consequence such as this. And we may begin to do so by pointing out that the claim that true and false are in objects, as the Crivelli reading of the *Delta* passage and *Theta* passage requires, conflicts with what Aristotle says in chapter 4 of *Metaphysics*, *Book Epsilon* (1027b25–7):

> For it is not the case that false and true are in objects (οὐ γάρ ἐστι τὸ ψεῦδος καὶ τὸ ἀληθὲς ἐν τοῖς πράγμασιν), for example good being true, on the one hand,

> and false straightaway bad on the other (οἷον τὸ μὲν ἀγαθὸν ἀληθές, τὸ δὲ κακὸν εὐθὺς ψεῦδος), but in thought (ἀλλ᾽ ἐν διανοίᾳ)

W.D. Ross excises "in the strictest sense" [κυριώτατα ὂν] from the Theta 10 passage altogether. It is possible, therefore, to read the passage as simply saying that "being and not being are said in accordance with true and false." (And this much we already knew from Aristotle's definition of truth in *Book Gamma*.) Recognizing the conflict, Tredennick with Jaeger does not excise the text, and instead interprets κυριώτατα as "in the commonest sense." And, so read, we need not understand true and false to be in the *pragmata* in question.

Recall that Aristotle begins *Book Gamma* with a discussion concerning the *pros hen* relation and its importance to the science of *being qua being*. Aristotle illustrates his idea with an analogy to health. The term *healthy* always relates to health, we are told, whether it be in virtue of preserving it, or in virtue of being indicative of it, or in virtue of being receptive of it, or*, in virtue of making it:*

> Τὸ δὲ ὂν λέγεται μὲν πολλαχῶς, ἀλλὰ πρὸς ἓν καὶ μίαν τινὰ φύσιν, καὶ οὐχ ὁμωνύμως ἀλλ᾽ ὥσπερ καὶ τὸ ὑγιεινὸν ἅπαν πρὸς ὑγίειαν, τὸ μὲν τῷ φυλάττειν, ***τὸ δὲ τῷ ποιεῖν***, τὸ δὲ τῷ σημεῖον εἶναι τῆς ὑγιείας, τὸ δ᾽ ὅτι δεκτικὸν αὐτῆς·

Rather than understand Aristotle as maintaining that states of affairs are strictly speaking true (or false), in the focal sense of the term, we might understand Aristotle as saying that, given that certain truth-makers *make* for truth, the truth-makers also are said to be true, albeit homonymously. Remember: It is not because we say that someone is white, that she is white, but because she is white we who say this have the truth. In so reading Aristotle, we avoid the fairly grave difficulty that Crivelli faces. For Aristotle maintains, moreover, in chapter 4 of *Book Epsilon* that truth and falsity are not in objects.

Crivelli is aware of the difficulty, and is moved to argue that "being in the strict sense true" and "being in the strict sense false" hold only of objects, where truth and falsity hold only of thoughts or assertions. It is better, I submit, to understand Aristotle as saying that objects are true, so to speak, in *Delta* 28 and *Theta* 10—albeit not true in an entirely equivocal way, but as *makers* of truth. And noting that it is Aristotle's metaphysics of substantial particulars and universals that is doing the lifting, we might forego thinking that states of affairs play a substantive role in his conception of truth.

III.8.3: A Minimalist Conception of Truth?

Blake Hestir offers an alternative reading of Aristotle's views such that truth-bearing is understood as combination and division at the noetic and linguistic

levels, truth-making is understood as combination and division at the ontological level, where combination and division are understood to be relations between universals and the subjects to which they belong (2013, 195). An approach described in this way would seem to avoid the difficulties issued in by extending a role to states of affairs. In fact, Hestir emphasizes the differences between thoughts and assertions, on the one hand, and what those thoughts and assertions are about, on the other. So, there is some reason to think that his view has the advantage of avoiding the Strawsonian imputation of countenancing sentence-structured chunks of reality. The difference between assertions and that which they are about, on Hestir's reading, leaves little room for a correspondence relation. And, so, the account he attributes to Aristotle resembles, as he describes it, a Minimalist Conception of Truth (2013, 218).

There is a middle path that Aristotle steers, concerning the debate, familiar from the *Cratylus*, over whether language is natural or conventional (tr. Hestir, *De Interpretatione* 16a3–8):

> Spoken words are symbols of affections in the soul, and written words [are symbols] of spoken words. And just as written letters [are] not the same for all humans, neither [are] spoken words. But what these primarily [are] signs of, the affections of the soul, are the same for all, as also are those things of which the same [affections are] likenesses.

Aristotle takes as conventional the words chosen as symbols. What they are symbols of, namely affections in the soul, however, is the same for everyone. And the affections in the soul, furthermore, are likenesses of objects in *rerum natura* (also the same for everyone). It seems that the affections in the soul represent objects in the world. And one might take thoughts that rightly represent objects in the world to *correspond*.

On Hestir's account (2013, 207), simple thoughts, words without predication, do indeed bear likenesses to objects. However, as thoughts begin to involve predication, the complex thought becomes imbued with a syntactic structure that does not map onto the combinations and divisions in *rerum natura*: (207): "Thoughts that involve accidental and (especially) essential predications become uniquely *unlike* the world, both qualitatively *and structurally*, even when they are true." And I think this conclusion, at any rate, is welcomed by those wanting to avoid a commitment to sentence-structured parcels of reality.

Another advantage of Hestir's account involves his understanding of the way that truth relates to being. Any satisfactory interpretation of Aristotle's definition of truth will remain elusive without an account of the role of the verb *to be* therein. It is reasonably clear that Aristotle takes truth to be importantly related to being. But we understand precious little until we understand the nature of that upon which it is thought to supervene. A quick detour to consider the

ways one might understand τὸ ὂν and εἶναι in Aristotle's definition may here be useful.

Some have read τὸ ὂν and εἶναι to have an existential sense. On this reading, Aristotle's definition runs as follows:

> (ER) To say of a thing which exists that it does not exist, or of a thing that does not exist that it exists is false, and to say of a thing which exists that it exists, or of a thing that does not exists that it does not exists is true.

The existential reading is frequently thought to leave Aristotle's definition of truth to be parochial, as the definition would be applicable only to existential assertions (Hestir 210; Crivelli 134). As we have seen, Davidson thinks something like (ER) to be consistent with Aristotle's definition of truth. And he offers a way to understand Aristotle's definition in a way such as to avoid this objection. For illustration, take an assertion that is false in virtue of saying *of what is that it is not*: "Socrates is not a philosopher." We might paraphrase the assertion as follows:

It is not the case that there is an x such that x = Socrates and x is a philosopher.

Voila: a predicative assertion is paraphrased as an existential assertion without a change in truth-value (and little, if any, change in meaning). What about assertions that say of what is not that it is? Consider the assertion "Socrates is a plumber." We can understand someone as saying of *what is not that it is* as follows:

It is the case that there is an x such that x = Socrates and x is a plumber.

The cases involved in asserting of *what is that it is* and asserting of *what is not that it is not* may be treated in like manner. So, it is not obvious that (ER) can be rejected as excessively narrow.[30] Hestir takes (ER) to be objectionable on dialectical grounds. He thinks that if Aristotle meant "what exists" by "that which is" and "what does not exist" by "that which is not," he would face the Parmenidean problem of "absolute" non-being, leaving his account open to counter-objection (2013, 209–210). He may be right about this. And one can be left with the feeling, in any case, that Davidson's approach is expressed in an idiom different in kind to that we are accustomed to find in the writings of Aristotle. Alternatively, one might take τὸ ὂν and εἶναι to have a veridical sense:

> (VR) To say of a thing *which is the case* that it *is not the case*, or of a thing that is the case that it is not the case is false, and to say of a thing that is the case that it is the case, or of a thing that is not the case that it is not the case is true.

The real difficulty with (VR), to my mind, is that we are attempting to define truth, that is attempting to define what is veridical, and we cannot rest the account upon the concept of the veridical.[31] Of course, we might understand the veridical in terms of concepts that are more basic. But then the account of truth will be understood in terms of the more basic concepts rather than in terms of what is (or is not) the case. On the basis of such a consideration, one might attempt to understand the relevant sense of *to be* in terms of a copulative use.

> (CR) To say of that which is F that it is not F, or of that which is not F that it is F, is false, and to say of that which is F that it is F and of that which is not F that it is not F is true.

It is the copulative reading that Hestir recommends, and, given the difficulties with the other readings, it can look fairly promising. Aristotle's definition of truth is rendered schematically by Hestir as follows (2013, 218):

For any S, or any F: "S is F" is true iff S is F
For any S, or any F: "S is not F" is true iff S is not F

Stated in this way the definition is fairly ecumenical. One might be a Platonist or a Nominalist about properties. And, dialectically, in *Book Gamma*, this is arguably preferable. Of course, as Hestir puts it, Aristotle prefers to keep his being immanent (2013, 219). Hestir renders the official definition as follows:

For any S, or any F: "S is F" is true iff the universal F is in S
For any S, or any F: "S is not F" is true iff the universal F is not in S

And this reading fits nicely with what Aristotle says elsewhere—especially in *Book Gamma*. As we have seen, Aristotle takes his definition of truth to be importantly related to the PEM. And, having defended PEM on the basis of his definition of truth, Aristotle continues by illustrating a difference between contradictories and contraries using universals such as white, black, man, and horse. The formulation of the PNC that he prefers involves the claim that it is not possible for the same thing *to hold* simultaneously of the same thing in the same respect (Hestir 2013, 211). And there we find the technical vocabulary referencing a universal holding of a subject.

Now it might be thought difficult to see precisely how the definition above can be described as Minimalist, given that there is a fair amount of ontology that goes with it. But this is an objection that misses its mark. The classical deflationary accounts were developed with sentences in mind and with the

desire to make use of the utility of semantic ascent.[32] But the first deflationary accounts to be described as *Minimalist* countenanced abstract entities in the form of propositions (Horwich 1999). So too, one might take Hestir's reading to countenance certain abstract entities, namely universals, while reflecting, at the same time, the attitude that "the general context of Aristotle's ontology, psychology, and semantic theory does not require the additional explanatory features of *correspondence* to *fact*" (Hestir 2013, 208).

The Minimalist reading advocated by Hestir is attractive in a number of ways. Chief among these, to my mind, are the following: (i) it does not grant a role to states of affairs, (ii) the copulative reading of *to be* (εἶναι) fits neatly with Aristotle's discussion of truth in *Book Gamma*. Because basic thoughts represent objects in *rerum natura*, particulars and universals, Hestir can say that his view is consistent with understanding Aristotle as a realist. He can avoid attributing to Aristotle a view reckoning correspondence-to-fact, it seems, by maintaining that, while basic thoughts represent objects in *rerum natura*, complex thoughts, thoughts involving predication, are imbued with a syntax that is "uniquely unlike the world both qualitatively and structurally." Simply put, basic thoughts correspond and complex thoughts (and thus assertions) do not. And it is the latter that serve as truth-bearers.

Despite the undeniable appeal of Hestir's reading, one might wonder whether there really is a role for immanent being to play. Hestir seems to read truth as something causally independent from being, given the sui generis nature of our syntax imbued thought (2013, 218):

> So, truth does not involve or require a specific relation of likeness, isomorphism, or agreement between truth-bearers and truth-makers because of the unique structural nature of thoughts and statements. Moreover, Aristotle does not treat the truth predicate as expressing a *causal* or truth-making relation between noetic/linguistic and *ontic* items.[33]

Is there a reason for the co-extensiveness between "*S is F*" *is tru*e and "the universal F is in S?" If there is no reason, Aristotle's use of universals seems to come down to mere preference (Hestir 2013, 218): "Aristotle prefers to keep his *being* immanent." If, however, there is a reason, then we should expect this reason to be an important determinant in the formulation of Aristotle's views on truth. And here we seem to face a kind of Euthyphronic dilemma: Is the assertion "Socrates is pale" true *because* the universal paleness is in Socrates or is the paleness in Socrates because the assertion is true? We know what Aristotle is going to say: it is *because* one is white that we who say this have the truth. And this suggests that it is the paleness in Socrates that *causes* the assertion to be true. It is not that Hestir's reading makes truth-making unintelligible. It is rather that it is difficult to see how a

truth-maker, for *S is F*, when asserted truly, can be anything more than *S is F*. We have an analysis that takes us from "*Snow is white* is true" to a truth-maker. Is the truth-maker in question $TM_{\text{-tarski}}$ or $TM_{\text{-aristotle}}$?

$TM_{\text{-tarski}}$ Snow is white.
$TM_{\text{-aristotle}}$ The universal whiteness is in snow

If there is a reason for going with $TM_{\text{-aristotle}}$, then the content of that reason supplements a theory of truth such that it is no longer Minimalist. For this reason, Minimalists tend to take sentences, or propositions, such as $TM_{\text{-tarski}}$ as basic. And perhaps this is why Hestir takes the view he attributes to Aristotle as (2013, 218 n.89) "not narrowly deflationary or disquotational." But if, moreover, $TM_{\text{-aristotle}}$ is more basic, as Hestir reads it, presumably there is a reason for this. And, if there is a reason for this, that reason will be a constituent in Aristotle's account of truth. And one might be concerned that once that constituent is supplied, we are no longer discussing a Minimalist Theory of Truth.

III.8.4: A Causal Theory of Truth

Our survey heretofore has resulted in several desiderata for an exegesis of Aristotle's views on truth. An account that accommodated the following conditions would be preferable:

(i) The notion of *to be* in Aristotle's definition of truth is copulative.
(ii) States of affairs are mere excrescence.
(iii) Aristotle's ontology of immanent *being* has a role to play as truth-maker within his conception of truth.

I will argue herein that a Causal Theory of Truth can fit the bill. Contemporary Causal Theorists have seen their work as a continuation of the work of Alfred Tarski. Some of Tarski's readers have concluded that Tarski reduced reference to certain semantic notions but neglected to reduce reference therefrom to non-semantical notions (Field 1972). (It is a matter of debate whether this was or should have been Tarski's aim (Putnam 2016).) The work that remains, some have thought, involves a "naturalizing" of denotation. And that is frequently thought to involve a causal theory of reference. So, a theory supplementing Tarski's work in this way will be a Causal Theory of Truth. Chase Wrenn describes the Causal Theory of Truth in the following manner (2015, 83):

> [On the Causal Theory of Truth] Whether a sentence is true on not ultimately depends upon which objects in the world satisfy … which general terms. But it gets by without introducing facts as a new category of reality. To satisfy a

> general term is to have the property it designates. The truth of a sentence thus hinges on what it means and which objects have which properties.

On the view here described, truth ultimately depends upon objects and the properties they have. And this rings reminiscent of Aristotle's view that truth ultimately depends upon substances and their properties (which he takes to be universals). So, the Causal Theory of Truth fits nicely with our third desideratum. Furthermore, the Causal Theory is built with linguistics in mind. So, we have every reason to think it consistent with an account of truth that takes Aristotle's definition of truth as involving a sense of *to be* that is copulative. It looks like, therefore, a classification that can accommodate our first desideratum as well. It also looks helpful in relation to the second desideratum, as Wrenn goes on to say:

> Although truth depends on a claim's connection to reality, that connection is not a matter of corresponding to metaphysically suspicious entities such as facts or states of affairs.

Furthermore, for a term to refer to an object or property is for it to be causally connected to that object or property in the right way. Why does our term "water" refer to water (or H_2O) instead of, say fire, (or, for that matter, Twin Earth's XYZ)? It is because our use of the term "water" is causally connected in the right way to H_2O (Putnam 1975).

Aristotle maintains that it is *because* Socrates is white that we who say this have the truth. And an intuitive way to understand Aristotle here is to think that the universal whiteness (or the singular entity Socrates) is, in some sense, causally responsible for our correct use of the term *whiteness* (or *Socrates*), and it is because the universal whiteness is combined with Socrates, that we who use the terms *Socrates* and *white* (with the copula) have the truth. Of course, Aristotle's causal theory may differ in important ways with contemporary causal theories. But theories of causation may be adjudicated on independent grounds. And, thus, we do well to ask about the extent to which Aristotle's views on reference may be described in causal terms.

There is a very good case, which I will here adumbrate, for reading Aristotle's theory of signification as a causal theory. In Aristotle's treatment of perception in the *De Anima*, successful cases of perceiving occur, when an object possessing an actual quality acts upon the perceptual faculty, resulting in the faculty taking on the *form* of the object (*De Anima* 418a3–6, Smith's translation (1931)):

> As we have said, what has the power of sensation is potentially like what the perceived object is actually; that is, while at the beginning of the process of its

> being acted upon the two interacting factors are dissimilar, at the end the one acted upon is assimilated to the other and identical with it.

In the case of perceiving, the faculty receives the form from the object. And what is the form of an object, for Aristotle, if not a universal? In the case of thinking, the process is analogous (*De Anima* 429a13–18)):

> If thinking is just as perceiving (εἰ δή ἐστι τὸ νοεῖν ὥσπερ τὸ αἰσθάνεσθαι), either the soul would be acted upon by something capable of being thought or something analogous (ἢ πάσχειν τι ἂν εἴη ὑπὸ τοῦ νοητοῦ ἤ τι τοιοῦτον ἕτερον). It is therefore necessary for it to be free from affection (ἀπαθὲς ἄρα δεῖ εἶναι), and capable of receiving the forms (δεκτικὸν δὲ τοῦ εἴδους) ….

With thinking and perceiving alike, the process is described by Aristotle as one where the property an object actually possesses causes a change in the relevant faculty whereby the faculty receives the form of the object. The precise relationship between the form of the object and the receptive faculty is fairly controversial (See Sorabji 2003 and Burnyeat 2003). However, whatever the precise relationship is, it is both intimate and causal. David Charles, for example, describes the process in terms that are favorable to the reading we are presently considering (2000, 82):

> Likening, therefore, is an asymmetrical causal process in which the relevant object or kind (with its form) is (1) the efficient cause of the relevant perception or thought, and (2) explains the general features of the perception or thought (what it is about).

The object, moreover, in *rerum natura* causes a change in the relative faculty in such a way that the faculty receives the form of the object. The form of the object on Aristotle's outlook is a universal. There is a causal connection, therefore, whereby immanent universal is transmitted from world to mind in such a way as to explain what the thought is about. The assertion will make use of that content. The causal connection from immanent universal to assertion is, therefore, fairly direct.

And, so, the case for understanding Aristotle's views on the model of a Causal Theory looks promising. Aristotle's psychology describes a theory of signification that admits of a Causal Analysis, and a Causal Theory of Truth can accommodate our desiderata. Causal theories are built with our linguistic natures in mind, so they are built to fit the copulative use of the verb *to be*. Indeed, the Causal Theory of Truth is sometimes described as involving a copulative *combination* of terms in a way that calls to mind Aristotle's own use of combination and division.[34] States of affairs are otiose on this model.

We are not, however, left thereby without a truth-maker. And that truth-maker is understood in terms of immanent *being*.

III.9: THE PARADOX OF FUTURE CONTINGENCY

There are some philosophers who believe we are under contract with fate, as it were, our actions inexorably driven thereby, despite the fact that we continually deliberate about the future. Many of those who are compelled to accept fatalism are moved by a *locus classsicus* found in Aristotle's *De Interpretatione* II.9. A cursory look at this argument calls into question Aristotle's commitment to the PEM.

Aristotle does not feel compelled to accept fatalism. He rightly complains that an acceptance of fatalism conflicts with the reputable opinion that there is a need to deliberate about our actions (18b26 tr. Ackrill):

> These and others like them are the absurdities that follow if it is necessary, for every affirmation and negation either about universals spoken of universally or about particulars, that one of the opposites be true and the other false, and that nothing of what happens is as chance has it, but everything happens of necessity. So, there would be no need to deliberate or to take trouble (thinking that if we do this, this will happen, but if not, it will not.)

Moreover, fatalism conflicts with the reputable opinion that we are right to deliberate, and, that our deliberation is causally efficacious. So, if there is a way to respond to the fatalist's argument without giving up what is reputable in comparable degree, we should. *The Paradox of Future Contingencies*, as we may call it, may be initially sketched as follows:

(1) It is true that there will be a sea-battle tomorrow or it is true that there will not be a sea-battle tomorrow.
(2) If it is true that there will be a sea-battle tomorrow, necessarily there will be a sea-battle tomorrow.
(3) If it is true that there will not be a sea-battle tomorrow, necessarily there will not be a sea-battle tomorrow.
So: (4) Necessarily there will be a sea-battle tomorrow or necessarily there will not be a sea-battle tomorrow.
So: (5) Whatever happens, happens out of necessity.

The first premise of the argument looks to be nothing less than an instantiation of the PEM. Premises (2) and (3) seem to be motivated by the idea that if *p* is true, it simply can't be the case that *p* is false, provided we hold onto PNC

and PEM. If it is true that there will be a sea-battle tomorrow, it can't also be false that there will be a sea-battle tomorrow, so it *must* be true. Premise (4) draws a conclusion from premises (1), (2), and (3), whereby (1) putatively guarantees that either the antecedent of (2) is satisfied or the antecedent of (3) is satisfied. And the fatalist's conclusion, (5), is simply drawn on the basis that the example of a "sea-battle" was chosen arbitrarily, so that any other event in our universe of discourse may have been chosen in its place.

Now in both prologue and epilogue Aristotle seems to take the solution to be rejecting the idea that it is necessary for exactly one of a pair of contradictory statements to be true and exactly one of the same pair to be false (19a39-b5, cf. 18a34 tr. Ackrill):

> Clearly, then, it is not necessary that of every affirmation and opposite negation one should be true and the other false. For what holds for things that are does not hold for things that are not but may possibly be or not be; with these it is as we have said.

And this makes it sound as if Aristotle is ready to allow for exceptions to PEM—something that in *Book Gamma* Aristotle seems to take hold without exception. And, so, we face yet another exegetical paradox, call it the *Excluded Middle Paradox*:

Claim-G: The PEM is valid for every assertion.
Claim-H: If the PEM is valid for every assertion, the PEM is valid for assertions about contingent events in the future.
Claim-I: The PEM is invalid for assertions about contingent events in the future.

Now it is widely held that the *Paradox of Future Contingencies* turns upon a modal ambiguity. Consider what we might call the Re-Interpretation, where necessity has for its scope the consequents of (2) and (3):

(1r) Nec (It is true that *E* or it is true that not-*E*)
(2r) If it is true that *E*, then Nec *E*
(3r) If it is true that not-*E*, then Nec not-*E*
So: (4r) Nec *E* or Nec not-*E*

If we allow a semantics of possible worlds to work for us, we can understand "Nec *p*" to mean *p is true in every possible world.* So, premise (2r), mutatis mutandis for (3r), can be expressed as follows:

F (2r) If E in the actual world, E is true in each world:
$\{ E^{w@} \} \Rightarrow \{ E^{w1} \} \& \{ E^{w2} \} \& \{ E^{w3} \} \ldots$

Now let the value of E_1, for the moment, be something that is in fact true. It is in fact true that you are presently reading. It is false, however, that you are reading in every possible world. We have, therefore, a counterexample to (2r). Furthermore, let E_2 designate something (that is, I hope, probably) true, namely, that you will be reading 20 seconds from now. It is (probably) true that you will be reading 20 seconds from now. But there is no chance that you are reading 20 seconds from now in every possible world. Hence, we are inclined to think E_1 presents a counter-instance to (2r), and we might be inclined to think E_2 analogous to E_1. (A fatalist might challenge the legitimacy of our first counter-example, in relation to the *Paradox of Future Contingencies*, maintaining that we'd switched the goal posts, in switching tense. Hence the need for E_2.) Of course, if we broaden the scope of "Nec" to cover both antecedent and consequent together, call this the Dicto-Interpretation, our premises will be true. In each world E is true or Not-E is true, so (1d) is true. And, likewise, there is no world where E is true and also not true, so (2d) holds up (same goes mutatis mutandis for (3d)).

$\{ E^{w@} \} \& \{ \text{not-}E^{w1} \} \& \{E^{w2}\} \& \{ E^{w3} \} \ldots$
T (1d) In each world, E is true or Not-E is true.
T (2d) In each world, If E is true, then E is true.
T (3d) In each world, If Not-E is true, then Not-E is true.

But the problem now, of course, is that our conclusion seems to be false. The first disjunct in (4d) is false. There is some world where E is false.[35] And the second disjunct is false because there is an accessible world, to wit, the actual, where E is true. It looks as if anyway we slice it the argument is unsound.

F (4d) In each world E or in each world not-E:

Aristotle begins and ends the chapter by saying: "that it is simply not necessary that of every affirmation and opposite negation one should be true and the other false." And Aristotle's statement is difficult to make out here if his real intention is to question the validity of the argument rather than the truth of its first premise. In favor of the interpretation wherein Aristotle is read as targeting the first premise, some argue that Aristotle believes claims about events in the future are not yet true. As a result, many have taken this to mean that Aristotle is at least willing to concede some ground on bivalence.[36] Placing restrictions upon bivalence does not require serious emendation of PEM. We can understand PEM to be restricted to what is true or false. If we concede ground on bivalence, admitting assertions that are neither true nor false, PEM will simply not extend thereto. Indeed, at 19a3 we find Aristotle saying the following (tr. Ackrill):

> This happens with things that are not always so or are not always not so. With these it is necessary for one or the other of the contradictories to be true or false—not, however, this one or that one, but as chance has it; or for one to be true rather than the other *yet not already true or false* (οὐ μέντοι ἤδη ἀληθῆ ἢ ψευδῆ).[37]

Still, as Gail Fine has pointed out, ἤδη can be read non-temporally here, so that the last clause reads *but not thereby true or false*. And as C.W.A. Whittaker points out, the view that reads Aristotle as giving up bivalence does not do justice to Aristotle's expressed interest in understanding the claims in question to be contradictory pairs (2008, 117). Whittaker (2008, 116) reads the move in premises (2) and (3) as a move from the "truth of an assertion about the future to the reality of the future, following the principle that if an assertion is true, then the state of affairs referred to by it is real." And, thus, Whittaker understands the premises in question rather as (*ibid.*):

(2w) If it is true to say E, then it is necessary for E to be.
(3w) If it is true to say not-E, then it is necessary for not-E to be.

The necessity involved in (2w) and (3w), I take it, is whatever necessity is involved in the relation of a true statement and the "state of affairs" to which it relates.[38] And our statement of E will be indexed to one and the same world for antecedent and consequent, given that it is said to correspond to a given world:

(2w*) If it is true to say "E" of W1, then it is necessary for E to be the case in W1.
(3w*) If it is true to say "not-E" of W1, then it is necessary for not-E to be in W1.

So far as (2w*) (and mutatis mutandis for (3w*)) goes, the problematic claim in the consequent that E will be the case, in every world given a satisfied antecedent, is bypassed. And this looks like a significant improvement of the Fatalist's argument. One small fly in the ointment might be the following. If we consider the antecedents of (2w*) and (3w*) respectively, it appears that the worlds referred to respectively are not the same world. Each world contains a truth that the other lacks. Hence, they cannot be the same world. And one might become concerned that we thereby invite equivocation. One might be able to rephrase the argument as follows:

(1*) We are in either in a World where "E" is true or a World where "Not-E" is true.
(2*) If we are in a World where "E" is true, E is necessarily the case in the world we are in.

(3*) If we are in a World where "not-E" is true, not-E is necessarily the case in the world we are in.
So: (4*) E is necessarily the case in the world we are in or not-E is necessarily the case in the world we are in.

We may not know which world we are in, but we know that we are in the one we are in. So, if something akin to the above captures Whittaker's understanding of the argument, are we left with the unwelcome, fatalist conclusion, as expressed in (4)?

Whittaker reads Aristotle as targeting the first premise of the Paradox of Future Contingencies. "The point," Whittaker says (124), "is that one member of the contradictory pair is true and one is false, but it is not settled which is which." One would like to know, of course, by what or whom it is settled? But we can simply assume *ad arguendo* that something (other than fate) settles which of a contradictory pair is true and which is false. Does Whittaker's reading leave Aristotle with a solution to the Paradox of Future Contingencies? One might argue that we face the Paradox in slightly different dress (stated here without all the indices):

(1) It is either true that it will be settled that E or it will be true that it will be settled that not-E.
(2) If it is true that it is settled that E, necessarily it is settled that E.
(3) If it is true that it is settled that not-E, necessarily it is settled that not-E.
So: (4) Necessarily it is settled that E or Necessarily it is settled that not-E.

Perhaps it is true that it will be settled that E or true that it will be settled that not-E, and that one of these contradictory pairs is true and one is false, but it has not yet been *settled that it will be settled* that E or that it will be settled that not-E. We thereby invite regress—be it vicious or otherwise.

Now at least one commentator has read Aristotle as pointing to the very scope issue that we discussed at the outset of this section. Gail Fine argues that Aristotle distinguishes between necessitas consequentis and necessitas consequentiae at 19a23–9 (tr. Ackrill):

> What is, necessarily is, when it is; and what is not, necessarily is not, when it is not. But not everything that is, necessarily is; and not everything that is not, necessarily is not. For to say that everything that is, is of necessity, when it is, is not the same as saying unconditionally that it is of necessity. Similarly, with what is not. And the same account holds for contradictories: *everything necessarily is or is not, and will be or will not be; but one cannot divide and say that one or the other is necessary.* I mean for example: it is necessary for there to be or not to be a sea-battle tomorrow; but it is not necessary for a sea-battle to take place tomorrow nor for one not to take place. So, since statements are true

> according how the actual things are, it is clear that wherever these are such as to allow of contraries as chance has it, the same also holds for the contradictories also.

If we consider the italicized phrase in the passage it looks as if Aristotle accepts (1d) and rejects (4d) for reasons similar in kind to those we cited in treating the Re-Interpretation and the Dicto-Interpretation. His view seems to be that the necessity governing the disjunction in the first premise may not be validly distributed (divided) into the disjuncts as expressed in the conclusion. On Fine's view, Aristotle's problem with the argument is that it is a non-sequitur. And, if she is correct, we have an effective response to the *Excluded Middle Paradox*. Aristotle is simply not committed to putting any troublesome restrictions on PEM.[39] Of course this means that we owe an effective explanation, concerning why Aristotle seems to take the *Paradox of Future Contingencies* to be a problem for the view that, for contradictory pairs, exactly one is true and exactly one is false.

III.10: PREDICTION, RETRO-DICTION, AND REALITY

In *Book Gamma*, it bears mentioning, Aristotle seems to think that prediction poses a problem for Protagoreans (Ross 1908, 1010b13–14):

> And again with regard to the future, as Plato says, surely the opinion of the physician and that of the ignorant man are not equally weighty, for instance on the question whether a man will get well or not.

Aristotle's Protagoreans are committed to the view that every opinion is as good as the next. But this view is not reputable, as we turn to the physician for predictions about whether we, or our children, will become well or not. And here we have a case where we take one statement of a contradictory pair to be true and one statement of that same pair to be false. At 1011b1 (Ross 1908) Aristotle says:

> And as has been said before, they must make everything relative—relative to opinion and perception, so that nothing either has come to be or will be without some one's first thinking so. But if things have come to be or will be, evidently not all things will be relative to opinion (εἰ δὲ γέγονεν ἢ ἔσται, δῆλον ὅτι οὐκ ἂν εἴη ἅπαντα πρὸς δόξαν).

We tend to think that some events occur without our first thinking of them—especially those in the past and the future. It may be difficult to name a present event that is independent of our thought. Once we name it, we are thinking about it. However, so long as we are surprised by the future (or, say, mournful of the past) we presuppose that not all is relative to opinion. Ergo, our practices with

prediction provide some evidence for the idea that there is a reality independent of us.[40] And the idea that there is a reality independent of us provides some reason for thinking that the truth of *p* is not affected by our ability to determine that *p*.

III.11: ALETHIC EXTREMISM, PERITROPE CONSIDERATIONS, AND THE UNMOVED MOVER

The last chapter of *Book Gamma* opens with a wise recommendation commonly associated with Aristotle (and Apollo)—extremes are to be avoided. In view of the distinctions (διωρισμένων) he has provided it is clear that (φανερὸν ὅτι) those who, on the one hand, take everything to be true are in error and those who take nothing to be true are equally in error. And if we are going to engage with extremists, Aristotle recommends that we insist that our interlocutors mean something and mean it definitively (Ross 1908, 1012b5–7):

> But against all such views we must postulate, as we said above, not that something is or is not, but that something has a meaning, so that we must argue from a definition, viz. by assuming what falsity or truth means.

And Aristotle is confident that if we start with the right definition, namely the definition that he stated in the penultimate chapter of *Book Gamma*, we will arrive at the view that exactly one claim in a contradictory pair is true and exactly one is false. So that not every claim is true and that equally not every claim is false.

In fact, Aristotle takes the extreme views he is considering to be self-refuting (1012b11–16). The person who says that everything is true makes the statement of his opponent, who says that not everything is true, also true. The person who states that everything is false, has thereby stated to be false, the very thesis that *everything is false*. Aristotle recognizes that theorists frequently attempt to provide exemptions for their position from self-referential implications. But he seems to think that acceptance of one unequivocal claim invites a great many more.

Book Gamma closes with an abrupt shift to a discussion of physics. As Alexander says (Madigan tr. 2013): "This section is found in certain [witnesses], as being proper to natural philosophy." However, as Alexander points out, Aristotle seems to be giving, as we have seen is his custom, an etiology of the views of his alethic extremists (Ross 1908, 1012b22–26).

> Evidently, again, those who say all things are at rest are not right, nor are those who say all things are in movement. For if all things are at rest, the same

> statements will always be true and the same always false—but this obviously changes; for he who makes a statement, himself at one time was not and again will not be. And if all things are in motion, nothing will be true.

The premise "for he who makes a statement himself at one time was not and again will not be" is cryptic even by Aristotle's standards. Kirwan (2003, 121) says that Aristotle is within his right to say that the truth-value of an assertion may change, but that it is a little unreasonable to conclude that the truth-value of an assertion changes in virtue of the speaker's dying. I would conjecture that Aristotle is not advancing a great deal of semantic theory here, but, rather thinking that the speaker who asserts that all things are at rest, is not himself at rest, as there was a time at which he was not and there is a time at which he will not be. When he moves to the other extreme view, that everything is in motion, he does not rely upon a complex semantic theory, but, rather, appeals to physics. He maintains that change itself requires a stable substrate, and he goes on to refer his reader to a paradigmatic example—The Unmoved Mover (1012b30–34):

> But again it is not the case that all things are at rest or in motion sometimes, and nothing forever, for there is something which always moves the things that are in motion (ἔστι γάρ τι ὃ ἀεὶ κινεῖ τὰ κινούμενα), and the first mover must itself be unmoved (καὶ τὸ πρῶτον κινοῦν ἀκίνητον αὐτό).

NOTES

1. Providing exegesis on the philosophy of Aristotle's predecessor exceeds the scope and nature of this project. I concern myself here with attempting to understand the reasons for Aristotle's interpretations of his predecessors, and how his interpretations contribute to *his* philosophy.

2. And, yet, at 1012a24 we read Aristotle saying: "It seems that while Heraclitus' thesis, which says that everything is and is not, makes everything true, that of Anaxagoras, that there is something in the middle of a contradiction, makes everything false; for when things are mixed the mixture is neither good nor not good, so that there is nothing true to be said." If Anaxagoras' position were to have it that everything is false, his position would seem to be in opposition with the view associated with Protagoras.

3. I think Alexander gets a little worried that we *don't* have a contradiction here, as the objects in question have being in one respect (that of being composed of atoms) and non-being in another (that of containing void) (Madigan 2013, 304, 3–9):

> He may also be saying how it followed for Democritus, who said that the full is being, the void is non-being, and that these are in like manner in all things from which the coming-to-be takes place, that he said that in each case the contradictories "is the case" and "is not the case" are true. And yet, this is not a contradiction, given that each thing is a being in

> one respect—in respect of its being full of the things that are in it—but a non-being in another respect—in respect of [its containing] void. Or, he adds the words "being" and "non-being" to indicate that these things, which are in like manner mixed in all things, are opposed and contrary.

X has being in the respect of being composed of atoms and X has non-being in the respect of admitting of void. But this is not to say that X has being in the respect of being composed of atoms and X has non-being in the respect of not being composed of atoms. He suggests that Aristotle reads Democritus as saying that void and non-void are mixed right up with one another, and this helps to explain why Anaxagoras and Democritus are lumped together. And this seems to be Aristotle's interpretation of Democritus (100a29): "he says the void and the full exist alike in every part." Given that Alexander's reading frees Democritus of a view that is likely inconceivable, however, one wonders why Aristotle settled upon the reading he does.

4. The idea that the less perfect is understood in terms of the more perfect is eloquently expressed by Michael Frede (1987, 89):

> There is also the notion, reflected in Aristotle in various ways, that lower forms of being somehow imitate higher forms of being. Animals procreate; this is their way of sharing in the eternal. The heaven eternally rotates to imitate, as well as it can, the unchanging nature of the unmoved mover, as if everything was like him in the limited way it could be.

5. Lee (2005), I think rightly, refers to the argument as a problem of decidability. But I believe she reads it in different terms than do I.

6. It also may also ring reminiscent of the Aviary Simile in Plato's *Theaetetus*. On the relationship between Aristotle's views and those expressed in the *Theaetetus* see Lee (2005).

7. He concedes that the argument is inconclusive (97), but he thinks it "has much persuasive force, provided we always accept the ruling that when a physical object appears in any way other than it is, it is not itself directly perceived."

8. As Kenny puts it (193), "if a thing looks heavy, I may correct this impression, and abandon any claim that is heavy, by feeling its weight with my hand."

9. Kirwan says that 1010a1 has a Platonic air, but I see it less there than here.

10. In the argument that follows, Aristotle focuses upon the affections of the perceiver.

11. I'm seeing the problem here as somewhat analogous to a problem discussed by David Lewis (1986) in "Counterfactual Dependence and Time's Arrow." Lewis considers the counterfactual *If Nixon had pushed the button, there would have been a nuclear holocaust*. If we think the statement is true, we face a problem. The world where the consequent obtains, so to speak, is so radically different from the actual world, that a world where antecedent obtains and the consequent does not, in virtue of, say, a malfunction in the device related to the button, better resembles the actual world than a world where antecedent and consequent both obtain.

12. I think that the possibility that there is nothing rather than something is sometimes thought to be a problem for Truth-Maker theorists. See Lewis (1999a, 220).

13. Madigan supplies Alexander with "aware" in the following way (108): "For the senses do not come to be [aware] of themselves …." There is no Greek verb corresponding to "aware" in Hayduck's edition of Alexander's Commentary.

14. It may be the case, however, that Aristotle believes that it is his opponents who have failed to distinguish between sensation and awareness. Victor Caston, in an extremely persuasive paper, has argued that Aristotle finds problematic the idea, which he attributes to his opponents, that a mental state and the cause thereof should be identified with what the state is about (1996). Caston maintains that Aristotle introduces *phantasia* precisely for the reason of explaining how error can occur, given his views concerning the reliability of the senses.

15. But perhaps not a naïve realist.

16. Cf. David Lewis (1999a, 218).

17. Wittgenstein goes on to argue, if I understand him correctly, that the simile breaks down in the following way. We can understand what a point on the paper is, even if we do not know what black and white are, but we do not understand a proposition in our discourse without knowing what true and false are. Cf. Dummett (1978a, 2).

18. Cf. *Metaphysics* 1017a31, *Categories* 2a7–10.

19. See Gonzalo Rodriguez-Pereyra (2015) for example. Though in this case states of affairs are countenanced, and I will argue below that states of affairs are mere detritus.

20. John Bigelow (1988, 122).

21. Chief among those difficulties is accounting for negative truths.

22. In contrast not only to his contemporaries but Nelson Goodman (1978) and Hillary Putnam (1983).

23. See W.V.O. Quine's (1969) "Ontological Relativity" and Hillary Putnam's (1981) "A Problem with Reference."

24. See Kris McDaniels (2009) and Theodore Sider (2009).

25. It is difficult to exaggerate the influence of Aristotle's definition of truth, when one considers the role Tarski's conception of truth has played, for instance, in truth-theoretic semantics. The influence of Aristotle's definition, and his philosophy more generally, upon Tarski and his Polish predecessors is usefully chronicled in Murawski and Wolenski (2008).

26. Tarski must mean something like "… original Aristotelian formulation …" here.

27. Quine (2008, 130): "*Semantics* would be a good name for a theory of meaning, were it not for the fact that some of the best work in so-called semantics, notably Tarski's, belongs to the theory of reference."

28. Tarski's approach to the Liar Antinomy may be adumbrated as follows: Consider a sentence that seems to says of itself that it is false:

(1) The sentence numbered (1) is false.

One might worry that if (1) is false, and says as much about itself, (1) is true. If true, however, given that is says otherwise of itself, (1) is false. So, one can worry that (1) is true if and only if false. Tarski recommends that we distinguish between the language for which truth is being discussed (Object Language) from the language in which truth is being discussed (Metalanguage). One can therefore say:

(1*) The sentence numbered (1*) is false in Lo.

But then (1*) is a statement made in a language Lm that is about Lo. And since (1*) is a sentence in Lm there is no threat that it will be true and false in Lo.

29. In connection with the *correspondence-as-mirroring* account (137), Crivelli says that "each class of assertions in Aristotle's theory of truth is singled out by a property of asserting that the attribute on which it is mapped obtains … [which] brings it about that Aristotle's theory of truth … regards an assertion as true when and only when it 'asserts is object to be as it is.'" This makes it sound as if he understands some states of affairs to obtain and some states of affairs not to obtain.

30. But see Crivelli (2004, 134, n.23) for a possible objection to this approach.

31. There are a couple of objections to (VR) that I am not moved by. Crivelli objects to (VR) by maintaining that (VR) is parochial in its own way, as it will not apply to existential assertions. If we have predicative assertions that we know are true, we get existential assertions on the cheap by way of existential generalization: Socrates is a philosopher. So: There is an x such that x is a philosopher. Hestir (209–10) presents an objection to (VR) that seems prima facie worrisome: Suppose Socrates is not pale and we assert "Socrates is not pale." It is the case that he is not pale, for:

T (1) We have said of *that which is not* that it is not.

We produce a true statement. However, treat "that which is not" veridically and (1) is converted to (2):

(2) We have said of *that which is not the case* that it is not the case.

The italicized phrase in (1) is of course satisfied by *Socrates is not p*ale. So, if (2) is an adequate paraphrase of (1) we should be able to substitute *Socrates is not* pale for the italicized phrase in (2) to yield (3):

F (3) We have said of *Socrates is not pale* that it is not the case.

And, thereby, we say, according to Hestir, something false. The lesson to glean, so runs the argument, is that we need to reject (VR). However, it would seem that Hestir has simply shown that one cannot move freely from a copulative use of *to be* to a veridical use. The advocate of (VR) should not agree to (1) unless it is elliptical for an unproblematic (4):

(4) We have said of what is the case (to wit that Socrates is not pale) that it is the case.

32. So long as we are talking only of the truth of single sentence we can make the truth-predicate disappear via the Tarski Equivalence Principle. Sometimes we prefer, however, to generalize from "Tom is mortal or Tom is not mortal & Dick is mortal or Dick is not mortal & Fred is mortal or Fred is not mortal" to "Sentences of the form p or ~ p are true." Hence the usefulness of a truth-predicate for sentences (Quine 1970, 10–13).

33. My italics.

34. See, for example (Wrenn 2015, 81): "For example, we can combine 'snow' and 'white' (along with the grammatically necessary 'is') to form the sentence 'Snow is white.'"

35. An accessible world, that is, *pace* Necessitarians.

36. Thus, Kneale and Kneale (1984, 47): "It is important to make the distinction here for what Aristotle appears to be doing in this chapter is to question the Principle of Bivalence while accepting the Law of Excluded Middle …."

37. See Fine (1984, 35) where it is maintained that: " 'ἤδη'… does not, as the traditional interpretation assumes, here have the force of 'already,' taken temporally. It is instead read to mean 'thereby': although one of P and ~P is more true than the other, it does not follow thereby (ἤδη) that the more true proposition is true on any given occasion; the less true might be true instead."

38. I take the relation to be logical. As I argued above, Aristotle has a view that countenances both semantic ascent and semantic descent. And I take these to be logical relations.

39. I will bypass the issue that concerns what Aristotle says about universals not spoken of universally in the *De Interpretatione*.

40. But see Dummett (18–19): "If we think that mathematical results are in some sense imposed on us from without, we could have a picture of a mathematical reality not already in existence but as it were coming into being as we probe. Our investigations bring into existence what was not there before, but what they bring into existence is not of our own making. Whether this picture is right or wrong for mathematics, it is available for other region of reality as an alternative to the realist conception of the world."

Appendix A

Aristotle and the Liar Paradox

Aristotle says just enough, in the *Sophistical Refutations*, in a statement resembling the Liar Paradox, that one can feel the temptation to ask *what might Aristotle have to say about the Liar Paradox?* I succumb to that temptation herein. There is, I submit, some value in asking this question. The Liar Paradox has played an important role in framing discussions concerning some key topics. As Aristotle argues in *Metaphysics*, chapter 4 of *Book Gamma*, there is hardly a better candidate for a self-evident principle than the Principle of Non-Contradiction (PNC). And some have thought that the Liar Paradox makes that principle a little less evident. Contemporary work on the Liar Paradox tends to focus on sentences (and to a lesser extent propositions) such as the following:

(L) This sentence is false.

If (L) is false, then what (L) states about itself is the case. If what (L) states about itself is the case, and statements are true when they state what is the case, then (L) is true. So, if (L) is false, (L) is true. If (L) is true, and (L) states of itself that it is false, what is stated is not the case. And if what (L) states is not the case, then (L) is false. Hence, (L) is false if and only if (L) is true; and we seem to have a sentence in our language that is both true and false. (While the contemporary focus is upon sentences, in antiquity, as we will see, philosophers placed more emphasis on the utterances of speakers.)

The paradox is important in relation to some key philosophical discussions, including those concerning relations of necessity and contingency, analyticity, meaning, the very possibility of a priori knowledge, truth and truth-value, consistency and completeness, and the list may be continued. Needless to say, some take a dismissive approach to the Liar Paradox. However, even

here one finds results. As one cannot effectively argue in a deflationary manner without discussing the mistakes upon which a mistaken question rests. Testing Aristotle's views in relation to the paradox, therefore, even if he may have said little directly about it, may prove worthwhile. For point of reference, the focal statement from the *Sophistical Refutations* is the following (on the Forster & Furley translation (1955)):

> The argument is similar which deals with the question whether the same man can say what is at the same time both true and false; but it presents apparent difficulties because it is not easy to see whether the qualification "absolutely" should be applied to "true" or to "false." But there is no reason why the same man should not be absolutely a liar yet tell the truth in some respects, or that some of a man's words should be true but he himself not be truthful. (181b2-b8)

IV.1: SOURCES FOR THE LIAR PARADOX IN ANTIQUITY

That Aristotle was familiar with the Liar Paradox is, as we will see, fairly underdetermined by the evidence that one may glean from his works.[1] One might be able to supplement that evidence, and also better understand the form that the Liar Paradox took, were one to find ancient sources of the Liar Paradox with connections to Aristotle.

Epimenides' name is sometimes associated with the Liar Paradox, because he seems to have (i) been a Cretan and (ii) stated (in verse): All Cretans are liars.[2] This remark is famously referenced by the author of the Epistle to Titus (*Titus* I,12). The irony was probably lost on few. It seems, however, that Epimenides did not intend to generate a paradox, or make a point about logic or semantics, as the lie in question seems to involve a Cretan tendency to deny the immortality of Zeus. And while the irony is hard to miss, the precise way in which the statement is supposed to be paradoxical is hard to locate. Let's call this the Epimenides Paradox and consider it distinct from the Liar Paradox. This I take as the reasoning of the former:

i. Epimenides the Cretan says *Cretans are always liars*, and he is a Cretan, so he must be saying something false.
ii. It is thought that the falsehood of *Cretans are always liars* entails *all Cretans are always not liars*.
iii. Epimenides, therefore, is always not a liar.
iv. And this is thought to entail that when he says *Cretans are always liars*, he is telling the truth.
v. So, he is lying if and only if he is telling the truth.

The inference at (ii) is, of course, fallacious. There are at least two ways to lie when saying *Cretans are always Liars.*

L_1 Cretans are *not always* liars.
L_2 Cretans are *always not* liars.

The falsehood of *Cretans are always liars* entails (L_1) but not (L_2). Of course, L_1 does not entail (iii), that our Cretan is always not a liar, as (L_1), *Cretans are not always liars*, does not rule out that Epimenides, as it were, is presently not lying.

The Epimenides Paradox, as I am presently calling it, is not the toughest nut to crack. It involves a conflation of contraries with contradictories, for (L_1) is the contradictory of Epimenides' statement and (L_2) is the contrary. As we will see, Aristotle is quite familiar with the fallacy here. So, if the focal text refers to the Epimenides Paradox, we have a pretty good idea how Aristotle would respond. The Liar Paradox, however, is a formidable insoluble. To say that it would be valuable to know Aristotle's thoughts on the Liar Paradox moreover is an understatement.

Diogenes Laertius attributes something he calls the Liar Paradox to Eubulides (II.108):

> Within the school of Euclides there is Eubulides of Miletus, who propounded many arguments in a dialectical manner: The Liar (τόν τε ψευδόμενον), The Disguised τὸν διαλανθάνοντα, The Electra, The Veiled Figure ἐγκεκαλυμμένον, The Sorites (σωρίτην), The Horned One (κερατίνην), and The Bald Head (φαλακρόν).

Diogenes goes on to say that Eubulides used to quarrel with Aristotle (πρὸς Ἀριστοτέλην διεφέρετο), and that he also did much to discredit him (καὶ πολλὰ αὐτὸν διαβέβληκε).[3] Did Eubulides make use of the Epimenides Paradox or did he propound the Liar Paradox? It is anyone's conjecture. But Cicero, who arguably had better resources to draw upon than we do, seems, in the *Academica*, to articulate something resembling the Liar Paradox as follows (II.96):

> If you say that you are speaking falsely and you speak the truth, you are speaking falsely (Si dicis te mentiri verumque, mentiris); but you do say that you are speaking falsely and speak the truth (dicis autem te mentiri verumque dicis); hence you are speaking falsely (mentiris igitur).[4]

A nice feature of Cicero's statement is that it does not make use of, as did the Epimenides Paradox, the modal operator *always*, but, instead, the modal operator *now*. In fact, Cicero compares the following two syllogisms:

First Syllogism:	Second Syllogism:
If you say that it is light *nunc* and speak the truth, it is light.	If you say that you are speaking falsely and speak the truth, you are speaking falsely.
But you do say that it is light *nunc* and speak the truth hence, it is light.	But you do say that you are speaking falsely and speak the truth hence, you are speaking falsely

Very roughly put, Cicero argues that his interlocutor accepts the former as a syllogism, and should, by parity of reason, accept the latter. He seems to take the latter to drive one toward the claim that not every disjunction with contrary disjuncts is true, and this, apparently, scores a point for Academic Skepticism. In the former syllogism Cicero is making a claim about a singular, present, event. As Walter Cavini has argued (1993, 99), he is not, as might be the case in the Epimenides Paradox, talking about someone's habitual lying. Cavini also points out that Cicero adumbrates the latter syllogism in Lucullus 2.95 by saying: "If you speak falsely and *at the same time* you speak truly (Si te mentiri dicis *idque* verum dicis), you speak falsely (mentiris)." Cicero's use of "idque" further supports the idea that Cicero has in mind a speaker's singular utterance rather than a habitual disposition of a speaker akin to what one finds in the Epimenides Paradox. Even so, any reference to the Liar Paradox in Cicero's remarks here is elliptical. We seem to have half of the paradox with:

(1) If you speak truly and you say you are speaking falsely, you speak falsely (si dicis te mentiri verumque dicis, mentiris).

What we need to fully tie the knot, to wit, that one speaks truly if and only if one speaks falsely, is another conditional:

(2) If you speak falsely and you say that you are speaking falsely, you speak truly (si dicis mentiri et mentiri, verum dicis).

Several commentators have argued that the gap should be filled with something akin to (2).[5] And we get something like this in Gellius' *Attic Nights* (XVIII.2, 11): Cum mentior et mentiri me dico, mentior an verum dico? (When I speak falsely and I say I speak falsely, do I speak truly?) It is, I think, interesting that the remark is embedded in a brief section referencing certain sophistical refutations (tr. Rolfe, 1927):

> In the third place this was asked, in what words the fallacy of the following catches consisted and how they could be made out and explained: "What you have not lost, that you have. You have not lost horns; therefore, you have horns." Also, another catch: "What I am, that you are not. I am a man; therefore,

> you are not a man." Then it was inquired what was the solution of this sophistry: "When I lie and admit that I lie, do I lie or speak the truth?

It is interesting that two of the three fallacies here mentioned are mentioned in chapter 25 of *Sophistical Refutation*. And immediately after maintaining that his argument raises trouble for the Stoics, Cicero goes on to say that these difficulties were developed by Chrysippus, and even he could not provide solutions (Haec Chrysippea sunt, ne ab ipso quidem dissolute). As Paolo Crivelli has argued, relying upon a damaged piece of papyrus that has been handed down, there is some reason to think that Chrysippus had *Sophistical Refutations*, 180a23–4, in mind, in discussing the Liar Paradox (2004, 146). Here is Crivelli's translation (2004, 145) of Marrone's text (Marrone 1997):

> Other arguments tell against the preceding claim [sc. The claim that the same man will both keep and break his oath][6] and the claim that they will be speaking falsely and speaking truly at the same time (ψεύσεσθαι αὐτοὺς ἅμα καὶ ἀληθεύειν). In all claims of this sort on one occasion there are things said absolutely, on another with something further being expressed together in addition.

Chrysippus, in this fragment, as Crivelli argues, seems to appeal to a distinction nowadays referred to as *Secundum quid et Simpliciter*, and *Sophistical Refutations* 180a23–24 is a *locus classicus* for it. Further, Chrysippus' language rings reminiscent of Aristotle's ψεύδεσθαι τὸν αὐτὸν ἅμα καὶ ἀληθεύειν. Furthermore, as Crivelli points out, Chrysippus describes a solution to the Liar "according to the ancients," and there are later texts wherein authors refer to the Peripatetics as the ancients. Because Theophrastis, Aristotle's student, wrote a work of several volumes titled *On the Liar*, the "ancient" who Chrysippus had in mind was probably Theophrastis. And, of course, it is not insignificant that Theophrastis wrote extensively, three volumes to be precise, on the Liar. It seems unlikely that Theophrastis would devote such energy to a topic to which Aristotle was not privy. It seems equally improbable that Theophrastis would devote three volumes to a strawman version of the sophism. In what follows, I will conjecture, at least for the sake of inquiry, that Aristotle was aware of the Liar Paradox. Of course, this assumption is extremely underdetermined by the evidence. There is just enough evidence, however, to lead one to ask how Aristotle would approach the Liar Paradox, were he familiar with it.[7]

IV.2: SOPHISTICAL REFUTATIONS AND THE LIAR

In chapter 25 of *Sophistical Refutations*, Aristotle considers a scenario wherein one individual has sworn an oath—an oath, to wit, to break his oath.

Another scenario that he considers involves a case where a subordinate is told, by his superior no less, to disobey his superior.

> Is it possible for the same person to keep and break his oath at once? Is it possible for the same person at the same time to obey and disobey him? Or is it not the same to be something and to be? (For it is not the case that that which is not is unconditionally, if it is something.) It is not that if one keeps this particular oath or in this particular way it is necessary also to be a keeper of oaths (οὔτ᾽ εἰ εὐορκεῖ τόδε ἢ τῇδε, ἀνάγκη καὶ εὐορκεῖν), but the one having sworn to swear falsely swears truly this alone amidst false swearing (ὁ δ᾽ ὀμόσας ἐπιορκήσειν εὐορκεῖ ἐπιορκῶν τοῦτο μόνον), but is not a keeper of oaths (εὐορκεῖ δὲ οὔ), nor is he who disobeys obedient (οὐδ᾽ ὁ ἀπειθῶν πείθεται), ἀλλά τι πείθεται (but he obeys something) … (180a32–180b1).

The scenarios that Aristotle here describes seem to involve some apparent self-referential bewilderment. With some ingenuity, these cases can be seen as precursors to the Liar Paradox. In the case which I will call the Obedience Sophism, it seems that the subordinate will, *in some sense*, be obeying in disobeying and disobeying in obeying. In the case I refer to as the Oath Sophism, it appears that in oath-keeping the individual will, in some sense, be oath-breaking and in oath-breaking the individual will be oath-keeping. It is not uninteresting, therefore, that Aristotle goes on, in our focal text, to say the following (Forster & Furley translation (1955), 180b1–180b6):

> The argument is similar which deals with the question whether the same man can say what is at the same time both true and false (ὅμοιος δ᾽ ὁ λόγος καὶ περὶ τοῦ ψεύδεσθαι τὸν αὐτὸν ἅμα καὶ ἀληθεύειν); but it presents apparent difficulties because it is not easy to see whether the qualification "absolutely" should be applied to "true" or to "false." But there is no reason why the same man should not be absolutely a liar yet tell the truth in some respects, or that some of a man's words should be true but he himself not be truthful. (181b2-b8)

Precisely what the reasons are for thinking the man at once able to speak falsely and truly are not disclosed. But Aristotle clearly believes the reasons are usefully compared to those involved with the Oath Sophism and the Obedience Sophism. Given that the logical forms of these bear a resemblance to the logical form associated with the Liar Paradox, perhaps there is something to the impression that Aristotle references here the Liar Paradox.

IV.3: SECUNDUM QUID ET SIMPLICITER

Aristotle treats a number of dialectical fallacies in succession by appeal to the *Secundum Quid et Simpliciter* distinction in chapter 25 of *Sophistical*

Refutations. He also discusses the fallacy associated with the distinction, perhaps with more clarity, in chapter 5 (166b37–167a6):

> Fallacies due to something being said either without qualification or in some way and not strictly (οἱ δὲ παρὰ τὸ ἁπλῶς τόδε ἢ πῇ λέγεσθαι καὶ μὴ κυρίως) result when what is said in part is taken as said without qualification (ὅταν τὸ ἐν μέρει λεγόμενον ὡς ἁπλῶς αεἰρημένον ληφθῇ), for example, "if *what is not* is the object of belief, then *what is not* is." For not to be something and not to be without qualification are not the same (οὐ γὰρ ταὐτὸ μὴ εἶναί τι καὶ ἁπλῶς μὴ εἶναι). Or again, that "what is not is, if it is not something of those which are, for example, if not a human." For not to be something and not to be without qualification are not the same. But they appear in virtue of the nearness of the expression, to differ little i.e., being something of being, and not being something of not being.

Aristotle here distinguishes two kinds of fallacy. I will illustrate what I take to be his point as follows. A dialectical conversation might run as follows:

(1) Inquisitor: Your position is that *there are not* goat-stags.
(2) Interlocutor: Yes.
(3) Inquisitor: Do you think of goat-stags?
(4) Interlocutor: Yes, all the time.
(5) Inquisitor: So, for you *there are* goat-stags as the object of your thought.
(6) Interlocutor: Yes, indeed.
(7) Inquisitor: So, my dearest friend, *there are no*t goat-stags as you say and *there are* goat-stags as you think.
(8) Interlocutor: Um-kay.
(9) Inquisitor: So, *there are* and *are not* goat-stags is the consequence of your position.

And so here we have a sophistical refutation. And Aristotle would disambiguate the expression, of course, emphasizing the ways in which *they are* and *are not*. And, so, the student of Aristotle's *Sophistical Refutations* will respond by emending her answers as follows:

(1a) There are not goat-stags without qualification.
(5a) There are goat-stags with the qualification that we are restricting, say, quantification to the objects of our thoughts.
So: (9a) There are goat-stags with the qualification that we are restricting quantification to the objects of our thoughts and there are not goat-stags without qualification.

And, of course, (9a), sounds more respectable than (9). Aristotle also discusses another form of the fallacy in question, another form where existential

being is conflated with predicational being, such that *things that are* are conflated with *things that are F*. One might illustrate Aristotle's point as follows:

(1) Inquisitor: Your position is that Callias belongs to the things *that are* (τῶν ὄντων).
(2) Interlocutor: Yes.
(3) Inquisitor: Do you agree that Callias belongs to the things *that are not* musical.
(4) Interlocutor: Yes.
(5) Inquisitor: So, on your view Callias belongs to the *things that are* and Callias also belongs to the *things that are not.*

And, similar to above, Aristotle recommends that we understand (3) to involve qualifications that are not present in (1), so that we conclude, in place of (5), that Callias belongs to the things that are *simpliciter* and Callias belongs to the things that are not pale or musical *secundum quid*. Where the two fallacies considered heretofore seem to turn upon a conflation of existential and predicative being, a third variety of Secundum Quid involves a conflation of qualified predicational being with unqualified predicational being (Schreiber 2003, 142–143). Aristotle's example, on the Forster Furley Translations, runs as follows ((167a8–13):

> In like manner when something is predicated in a certain respect and absolutely; for example, "If an Indian, being black all over, is white in respect of his teeth, then he is white and not white." Or if both attributes belong in a certain respect, they say that the contrary attributes belong simultaneously. In some cases, this sort of fallacy can be easily perceived by anyone; if, for example, after securing an admission that the Ethiopian is black, one were to ask whether he is white in respect of his teeth, and then, if he be white in this respect, were to think that he had finished the interrogation and had proved dialectically that he was both black and not black.[8]

The point Aristotle is attempting to make might be illustrated as follows:

(1) Inquisitor: Your position is that the Ethiopian is black.
(2) Interlocutor: Yes.
(3) Inquisitor: Do you agree that the Ethiopian has teeth and that teeth are not black?
(4) Interlocutor: Yes.
(5) Inquisitor: So, on your view position the Ethiopian is both black and not black.

The example Aristotle here provides is regrettable in a number of ways. Heuristically, however, it has the virtue that it approximates the type of case Aristotle is concerned with, in terms that are more easily understood. One might say, generally speaking, albeit loosely, that the Ethiopian, is dark (οἷον εἰ ὁ … ὅλος μέλας), and there is no difficulty in his being light with respect to his teeth (λευκός ἐστι τοὺς ὀδόντας). It is also worth emphasizing that Aristotle is concerned with a distinction between contraries and contradictories here, as he makes use of the contraries *black* and *white*, and he shows the sophistical slide in moving toward an inference involving the contradictories *black* (*white*) and *not black* (*not-white*).

IV.4: THE OATH SOPHISM

Given that Aristotle seems to take what I am calling the Oath Sophism and the Obedience Sophism as sophistical in the same way as our *logos* about the man who speaks falsely and truly, acquiring an idea about how these are sophistical may be useful. These are, moreover, embedded in a larger discussion concerning the fallacy of *Secundum quid et Simpliciter*. (I will limit my treatment to the Oath Paradox here in order to avoid some redundancy.) One might take the idea to be that a person cannot be said to be an oath-keeper simpliciter, *mutatis mutandis* for the case of the Obedience Sophism, simply because on one occasion, in certain respects, he keeps the oath to break an oath (Spade 1973). Just as one swallow does not a summer make, and one transitory moment of happiness does not make a person happy (1098a18), one instance of oath-keeping does not an oath-keeper make. A person who broke 99% of his oaths is not fairly described as an oath-keeper. This may be the right way to read Aristotle here. But an impasse so shallow, resulting from a sophism understood in this way, is in no way troublesome. And Aristotle takes the Oath Sophism and the Obedience Sophism to be analogous to the *logos* about the man who speaks falsely and truly, and he claims the latter appears difficult (δύσκολον φαίνεται). Precisely what Aristotle had in mind cannot be said with any certainty. Something along the following lines would however be interesting:

(1) Inquisitor: A man swears an oath truly or swears an oath falsely?
(2) Interlocutor: Most assuredly.
(3) Inquisitor: Suppose he swears only one oath, to wit, *I swear that every oath I swear I swear falsely*.
(4) Interlocutor: That is quite an oath.
(5) Inquisitor: If he swears truly, he does that which he swears.

(6) Interlocutor: Unequivocally.
(5) Inquisitor: And if he does what he swears, to wit, swears every oath falsely, then he swears every oath falsely.
(7) Interlocutor: Yes.
(8) Inquisitor: So, if he swears truly, then he swears falsely.
(9) Interlocutor: So, it seems.
(10) Inquisitor: If he swears falsely that he will break every oath, then will he not break every oath?
(11) Interlocutor: That follows.
(12) Interlocutor: And to not break one's oath is to swear truly?
(13) Inquisitor: What else?
(14) Interlocutor: So, if he swears falsely, he swears truly?

Aristotle has the following to say about the Oath Sophism (180a37–180b1):

> It is not that if one keeps this particular oath or in this particular way it is necessary also to be a keeper of oaths (οὔτ' εἰ εὐορκεῖ τόδε ἢ τῇδε, ἀνάγκη καὶ εὐορκεῖν), but the one having sworn to swear falsely swears truly this alone amidst false swearing (ὁ δ' ὀμόσας ἐπιορκήσειν εὐορκεῖ ἐπιορκῶν τοῦτο μόνον), but is not a keeper of oaths (εὐορκεῖ δὲ οὔ), nor is he who disobeys obedient (οὐδ' ὁ ἀπειθῶν πείθεται), but he obeys something (ἀλλά τι πείθεται) ….

Admittedly, it may be, moreover, that Aristotle is simply making the unproblematic observation that just because one keeps a single oath, this does not make one a habitual oath-keeper. If that is the case, however, then it is difficult to understand why he compares the Oath Sophism (and the Obedience Sophism) to the Liar Sophism, while describing the latter as problematic. So, one might take "not a keeper of oaths" as elliptical for "swears-falsely belongs to every oath taken by the oath-swearer." Conversely, we can take "keeper of oaths" as elliptical for "swears-falsely belongs to no oath." This way we can keep the *ad hominem* element out of it.

Now, chapter 25 of *Sophistical Refutations* begins with a reminder that sophistical refutations quite frequently involve overlooking certain distinctions such as the distinction between contraries and contradictories as well as those involving respect, manner, place, and relation (180a22–31). It is natural to think Aristotle would treat the Oath Sophism in the way he recommends treating sophisms in the lines leading up to it. So, it is natural to think that Aristotle will concern himself with distinctions in terms of aspects associated with the categories as well as the usual distinctions concerning the relations between contraries and contradictories. Fitting the Oath Sophism into the traditional square of opposition can seem a little contrived, when the distinction between some oath and every oath is blurred by the empirical fact that there

is exactly one oath, to wit, the speaker's oath. Nevertheless, Aristotle seems to want to read the Oath Sophism in both general and particular terms:

(A_o) Swears-falsely belongs to every oath ⇐ Contraries ⇒ (E_o) Swears-falsely belongs to no oath

(I_o) Swears-falsely belongs to some oath ⇐ Contraries ⇒ (O_o) Swears-falsely does not belong to some oath

In order to uphold consistency, Aristotle needs to avoid, by the law of non-contradiction, having (A_o) and (O_o) be true and having (I_o) and (E_o) be true. By the law of non-contraries, he needs to avoid having both (A_o) and (E_o) be true (though they may both be false), and he needs to avoid having both (I_o) and (O_o) be false (though sub-contraries may both be true). Somewhat surprisingly, Aristotle seems to want to say that (O_o) can be true without (E_o) being true:

> It is not that if one keeps this particular oath or in this particular way it is necessary also to be a keeper of oaths (οὔτ᾽ εἰ εὐορκεῖ τόδε ἢ τῇδε, ἀνάγκη καὶ εὐορκεῖν) ….

This is surprising because, if there is only one oath, and swears-falsely does not belong to it, then it seems that swears falsely belongs to no oath. Furthermore, we know in the circumstance being considered that there is some oath to which, in Aristotle's idiom, swears-falsely belongs. So, we have every indication that Aristotle takes (I_o) to be true. And, ex hypothesi, there is exactly one oath. So, if swears-falsely belongs to it, it belongs to every oath, and (A_o) is true.

> [B]ut the one having sworn to swear falsely swears truly this alone in false swearing (ὁ δ᾽ ὀμόσας ἐπιορκήσειν εὐορκεῖ ἐπιορκῶν τοῦτο μόνον), but is not a keeper of oaths (εὐορκεῖ δὲ οὔ), nor is he who disobeys obedient (οὐδ᾽ὁ ἀπειθῶν πείθεται), but he obeys something (ἀλλά τι πείθεται) ….

Thus, it seems there is reason for taking (O_o) as true and for taking (I_o) as true. In normal circumstances, this is precisely what one might expect. For example, (I_T) left-handed belongs to some pitcher on the Tigers' rotation and (O_T) left-handed does not belong to some pitcher on the Tiger's rotation, and there is no problem in it being false, on the one hand, that (A_T) left-handed belongs to every pitcher on the rotation, and, false, on the other hand, that (E_T) left-handed belongs to no pitcher on the rotation. However, because there is exactly one oath, in the Oath Sophism, it seems that (O_o) will imply (E_o) and (I_o) will imply (A_o). This leaves us with something Aristotle rejects,

namely, a situation where an (A) form and (E) form contrary are both true. Furthermore, where an (A) form (or (E) form) contradictory is true, its contradictory (O) form (or (I) Form) is false. And (O_o), on the one hand, was said to be true and (I_o), on the other was said to be true. Of course, this is itself problematic in the Oath Sophism (though not normally) because there is, ex hypothesi, exactly one oath, and if (O_o) and (I_o) are both true, then it seems we have violation of the Principle of Non-Contradiction at the sub-contrary level.

There are a number of moves consistent with what Aristotle says here. But to my mind, it seems that when Aristotle says "the one having sworn to swear falsely swears truly swearing this alone in false swearing" (ὁ δ' ὀμόσας ἐπιορκήσειν εὐορκεῖ ἐπιορκῶν τοῦτο μόνον), he is thinking that the oath to swear every oath falsely is an oath about his oaths, or, as one might put it, a second-order oath. He can, therefore, be read as understanding the relations as follows:

(A_1) Swears-falsely belongs to every first-order oath (E_2) Swears-falsely belongs to no second-order oath.
(I_1) Swears-falsely belongs to some first-order oath (O_2) Swears-falsely does not belong to some second-order oath.

Read in this way, Aristotle can maintain consistency. Aristotle can maintain that (O_2) is true, because *swears-falsely* does not belong to the second-order oath. And (A_1) may be read as true as well, as *swears-falsely* does belong to every first-order oath. (I_1) can be read as true as well, given that *swears falsely holds* of every first-order oath. Given that the only second-order oath is not sworn falsely, every second-order oath is not sworn falsely. So, (E_2) is true as well. In summary, we needn't worry about violations concerning the Principle of Non-Contradiction, as (A_1) and (O_2) are not really contradictories, nor are (E_2) and (I_1) really contradictories. And we need not worry about violations of the Principle of Non-Contrariety as (A_1) and (E_2) are not really contraries (and the same can be said for (I_1) and (O_2)). Furthermore, we are able to account for Aristotle's remark to the effect that just because swears-falsely does not belong to some oath, this does not mean that swears-falsely does not hold strictly. For swears-falsely holds strictly of the first-order oath and does not thus hold of the second-order oath.

One might here object: What has become of the claim that we are dealing with one and the same oath? In countenancing two orders, have we not countenanced two oaths? And given that we understand the problem to concern a single oath, and we are making use of two oaths, are we suggesting that two may be equal to one? There are a couple of ways one might respond. First, one might maintain that an oath about oaths is a second-order oath. And, one may argue, a second-order oath it remains, even if, in virtue of extremely

unfavorable empirical facts (our oath-taker, say, dies upon completing his second-order oath), it happens that there are no first-order oaths within its range. And if this means that if (A_1) and (I_1) are false, the falsity in question is nevertheless orthogonal to (E_2) and (O_2).

Alternatively, one might say that the oath is false accidentally (συμβεβ ηκός), under the description, "first-order oath" and true *simpliciter* under the description "second-order oath." And there is no reason to worry about a violation of the Principle of Non-Contradiction, or the Principle of Non-Contrariety, given our distinction. We have a case where the oath is true under one description and false under another, but not both true and false under the same description. Much as in a case of indirect discourse, or, more to the point a case involving a conflation of *use* and *mention*, the issue turns upon the way the objects therein are described. In fact, the language of swearing is itself rife with potential for use-mention conflation. Consider the following set of sentences to be true:

T Phillip swears that Cicero denounced Cataline
T Phillip does not swear that Tully denounced Cataline.
T Cicero = Tully

With an application of a rule allowing for the substitution of co-referential locutions, and an application of *and*-introduction, we have the following:

F Phillip swears that Cicero denounced Cataline and Phillip does not swear that Cicero denounced Cataline.

Nowadays, we would say something akin to this: a use-mention distinction is conflated. And we avoid the illicit substitution by indicating that "Cicero denounced Cataline" or "Tully denounced Cataline" are mentioned rather than used:

T Phillip swears "Cicero denounced Cataline."
T Phillip does not swear "Tully denounced Cataline."
T Cicero = Tully

And, when re-written thus, there is no temptation to substitute the co-referential terms in question. Of course, Aristotle has his own way of dealing with what we call opaque contexts. And it is in terms of accidental and non-accidental unities. So, it would not be surprising to find him arguing that the oath is sworn falsely accidentally (συμβεβηκός), under the description, "first-order oath" and sworn truly *simpliciter* under the description "second-order oath."

Now, I think it is important that an account of the Oath Sophism either (i) shows how the resolution involves a fallacy of *Secundum Quid et Simpliciter*, or, short of that, (ii) explains why Aristotle would provide an account that does not involve the fallacy within a context where the fallacy of *Secundum Quid* is being discussed. The latter of these two strategies does not look promising. But the former is satisfied by the account given here. Just as white belongs to the Ethiopian in one respect, but not in another, so too *swears-falsely* belongs to the oath *qua* first-order oath, but not *qua* second-order oath.

IV.5: ARISTOTLE AND THE LIAR PARADOX

Can a line of reasoning similar to the line employed in the Oath Sophism be used in relation to the Liar Paradox? Consider the very line following Aristotle's treatment of the Oath Sophism, namely, our focal text ((Forster & Furley translation (1955))180b2–8):

> The argument is similar which deals with the question whether the same man can say what is at the same time both true and false; but it presents apparent difficulties because it is not easy to see whether the qualification "absolutely" should be applied to "true" or to "false."

(A_1) Speaks-falsely belongs to every first-order utterance (E_2) Speaks-falsely belongs to no second-order utterance.

(I_1) Speaks-falsely belongs to some first-order utterance (O_2) Speaks-falsely does not belong to some second-order utterance.

And, of course, I am going to argue that Aristotle continues in a way that rings reminiscent of his remarks in the Oath Sophism:

> But there is no reason why the same man should not be absolutely a liar yet tell the truth in some respects, or that something should be true but he himself not be truthful.

Thus, one may read Aristotle as saying that when one says, for example, "Everything I say is false" one utters an utterance about utterances, or a second-order utterance. With respect to that second-order utterance, one may expect that it is the case that speaks-falsely does not belong to it, so, (O_2) is true. If that is the only second-order utterance, then (E_2) is true. This is consistent with the state of affairs where every other utterance by our speaker is false. So, there is no contradiction in the supposition that (A_1) is true, and by

the sub-alternation relation, that (I_1) is true as well. Much like the Oath Sophism, there is no contradiction if they are false either.

The idea that I am pressing here is that Aristotle might be read as employing a strategy that resembles in some ways the strategy associated with the work of Alfred Tarski (1944) and Bertrand Russell (1908). Here are Russell's remarks from *My Philosophical Development* (1959, 62).

> The liar says, "everything that I assert is false." This is, in fact, an assertion that he makes, and it is only by including it in that totality that a paradox results. We shall have to distinguish between propositions that refer to some totality of propositions and propositions that do not. Those that refer to some totality of propositions can never be members of that totality. We may define first-order propositions as those referring to no totality of propositions; second-order propositions as those referring to totalities of first- order propositions; and so on, ad infinitum. Thus, our Liar will have to say, "I am asserting a false proposition of the first-order which is false." But this is itself a proposition of the second-order. He is thus not asserting any proposition of the first- order.

And, similarly, for Aristotle. If I am entertaining conjectures about how he might approach the Liar Sophism, I am inclined to think that that an ordering of claims, similar to Russell's, seems to be a plausible reading given what is said in Aristotle's remarks concerning the Oath Sophism and his parallel remarks in the lines that follow, when he considers the *logos* about the same man who speaks both truly and falsely. Of course, the account given here fits well with what Aristotle says about the fallacy of *Secundum Quid et Simpliciter*. Just as white belongs to the Ethiopian in one respect, but not in another, so too *speaks-falsely* belongs to the utterance *qua* first-order utterance, but not *qua* second-order utterance.

IV.6. CRIVELLI'S RECONSTRUCTION OF ARISTOTLE'S SOLUTION

The argument, on Crivelli's reconstruction, comes in two stages. First, he usefully compares a sophism from the *Sophistical Refutations*, concerning an object that is equally black and white, to the sophism that concerns the Liar. Finding some idiomatic language in the two passages, he infers, not unreasonably, that Aristotle would treat the sophisms in a similar fashion. And, secondly, because Aristotle suggests that the black and white object is neither black without qualification nor white without qualification, he concludes that Aristotle would probably maintain that neither speaking truly nor speaking falsely hold without qualification in the Liar Sophism. Aristotle's view on the

Liar Sophism would, on this reading, resemble the views of philosophers who attempt to solve the Liar Paradox by placing restrictions on bivalence or by allowing for truth-value gaps.[9]

Crivelli treats the black and white object as a sphere, half of which is black, the other half being white (2004, 148). I will follow his lead and refer to this sophism as the Sphere Sophism. The Sphere Sophism follows directly after the sophism concerning the Ethiopian who is, as it were, white and black (167a14–21):

> However, often in some cases the distinction eludes notice (ἐπ᾽ ἐνίων δὲ λανθάνει πολλάκις), whenever that which is predicated in some respect (ὅταν πῇ λέγηται), it seems to follow without qualification, (κἂν τὸ ἁπλῶς δόξειεν ἀκολουθεῖν), and in these cases it is not easy to see which of the two should be rendered strictly (καὶ ἐν ὅσοις μὴ ῥᾴδιον θεωρῆσαι πότερον αὐτῶν κυρίως ἀποδοτέον). A case such at this comes to be for those things in which opposites belong similarly (γίνεται δὲ τὸ τοιοῦτον ἐν οἷς ὁμοίως ὑπάρχει τὰ ἀντικ είμενα) for it seems both or neither one must grant to be predicated without qualification (δοκεῖ γὰρ ἢ ἄμφω ἢ μηδέτερον δοτέον ἁπλῶς εἶναι κατηγορεῖν), for example, if something is half white on the one hand and half black on the other, is it white or black? (οἷον εἰ τὸ μὲν ἥμισυ λευκὸν τὸ δ᾽ ἥμισυ μέλαν, πότερον λευκὸν ἢ μέλαν;)

That Aristotle's treatment of the Spherical Sophism is connected to the Liar Sophism is suggested, on Crivelli's reading, by Aristotle's treating both sophisms as cases where (i) the distinction between the absolute and the qualified is at issue and (ii), cases where it is difficult to see which of the two should be rendered strictly. He maintains that "from a linguistic point of view" the passages are extremely similar. On his translation (2004, 148):

> Sphere Sophism: It is not easy to see which of the two should be rendered strictly (μὴ ῥᾴδιον θεωρῆσαι πότερον αὐτῶν κυρίως ἀποδοτέον).
>
> Liar Sophism: It is not easy to see which of the two renderings one should offer, that he is speaking truly or speaking falsely absolutely (ποτέρως ἄν τις ἀποδοίη τὸ ἁπλῶς ἀληθεύειν ἢ ψεύδεσθαι, δύσκολον φαίνεται).

The variant uses of "render" (ἀποδίδωμι) and their respective modification by "strictly" (κυρίως) make for some similarity, as do Aristotle's remarks about the relative difficulty involved in making a determination. On the basis of these similarities, Crivelli thinks it is likely that Aristotle would treat the case of the Liar Paradox by means similar to those employed in the Sphere Sophism. And Crivelli takes as important Aristotle's claim that the latter involves a case where opposites hold to the same extent (167a16)-20:

> A case such at this comes to be for those things in which opposites belong similarly (γίνεται δὲ τὸ τοιοῦτον ἐν οἷς ὁμοίως ὑπάρχει τὰ ἀντικείμενα) for it seems both or neither one must grant to be predicated without qualification (δοκεῖ γὰρ ἢ ἄμφω ἢ μηδέτερον δοτέον ἁπλῶς εἶναι κατηγορεῖν)

What should one make of Aristotle's claim that opposites hold to the same extent? Crivelli makes the following of it (2004, 148):

> One plausible answer is that in his view the situation where two opposites hold of the same object to the same extent is that where the strongest consideration available in support of one opposite holding is counterpoised by an equally strong consideration in support of the other opposite holding.

And he continues to argue that just as the consideration that the sphere is white (black) is counterpoised by an equally strong consideration that it is black (white), so too, speaking-truly and speaking-falsely are thus counterpoised in the Liar Sophism. In the Sphere Sophism, moreover, Aristotle says that it seems that *both black and white* or *neither black nor white* must be predicated without qualification. Furthermore, because the idea that the sphere should be both black and white without qualification is fairly repugnant, the other horn of the dilemma, to wit, that the sphere is neither black nor white without qualification seems plausible. By parity of reason, so runs the argument, Aristotle's position is probably that *neither true nor false* must be predicated without qualification in the case of the Liar Paradox. And, the idea that Aristotle would take the *neither-true-nor-false* route, as Crivelli argues, gains support from Aristotle's remarks about future-tense singular statements, such as *There will be a sea-battle tomorrow*, or, *There will not be a sea-battle tomorrow*, in chapter 9 of *De Interpratione*. Aristotle is, therein, with some frequency read as taking such statements as neither true nor false.

IV.7: SEVERAL OBJECTIONS AND A COST-BENEFIT COMPARISON

In the following I would like to compare the reading I have outlined with the reading recommended by Crivelli. I will consider several objections that Crivelli's account seems to face. And I will indicate how my reading avoids the difficulties I am raising for Crivelli's account.

First Objection: In the Sphere Sophism, black is clearly predicated in some respect, as is white predicated in some respect. And, thus, Crivelli should read Aristotle as saying, in the case of the Liar Sophism, that the utterance is true in some respect and false in some respect. And, of course, one would like to

understand the respects in which the utterance is true, on the one hand, and, false, on the other. And on this matter Crivelli's remarks are not particularly illuminating (2004, 149):

> Aristotle does not say in what "way, place, manner, or relation" speaking-truly and speaking-falsely both hold of a man who says "I am speaking falsely." He merely argues that they both hold only in a qualified sense because they hold to the same extent.

And to say that true and false hold only in a qualified sense, and to leave it a mystery as to what the sense in question might be, is to rest Aristotle's response to the Liar Sophism on a mystery. And, furthermore, to be told that true and false hold to the same extent does not rule out that true and false hold to the same extent in the same respect. And it was avoiding this repugnant possibility that inspires most to treat the paradox in the first place. In contrast, the reading I prefer makes explicit the respects in question, as *speaks-falsely* belongs to the utterance *qua* first-order utterance, but not *qua* second-order utterance.

Second Objection: A related objection concerns how Crivelli can understand the sophisms in question to be of the *Secundum Quid* variety. We know there is an illicit inference is saying that the Ethiopian is both black and white, because we understand the respect in which he is white and the respect in which he is not. If the respects which render a resolution of the paradox are respects to which we are not privy, as Crivelli maintains, then how is it that we know there is a fallacy of *Secundum Quid*? Of course, I have made clear how my reading involves a resolution of the sophism as a member of the *Secundum Quid* variety. Moreover, just as white belongs to the Ethiopian in one respect, but not in another, so, too, *speaks-falsely* belongs to the utterance *qua* first-order utterance, but not *qua* second-order utterance.

Third Objection: Chapter 25 of *Sophistical Refutations* opens with a discussion about how sophistical refutations often turn upon a failure to countenance a distinction between contraries and contradictories. Crivelli's reading has nothing to say about how contrary and contradictory relations come into play in treating the Liar Sophism. On the reading I have set out, in contrast, the Liar Sophism is disarmed by showing how a distinction in terms of respect can allow one to uphold both the Principle of Non-Contradiction and the Principle of Non-Contrariety. It is because the speaker's utterance involves a second-order respect, that one need not take the (I_1) and (A_1) forms and the (E_2) and (I_1) to involve *bona fide* contrary or contradictory relations.

Fourth Objection: Another difficulty for Crivelli's reading concerns the fact that he reads Aristotle, in the case of the Sphere Sophism, to state that black and white, the opposites in question, both hold of the sphere in some

respect. But in the Liar Sophism Aristotle clearly takes one of the putative opposites to hold without qualification and the other to hold in some respect. So, despite some similarity in language, which one might point to in terms of the Sphere and Liar Sophisms, one very important dis-analogy is that the latter does not treat both values in question as mere respects. My account however is able to preserve the idea that the putative contradictories, in the Liar Sophism, involve relations without qualification and with qualification. It is thought fallaciously that speaks-falsely belongs to every utterance. But there is a qualification, as speaks-falsely does not belong to the second-order utterance in a certain respect.

Fifth Objection: The conclusion that the sphere is neither black nor white without qualification, and by extension the conclusion that the utterance in the Liar Sophism is neither true nor false, is based upon the idea that the consideration that the ball is white (black) is counterpoised by an equally strong consideration that the ball is black (white). So, the conclusion appears to be an ontological claim, when the premise involved is an epistemic claim. It would seem that Crivelli's reading attributes to Aristotle a conflation of the ontological and the epistemic. Given that the approach I prefer begins and ends with statements about what is true, the approach I favor does not face the same difficulty.

Sixth Objection: The analogy that maintains, as it were, that *black* is to *speaks-truly*, as *white* is to *speaks-falsely*, suggests that *true* and *false* are contraries rather than contradictories. For surely black and white are contraries, admitting of middle states such as grey, and not contradictories, which admit of no middle gradient, such as black (white) and not-black (not-white). Of course, Crivelli more than suggests that there is a middle gradient betwixt *true* and *false*, and may not find problematic the idea that *true* and *false* are contraries. For readers who would sooner avoid this commitment, my reading may be a welcome alternative. However, the reading I recommend is not incompatible with Aristotle's countenancing some statements as neither true nor false in the requisite sense. Were the utterance of the Liar Paradox neither true nor false, we should want an explanation of this result. And one explanation might be that it turns upon something akin to a use-mention equivocation.

Seventh Objection: It is not clear that Aristotle's position on Crivelli's reading really is a position comparable to the positions that hold the liar sentence is neither true nor false. As Crivelli argues:

> Aristotle's position is probably that what one should say with regard to a man who says "I am speaking falsely" is that … neither speaking-truly nor speaking falsely hold absolutely of him (although both hold in some respect).[10] Aristotle can therefore be plausibly taken to be committed to the view that the utterance of "I am speaking falsely" is sometimes neither true nor false.

Crivelli's premise seems to be that speaking-truly holds in one respect of our liar, call this Respect-R, and that speaking-falsely holds in another, distinct respect, lest we violate the Principle of Non-Contradiction. Call this respect Respect-L. But if, ab initio, the locution is true in one respect, and false in another, it is simply not problematic. To take an example making use of the Aristotelian category of place:

T Black holds of the sphere in some respect, namely, that the R-hemisphere is black.
T White holds of the sphere in some respect, namely, that the L-hemisphere is white.

Now, one does not *have* to resort to gaps or to placing restrictions on bivalence, as Crivelli's view requires. It is part of Aristotle's understanding of the Principle of Non-Contradiction and the Principle of Non-Contrariety that sub-contraries are sometimes both true, and that when they are, their contrary counterparts are both false:

F Black holds of the sphere in every respect, namely, that both hemispheres are black.
F White holds of the sphere in no respect, namely, that neither hemisphere is white.

Thus, it seems that the comparison of Aristotle's approach to that of philosophers who give up bivalence or introduce gaps is otiose, provided we uphold the Principle of Non-Contradiction, and allow for the respects in question to be different. Again, some have read Aristotle as saying, in chapter 9 of *De Interpretatione*, that future contingent statements, such as those concerning future sea-battles, are statements that are neither true nor false. But the text remains extremely controversial. And an interpretation of the Liar Sophism, like mine for example, that remained uncommitted on whether Aristotle resorted to such measures, especially given his protracted defense of the Principle of Excluded Middle in *Book Gamma*, is arguably preferable.

Eighth Objection: Crivelli says that, on his interpretation, "Aristotle's solution to the Liar is, ultimately, somewhat unsatisfactory because it leaves him exposed to the Strengthened Liar." The Strengthened Liar, sometimes called the Revenge Liar, may be articulated as follows:

(RL) I am now speaking untruly.

We start by distinguishing among the following: (i) speaks truly, (ii) speaks falsely, and (iii) speaks untruly. The third of these would include cases of

speaking falsely as well as cases of speaking neither truly nor falsely. If the speaker is speaking truly, and what he says about his utterance is that he is speaking untruly, he speaks either (a) falsely or (b) neither truly nor falsely. Either way, if he is speaking truly, what he says about his speaking is not the case, so he speaks untruly. If he speaks untruly, then what he says about his remark *is the case*, so he speaks truly. Take the sum of the conditionals here and we have a contradiction. Needless to say, we have a liar-like paradox despite our having assumed that some statements are neither true nor false throughout. Does Crivelli's reading leave us where we started—with a liar paradox and without a response. To be fair, some have thought that the ordered-approach faces a similar kind of difficulty (see Simmons 1993, 7). Consider a sentence such as the following:

(RL*) I am speaking untruly at any order.

For my part, I am not sure about the severity of this objection. It might be thought to beg the question against someone like Russell, who maintains that a statement that refers to some totality of propositions can never be a member of that totality. Alternatively, someone with Russellian sympathies might maintain that there are orders of sub-orders (that are ranked in a way that is familiar enough and analogous in certain ways to the way that we order sets, for example, in Zermelo-Fraenkel Set Theory). And, thus read, (RL*) fails to refer to some totality of orders. So, it is at least less obvious, to my mind, that the ordered-approach falls prey to the Strengthened Liar. With that said, there are clearly vulnerabilities involved with such an approach. One might be skeptical, as Alfred Tarski was, concerning the application of an ordering approach in terms of natural languages (1983, 165):

> If these observations are correct, then the very possibility of a consistent use of the expression "true sentence" which is in harmony with the laws of logic and the spirit of everyday language seems to be very questionable, and consequently the same doubt attaches to the possibility of constructing a correct definition of this expression.

On the reading I recommend, if it happens to be Aristotle's own, Aristotle would certainly have some questions to answer. For example: Is it a consequence of the view that there is an infinite hierarchy of languages, similar to the set recognized by Tarksi in connection with formal language? Would an infinite hierarchy of languages be Aristotelian? Would it be potentially infinite, albeit actually finite on Aristotle's view? These and a host of other questions might be asked about the reading presented here. Nevertheless, a number of impressive names constellate around the general strategy of

ordering, such as—to drop a few names—Bertrand Russell, Saul Kripke, and Alfred Tarski.[11]

IV.8: WRESTLING WITH THE LIAR

In the above, I have offered a conjectural sketch of how Aristotle might respond to something akin to the Liar Paradox. We know he had thoughts about a Liar Sophism, though we know a great deal less about what he took the Liar Sophism to be, and perhaps still less do we know whether the Liar Paradox and the Liar Sophism are one and the same. Nevertheless, it is a worthwhile exercise to consider what the alternatives are, and how they may have affected Aristotle's thinking. Attempts to wrestle with the Liar Paradox have produced important results, moreover, in philosophy of logic and mathematics, the philosophy of language, epistemology, and metaphysics. And as one attempts to learn Aristotle's views in the philosophy of mathematics, language, and truth, it is helpful to have in view several alternative views concerning how he might or might not treat the Liar Paradox and its variants.

NOTES

1. Kneale and Kneale (228): "The Liar Paradox was not formulated in the works of Aristotle; and although a passage in his *De Sophisticis Elenchis*, where he speaks of 'the story about the same man's lying and telling the truth at the same time,' may perhaps refer to the puzzle, it is not good enough to enable anyone to reconstruct the puzzle without a good deal of fresh ingenuity …."

2. See Harris 1906 for a reconstruction of the poem.

3. As a possibility, it is suggested by Kneale and Kneale, that this may have been the beginning of the hostility between the Peripatetics and Megarians, and, by extension, the rift between the Stoics and the Peripatetics. Given the complimentary nature of the logical systems of the Peripatetics and the Stoics, this is a setback.

4. See also Cicero's *De Divinitatione* II.11. One might prefer to translate, as I have here, "mentiri" as "to speak falsely" rather than "to lie." It can mean either. Lying involves the intention to deceive and this complicates matters. One might be able to lie while stating what is literally true, by speaking in a sarcastic tone, for example. (But consider Wittgenstein at 4.062ff in the *Tractatus*.) Conversely, one might speak falsely without the intention to deceive. So, speaking falsely may be neither necessary, nor sufficient, for lying. Furthermore, the concept of lying is not what generates the Liar Paradox, as it can be formulated without its mention.

5. See Cavini 1993, 90–91.

6. Supplied by Crivelli.

7. Here I follow Crivelli (2004) 139 ff. A reconstruction of Aristotle's view will here be tentative, somewhat conjectural, nevertheless interesting.

8. It is puzzling that Aristotle seems to conflate "Indian" and "Ethiopian."

9. Robert Martin finds the (1967) Liar Paradox to result from a lack of attention to categorical distinctions. Something such as "The number eleven is purple" is neither true nor false. And that a lack of attention to categories can generate a sophism sounds Aristotelian. Van McGee (1991), cited by Crivelli as holding a view that resembles Aristotle's, holds that vague predicates issue in sentences that are neither true nor false. Saul Kripke (1975) offers a theory of truth that makes use of the Strong Kleene Logic that includes the value *undecidable* in addition to the values of true and false. Kripke's view makes use of some hierarchy as well, and, can be seen as a highbred view.

10. It seems that there is ample room for an error of scope ambiguity on the term "absolutely" here. Crivelli seems to move freely (see 149) from "neither speaking-truly nor speaking falsely hold absolutely" to "is absolutely neither." I assume that in the former "absolutely" governs each disjunct and not the disjunction. That is, I assume that he intends "neither absolutely speaking-truly nor absolutely speaking-falsely." And I suppose "absolutely neither" to be an elliptical way of saying the same.

11. Of course, Tarski (1956, 1944) limits his treatment to "scientific languages." And Kripke, moreover, (1975) makes use of ordering relations in connections with a Strong Kleene Logic that includes the values true, false, and undecidable.

Afterword: The Gamma Paradoxes

The philosophical breadth of *Book Gamma* is something to behold. Most of the perennial questions are picked up therein: the nature of science, the mind-world relationship, the nature of truth, the limits of belief, the principles of logic, philosophical psychology, and, of course, the nature of substance. The issues that are picked up therein lead one, needless to say, to other issues as well. And that is the reason that commentators commentate. Aristotle's work, like most great philosophical works, provides an instrument whereby exegesis serves as portal to the examination of the exegete's philosophical views. We write to find out what it is that we believe. It is now nearly a platitude in philosophy that the most economical way to understand behavior, especially behavior of the linguistic variety, is, *ceteris paribus*, to begin with the premise that there is good reason for it (Donald Davidson, 1984, 159–60). The remainder, after the conscientious search for that reason is concluded, is criticism. And a reading of Aristotle is always steeped in obscurity, shrouded in ambiguity, seldom undertaken under desirable conditions, but, nevertheless, invariably rewarding.

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Index

About the Author

Jeremy Kirby is associate professor of Philosophy at Albion College where he teaches courses on Ancient Greek Philosophy, the Philosophy of Aristotle, Early Modern Philosophy, Twentieth Century Philosophy, the Philosophy of Science, the Philosophy of Ludwig Wittgenstein, and Metaphysics. He has authored books and articles on topics such as: Aristotle's Metaphysics, Plato's Theory of Forms, Biology in Antiquity, Chrysippus' Stoicism, and David Hume on freedom and culpability.