WHY DOES ARISTOTLE DEFEND THE PRINCIPLE OF NON-CONTRADICTION AGAINST ITS CONTRARY?

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I. INTRODUCTION

Consider the following argument:

Premise 1: All human beings are animals.
Premise 2: Not all human beings are animals.
Conclusion: Therefore Socrates is an animal.

The argument above is unsound. But according to modern propositional logic, the argument is valid.¹ There is not a semantic interpretation in which the argument’s premises are both true and its conclusion is false. More specifically, if P1 is true then P2 is false, and vice versa. As a result of the fact that P1 and P2 cannot both be true, any well-formed formula—or combination of well-formed formulas—could take the place of the sentence currently in use as the conclusion without making the argument invalid. “Socrates is a chess master” could be used as the conclusion, and still validity would be preserved, as could, “The square root of forty-nine is eighteen” and/or, “You’re both alive and not alive.” For a more general illustration of the point, consider a proof of the claim that from the

¹ By “modern propositional logic” or “modern logic” I mean classical first-order logic, also known as “classical elementary logic.” See Shapiro (S. Shapiro, “Classical Logic,” The Stanford Encyclopedia of Philosophy (2013) http://plato.stanford.edu/entries/logic-classical/) for a nice description and explanation of the basics of classical first-order logic. With \( \theta \), \( \neg \theta \) taken as contradictory opposites, and \( \psi \) taken as any formula at all, Shapiro describes the principle of explosion as follows: “some logicians introduce a rule to codify a similar inference: If \( \Gamma \vdash \theta \) and \( \Gamma \vdash \neg \theta \), then for any formula \( \psi \), \( \Gamma, \Gamma \vdash \psi \).”
truth of a contradiction—a conjunction consisting in a sentence and its negation—the truth of any other sentence follows:

(1) \( \varphi \land \neg \varphi \) Premise

(2) \( \varphi \) 1, conjunction elimination

(3) \( \varphi \lor \psi \) 2, disjunction introduction

(4) \( \neg \varphi \) 1, conjunction elimination

(5) \( \psi \) 3,4, disjunction elimination

The proof above relies on three basic rules of inference and proves: \{ \( \varphi \land \neg \varphi \) \} \( \rightarrow \psi \).


3 The position that there are some true contradictions has in recent decades been known as dialetheism, and is motivated at length in Priest (G. Priest, Contradiction (Oxford: Oxford UP, 2006b)).

4 So blocking explosion requires rejecting at least one of conjunction elimination, disjunction elimination, and disjunction introduction as inference rules. This is the approach taken by some paraconsistent logics such as dialetheism. Dialetheism holds that there are some true contradictions, such as those generated by liar sentences. But dialetheism also maintains that not all contradictions are true. So dialetheists are not necessarily also trivialists, though trivialists are necessarily also dialetheists. For trivialism says everything is true, and dialetheism falls under the scope of everything. Prominent contemporary logicians including Graham Priest and J. C. Beall, for example, block explosion and avoid trivialism by rejecting disjunction elimination. They block, in other words, entailment from the position held by Aristotle’s second-most radical opponents (“Some but not all contradictions are true”) to the position held by Aristotle’s most radical opponents (“Every statement is true (and false”). They hold the former but not the latter.


Aristotle’s defense of PNC seems almost exclusively devoted to the question “Can all contradictions be true?” as opposed to the more salient question “Can even one contradiction be true?” But just because not all contradictions are true, so that PNC’s contrary is false, it is not necessarily the case that all contradictions are false. PNC’s contradictory might still be true. So PNC might still be false. That not all basketball players are short does not entail that all basketball players are not short. Aristotle does not seem to succeed, then, in defending PNC.

I argue that the criticism above is not fatal to Aristotle’s defense of PNC. Section II presents and briefly analyzes Aristotle’s different formulations of PNC in order to get clearer about what, precisely, he is defending. Section III explains in more detail why Aristotle’s defense of PNC appears to fail. Section IV shows that Aristotle is keenly aware of the distinction between contraries and contradictions, and that he distinguishes between PNC’s contradictory and PNC’s contrary in \( \Gamma.4 \). The paper then gives three main reasons to think that Aristotle’s defense of PNC is not crippled by its focus on PNC’s contrary. First, in Section V, I argue that one vital reason Aristotle attacks PNC’s contrary is that he took his real opponents such as Anaxagoras, Cratylus, Democritus, Empedocles, Heraclitus, Parmenides, Protagoras, Xenophanes, and even Homer to hold views deeply connected with PNC’s contrary. Second, in Section VI, I explain why Aristotle’s defense of PNC must be a particular kind of indirect defense than a direct demonstration. Third, in Section VII, I propose a reading on which Aristotle gives a convincing defense of PNC by demonstrating the reliance of coherent communication on non-contradiction. More generally, then, I aim to go some way towards motivating a reading of Aristotle’s defense of PNC that is not only exegetically and historically plausible but also philosophically attractive.

II. WHAT IS ARISTOTLE’S PNC?

The following are four formulations of PNC Aristotle gives in *Metaphysics* \( \Gamma.3–6 \):

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[A] “Evidently then such a principle is the most certain of all; which principle this is, we proceed to say. It is, that the same attribute cannot at the same time belong and not belong to the same subject in the same respect; we must presuppose, in face of dialectical objections, any further qualifications which might be added” (100517-22).15

[B] “It is impossible that contrary attributes should belong at the same time to the same subject (the usual qualifications must be presupposed in this proposition too)” (1005b26–28).16

[C] “It is impossible for anything at the same time to be and not to be” (1006a3–4).17

[D] “The most indisputable of all beliefs is that contradictory statements are not at the same time true” (1011b13–14).18

[D] expresses PNC with respect to the superlative indisputability of a belief (doxa), whereas [A] through [C] do not mention a belief or anything closely related. Rather, [A] through [C] express PNC with respect to the impossibility of the simultaneous truth of contradictory statements, or the impossibility of the same thing being both said and not said of the same thing (to auto). Any particular belief related to PNC, let alone the indisputability of such a belief, is absent from [A] through [C]. Consider a world at which [A] through [C] are true, but [D] is false. So it is true at this world that “It is impossible for anything at the same time to be and not to be.” It’s also true at this world that contradictory statements are false, and that to say that something, x, can be both F and not-F, is false. But it’s also true at this world that the belief that contradictory statements cannot be simultaneously true is not the most indisputable belief. Rather, at this world the belief in the following is just as indisputable as the belief in PNC: for any two objects such as a sound and a color, “each of them is different from the other and the same as itself [. . .] and that both together are two, and each of them is one” (Theaetetus, 185a).

The world described above does not seem terribly implausible: it might well be argued at the actual world that the belief in that principle is just as indisputable as the belief in PNC. Indeed, such a world might be close to Aristotle’s. For

14 All Greek text from the Metaphysics is taken from W. D. Ross, Aristotle’s Metaphysics, 2 vols. 1924, (reprinted 1970 [of 1953 corr. edn.]).

15 ὅτι μὲν οὖν βεβαιοτάτη ἢ τοιαύτη πασῶν, δῆλον: τίς δ’ ἐστιν αὐτή, μετὰ ταύτα λέγωμεν. τὸ γὰρ αὐτὸ ἃμα ὑπάρχειν τε καὶ μὴ ὑπάρχειν ἀδύνατον τὸ αὐτὸ καὶ κατὰ τὸ αὐτὸ (καὶ ὅσα ἄλλα προσδιορισσαίμεθ᾽ ἢν, ἐστὶ προσδιορισσέμαν πρὸς τὰς λογικὰς δυσχερείας) (1005b17–22). Kirwan refrains from the use of “attribute” in his translation of 1005b19–22: “For the same thing to hold good and not to hold good simultaneously of the same thing and in the same respect is impossible (given any further specifications which might be added against the dialectical difficulties)” (Kirwan 1993: 7).

16 εἰ δὲ μὴ ἐνδέχεται ἃμα υπάρχειν τὸ αὐτὸ τάναντα (προσδιορίσθω δ’ ἡμῖν καὶ ταύτῃ τῇ προτάστει τὰ εἰσιθότα).

17 ἡμεῖς δὲ γὰρ εἰλήφαμεν ὡς ἄδυνατον ὄντος ἃμα εἶναι καὶ μὴ εἶναι.

18 ὅτι μὲν οὖν βεβαιοτάτη δόξα πασῶν τὸ μὴ εἶναι ἄληθες ἃμα τὰς ἀντικειμένας φάσεις.
Aristotle seems to implicitly rely on the principle of identity throughout his defense of PNC. I think it’s fairly clear, then, that it’s possible and perhaps even plausible that [D] might be false even if [A] through [C] are true. Due to the strength of the claim in [D] about the belief peculiar to its formulation, one might argue that while [D] is connected with [A] through [C], [D] is a different principle altogether. There are no doubt other interesting differences among [A] through [C]. Much more could be said here. But since my focus lies elsewhere, I’ll not part with convention: I’ll take [A] as Aristotle’s representative formulation. It can be stated a little more precisely as follows. For any object, $x$, and any predicate, $F$, it’s not the case that $x$ is both $F$ and not-$F$: $(\forall x)(\forall F)\neg(Fx \land \neg Fx)$.

III. WHY ARISTOTLE’S DEFENSE OF PNC SEEMS TO FAIL

Given that PNC is such a strong claim, namely, $(\forall x)(\forall F)\neg(Fx \land \neg Fx)$, we would expect Aristotle to conclude its defense along the lines of, “It is clear from what has been said that for all things and all that can be predicated of things, nothing can in the same respect be predicated and not predicated of the same thing.” Instead, it is with a remarkably weak claim that Aristotle concludes his string of arguments in *Metaphysics* $\Gamma.4$ in defense of PNC: “We shall have got rid of the unqualified doctrine which would prevent us from determining anything in our thought” (1009a3–4). Nowhere does Aristotle explain why his opponents must accept that not just some but all contradictions are false. Rather, we find Aristotle arguing, even as late as $\Gamma.6$, for claims as weak as: “if not all things are relative, but some exist in their own right ($καθ’ \ αὐτά$), not everything that appears will be true” (1011a18–19).

Łukasiewicz appears to be have been the first to note that Aristotle’s defense of PNC attacks PNC’s contrary rather than PNC’s contradictory: “Aristotle proves not that the mere denial of the principle of contradiction would lead to absurd consequences, rather he attempts to establish the impossibility of the assumption that everything is contradictory.” Over a century later, Priest argues

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19 It is perhaps worth noting, to help explain the difference between [D] and the other formulations, that [D] occurs in $\Gamma.6$, whereas [A] through [C] occur much earlier on in Aristotle’s discussion of PNC at $\Gamma.3$ and $\Gamma.4$. By the time we reach [D] in $\Gamma.6$ the discussion has explicitly shifted to an attack on the radical Protagorean opponents who hold that everything in the world is just as it appears to everyone and anyone. Besides my own discussion in section V of these more radical opponents, see Lee (M. Lee, *Epistemology after Protagoras: Responses to Relativism in Plato, Aristotle, and Democritus* (Oxford: Oxford UP, 2005), especially chapters 4, 6, and 7, for a detailed exegesis, examination and discussion of Protagorean theories and the responses from Plato, Aristotle (in $\Gamma.4$ through $\Gamma.6$), and other figures such as Democritus.

20 Łukasiewicz (1910).

that Aristotle’s defense of PNC “cheerfully slides between attacking the claim that some contradictions are true [the contradictory of PNC] and the position that all contradictions are [the contrary of PNC].”

Gottlieb puts the problem as follows:

In arguing for PNC we should expect Aristotle to be addressing someone who thinks that there is at least one case in which it is possible for the same thing to belong and not to belong to the same thing in the same respect. Instead, Aristotle spends most of [Metaphysics Γ.4] addressing someone who thinks that in every case (i.e., take any subject and property you like) it’s possible for the same thing to belong and not to belong to the same thing in the same respect. Aristotle appears to be arguing against someone who purports to believe the contrary and not the contradictory of PNC.

Given that Aristotle’s PNC is such a strong claim, namely, \( (\forall x)(\forall F) \sim (Fx & \sim Fx) \), even a single counterexample is enough to falsify PNC. For instance, out of all the trillions upon trillions of objects and predicates in the entire universe, if there is nothing that falsifies PNC except just one snowflake that is both symmetrical and not symmetrical in the same respect, then PNC is false. In short, the position that just some contradictions are true—hereafter referred to as SOME and formalized as, \( (\exists x)(\forall F)(Fx & \sim Fx) \)—or even that just one contradiction is true, falsifies PNC. But Aristotle appears to devote his defense of PNC to the position that all contradictions are true—hereafter referred to as ALL and formalized as, \( (\forall x)(\forall F)(Fx & \sim Fx) \)—rather than SOME. At the very least, he does not demarcate or explain where and how he is attacking SOME rather than ALL.

But it seems that Aristotle must clearly demarcate and explain where and how he is attacking SOME rather than ALL. For even if ALL is false, SOME might still be true. The fact that not all contradictions are true does not entail that all contradictions are false. So even if Aristotle has shown that ALL is false, he has not thereby shown that SOME is false. So PNC might still be false. Modern classical logic has explosivity, as was shown in Section I, so that SOME entails ALL. That

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23 Gottlieb (1994).

24 As Kirwan (1993: 104) notes, it’s not clear that Aristotle would have distinguished between \( (\exists x)(\forall F)(Fx \& \sim Fx) \) and \( (\exists x)(\forall F)(Fx \& \sim Fx) \), or between \( (\forall x)(\forall F)\Box (Fx \& \sim Fx) \) and \( (\forall x)(\forall F)(Fx \& \sim Fx) \).

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makes a refutation of ALL sufficient. But Aristotle cannot accept explosivity.\(^{26}\) Also, he gives clear evidence at \(Γ.4\) 1008a8–11—as will be discussed presently—that he considers SOME an independent possibility. So Aristotle’s defense must show that SOME is false. But it does not appear to do so.

IV. WHY ARISTOTLE’S APPARENTLY EXCLUSIVE FOCUS ON ALL IS NOT A BASIC, LOGICAL ERROR

During his defense of PNC, Aristotle makes a clear distinction between SOME and ALL:

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 \([=df\ ALL]\), or the theory is true of some statements and not of others \([=df\ SOME]\). And if not all, the exceptions will be agreed upon; but if of all [...](1008a8–11).\(^{27}\)

After making this distinction, Aristotle dismisses SOME with great ease. All he says about SOME, other than its definition, is that it’ll follow as a consequence that there will be certain agreed-upon points of truth. Kirwan\(^{28}\) takes an uncharitable view of this dismissal, claiming that Aristotle “dismisses [SOME] with the inadequate comment that it narrows the field of dispute.” Kirwan says no more

\(^{26}\) Curiously, Aristotle appears to describe and perhaps endorse explosivity in the Physics in reference to “refuting the merely contentious” arguments of Melissus and Parmenides, whose “premises are false and conclusions do not follow [...].” Or rather the argument of Melissus is gross and offers no difficulty at all: accept one ridiculous \([ἄτοπος]\) proposition and the rest follows – a simple enough proceeding.” (Phys.158a8–12). Aristotle seems to be arguing that because Melissus accepts one atopos or absurdity, refuting Melissus is simple enough, since such a refutation involves merely pointing out that all the other atopoi follow from the acceptance of that first atopos. But it’s unclear to me whether Aristotle means (1) that because Melissus accepts any atopos, all other atopoi follow; or (2) that it’s because Melissus accepts a very specific atopos, namely, that everything is one, all other atopoi follow. The former is far more suggestive of explosivity than the latter.

\(^{27}\) ἐτι ἦτοι περὶ ἀπαντα ὤτας ἔχει, καὶ ἐστι καὶ λευκὸν καὶ оὐ λευκὸν καὶ ὁν καὶ ὁυν ὁν, καὶ περὶ τᾶς ἄλλας φασίς καὶ ἀποφάσις ὁμοιοτρόπος \([=df\ ALL]\), ὃ ὁυ ἄλλα περὶ μὲν τινος \([=df\ SOME]\), περὶ τινος δ’ ὁν, καὶ εὶ μὲν μὴ περὶ πάσας, αὔται ἄν ἐλεν ὁμολογοῦμεναι: εἰ δὲ περὶ πάσας [...] (1008a8–11). Up until this point I have been relying exclusively on the English translation of the Metaphysics in the Barnes. J. Barnes, The Complete Works of Aristotle, Volumes I and II (Princeton, NJ: Princeton UP, 1984). But that translation of this crucial passage seems to insert some English words that do not correspond to the Greek in any obvious way, e.g., “compatible” and “true”. Kirwan’s translation of 1008a8–11 does not use “compatible” or “true”: “Again, either this is so in every case, i.e. a thing is both pale and not pale, both a thing-that-is and not a thing-that-is, and in a similar way for all other assertions and denials; or it is so in some cases but not in others. If it is not so in all cases, these would be agreed. But if it is so in all [...].” (Kirwan 1993: 13).

about the matter. My view is that Aristotle’s dismissal of SOME is “inadequate” if and only if a more thorough treatment of the position is required. But it’s not clear that such a treatment is required. In Section VII, I hope to show why this is so.

I take this passage as evidence that Aristotle does not think that SOME entails (or explodes into) ALL. On the supposition that he did think that SOME explodes into ALL, it’s very difficult to see why Aristotle would have stated that, in the case of SOME, the exceptions—those contradictions that are not true—would be agreed upon (homologeō). He would have stated that the exceptions could not be agreed upon, since, on this supposition, claiming that there are some violations of PNC entails that all contradictions are true. It would not be inconsistent, though, for Aristotle to argue that SOME does not explode into ALL while also arguing that a falsification of ALL provides a very good reason for thinking that SOME is false.

Finally, Aristotle’s neat distinction between SOME and ALL at 1008a8–11 does not, in at least one important respect, come as a surprise. Aristotle was the first thinker to carefully articulate the distinction between a pair such as SOME and ALL, namely, a contradictory (antiphatikos) as opposed to a contrary (enantios):

I call an affirmation and a negation contradictory [ἀντιφατικός] opposites when what one signifies universally the other signifies not universally, e.g. every man is white – not every man is white, no man is white – some man is white. But I call the universal affirmation and the universal negation contrary [ἑναντιός] opposites, e.g. every man is just – no man is just. So these cannot be true together, but their opposites may both be true with respect to the same thing, e.g. not every man is white – some man is white (De Int.17b.17–26).

We find the same distinction expressed in a slightly different way in Aristotle’s Metaphysics I (X): “Among opposites, contradictories admit of no middle term; for contradiction is this—an opposition, one or the other side of which must attach to anything whatever, i.e. which has no intermediate” (1057a33–35). Aristotle was acutely aware of the fact that contradictories exhaust the logical space, admitting of no intermediates, whereas contraries do not exhaust the logical space (and therefore admit of intermediates). It seems highly unlikely, then, that Aristotle would have failed to recognize the fact that “All contradictions are true” is the contrary of “No contradictions are true,” or the fact that “Not all contradictions are true” is the contradictory of “All contradictions are true.” So it also seems highly unlikely that Aristotle would have failed to recognize that proving

29 Politis (2004: 139, 153) also notes the distinction, and has more to say about it than Kirwan. This will be taken up in Section VII. The distinction is also noted and briefly discussed in Gottlieb (1994).
30 However, as Bailey (D. T. J. Bailey, “Plato and Aristotle on the Unhypothetical,” Oxford Studies in Ancient Philosophy 30 (2006): 101–26) points out, Aristotle formulates PNC in terms of contraries rather than contradictories in what I have as [B].
that the contrary of PNC is false does not entail that the contradictory of PNC is false.\textsuperscript{31}

V. ONE VITAL REASON ARISTOTLE GIVES SO MUCH ATTENTION TO ALL: HE TOOK HIS RADICAL, REAL OPPONENTS TO HOLD VIEWS DEEPLY CONNECTED TO ALL

Throughout his dense argumentation in defense of PNC in his Metaphysics \( \Gamma.4 \), there are only two instances where Aristotle mentions specific opponents. He writes that Anaxagoras holds the view that “all things are mixed together; so that nothing really exists,” and Protagoras the view that “it is equally possible to affirm and to deny anything of anything” (\( \Gamma.4 \) 1007b21–22, 25–26). Other than that, the arguments in \( \Gamma.4 \) seem to be aimed at imaginary opponents. But in \( \Gamma.5 \), Aristotle’s opponents become much more concrete. He discusses views he takes to be held by Anaxagoras, Cratylus, Democritus, Empedocles, Heraclitus, Parmenides, Protagoras, and Xenophanes. Even Homer is credited with holding an anti-PNC view.

Aristotle begins by arguing that since Protagoras holds that “all opinions and appearances are true” (a view discussed in Plato’s Theaetetus as the doctrine, “man is the measure of all things”), it follows that Protagoras is also bound to accept the view, “all statements must be at the same time true and false” (\( \Gamma.5 \) 1009a7–9). For it seems that people disagree about a great many matters, and each person is convinced that his or her opinion is correct. If Protagoras is right, then each pair of contradictory opinions is true. Each contradiction is true. The subject of each opinion both has the predicate asserted in that opinion and also has the predicate asserted in the corresponding contradictory opinion (1009a10–16). So Aristotle thinks that Protagoras’s view entails the contrary of PNC (\textit{ALL}).\textsuperscript{32} Perhaps Aristotle is a little too quick here: for one thing, it seems rather generous to presuppose that there does not exist a single thing about which people do not hold both an opinion and its contradictory. For (1) there are presumably things we have not had a chance to form opinions about yet, and (2)

\textsuperscript{31} There is also a good deal of evidence that Aristotle wrote an entire treatise on contrariety, though it did not make its way down to us. See Diogenes Laertius V, 21 (30); Hesychius in onomatologos (ch. De. Ar. Libris, p.49), s.v. (30) περί έναντιων ἃ; Simplicius, in categ. f.t. 3a (p. 83 b7); chiefly see Aristotelis Fragmenta, collected by Valentinus Rose, pp. 109–14, 118–24. V. Rose (ed.), Aristotelis Fragmenta (Leipzig, 1886). This evidence makes it even more unlikely that Aristotle would have confused contradictories with contraries, let alone in such a central and drawn-out discussion.

\textsuperscript{32} As Lee (2005: 120) explains, this argument of Aristotle’s “is in fact based on Plato’s self-refutation arguments in the Theaetetus, where Plato argues that Protagoras is committed to thinking that some beliefs are true and false and thereby refutes Protagoras’ original claim that all beliefs are true”. Aristotle draws the further implication, “everything both is and is not F, and vice versa”.

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there might be some subjects of opinion on which people do not disagree. But it still seems reasonable for Aristotle to infer that Protagoras’s view and its implications fall much closer to ALL than the comparatively moderate SOME.

Aristotle goes on to argue in Γ.5 that thinkers such as Anaxagoras, Cratylus, Democritus, Empedocles, Heraclitus, and Xenophanes have been led into confusion about matters as fundamental as the truth of PNC because of “observation of the sensible world” together with the assumption that knowledge is sensation, without appropriately qualifying their descriptions and understanding of what goes on in the sensible world (1009a22–23). Some of them, such as Anaxagoras, observe “contraries coming into existence out of the same thing” relying on the assumption that something that already exists cannot again come into existence, Anaxagoras arrives at the view that things “must have existed before as both contraries alike”, with everything “mixed in” with everything else (1008a23–27). A little later on, Aristotle attributes to Anaxagoras a doctrine that seems to be the same as Protagoras’s: “things would be for [them] as they supposed them to be” (1009b27–28). Aristotle explains that others, such as Democritus, hold that “the void and the full exist alike in every part, and yet one of these is being, and the other non-being” (1009a28–30). So being and non-being exist in every part of everything. These sound like radical views that Aristotle takes to be close to—if not identical with—ALL.

Aristotle seems to think that Empedocles holds a similar view to those held by Democritus and Anaxagoras. As evidence, he claims that “Empedocles says that when men change their condition they change their knowledge”; that “Wisdom increases in men according to their present state”; and “So far as their nature changes, so far to them always come changed thoughts into mind” (1009b17–22). It’s unclear whether—and if so, how—Aristotle thinks that any view expressed in these quotations is the same as, for example, Anaxagoras’s “everything is mixed together with everything” view, let alone Protagoras’s doctrine that each thing in the world is exactly as it appears to each person, even if there are many instances of contradictory opinions (about the same object, in the same respect, at the same time). For Empedocles might maintain that I am wise in the morning and not wise in the afternoon, without being in the slightest danger of conceding that I am both wise and not wise at one and the same time.

More charitably, we probably ought to take careful note of Aristotle’s lumping Empedocles in with those “thinkers [who] suppose knowledge to be sensation, and this to be a physical alteration [. . .] [so that] what appears to our senses must be true” (1009b13–15). So what Aristotle seems to mean here is that Empedocles allows that one and the same thing might be sensed by two (or more) people simultaneously; the thing might be sensed as cold by one person and as hot by another. So, if knowledge just is sensation, as Anaxagoras, Democritus, and Empedocles all hold (according to Aristotle) then one and the same the thing is
at the same time both known to be hot and known to be cold. Aristotle seems to have in mind the further inference that if knowledge is something like justified belief that is “tied down” to the truth, as is probably the most promising definition of knowledge discussed in Plato’s *Meno*, then it would be true that a single object is at the same and in the same respect both hot and cold. That’s a contradiction. Aristotle seems to think that this generalizes: there’s an endless proliferation of contradictions. So we get *ALL*.

Parmenides apparently speaks “in the same way” (τὸν αὐτὸν τρόπον) (1009b22–25):

> For as in each case the much-bent limbs are composed
> So is the mind of men; for in each and all men
> ‘Tis one thing thinks – the substance of their limbs;
> For that of which there is more is thought.

Aristotle takes Parmenides in this passage to be asserting that thought or intellect in each human being is merely a product of the way the human body is composed, not differing at all from the way in which human senses are composed. Why should this entrench Parmenides’s views with those of Anaxagoras, Democritus, Empedocles, and Protagoras? Aristotle seems to have something like the following reasoning in mind: if knowledge just is sensation, and if what is sensed is relative to the way in which that person is composed, then knowledge will be relative to the way in which that person is composed. But if knowledge requires truth, and since people often have contradictory opinions or impressions of one and the same thing, then, Aristotle seems to worry, it will be both true and false to say that one and the same object is in some state. Jane might “know” that some pile of sand is hot and, at the very same time, John might “know” that the very same pile of sand is cold. Of course, from this quotation alone it’s not clear why Aristotle does not consider that Parmenides could maintain that things in the world might not admit of any contradictions, but simply that human beings cannot guarantee epistemic access to the way things really are. So Parmenides might hold, as far as Aristotle’s provided evidence goes, that Protagorean relativism is true as far as human beings are concerned but perhaps false in reality. Aristotle seems to think, though, that Parmenides is committed to the stronger claim that Protagorean relativism is true not merely for us but also in reality; everything is or is not according to the way each of us is composed. So, Aristotle appears to infer, Parmenides thinks that everything both is and is not. Thus, again, we get *ALL*.

Cratylus, Heraclitus, Homer, and Xenophanes are also credited in Aristotle’s *Metaphysics* Γ.5 with radical positions that would make it “natural that beginners
in philosophy should lose heart” (1009b36–37). The evidence Aristotle gives for Homer’s anti-PNC view is decidedly obscure (1009b29–32):

He made Hector, when he was unconscious from the blow, lie ‘thinking other thoughts’, which implies that even those who are bereft of thoughts have thoughts, though not the same. Evidently, then, if both are forms of thought, the real things also are at the same time so and not so.

Hector himself is not obscure. He’s a key figure in Greek mythology and, more pertinently, in, for example, Homer’s *Iliad*. But Aristotle leaves it unfortunately abstruse just what exactly is the connection between this description of Hector’s “thinking other thoughts” and the view that all contradictions are true or the view that everything is as it appears to each of us. Why should not Homer be writing figuratively when he says that Hector “thinks other thoughts” when rendered unconscious? Even if we grant that Homer must be taken literally, why is Aristotle so quick to assume that unconscious people cannot have dreams, and that dreams do not count as “thinking other thoughts”? If indeed all of these assumptions are granted, it’s still not clear why Aristotle thinks that we get any contradictions outside “Hector while unconscious was both thinking and not thinking in the same time, in the same respect, and with all further qualifications added to meet dialectical objections.” But probably Aristotle wants the reader to treat this as one sample among a vast array of either explicitly contradiction endorsing or Protagorean relativism endorsing—and, implicitly, contradiction endorsing—passages and stories.

Aristotle also considers Heraclitus’s view that the world is changing everywhere and in every respect, such that “no true statement can be made” (1010a6–9). Part of Aristotle’s diagnosis of what has gone wrong is by now familiar: Heraclitus thinks that nature is all that there is, and what can be perceived in nature is all that can be known. But Heraclitus adds the doctrine that there is only movement and change in nature, in every respect. It’s not clear precisely if and how Aristotle thinks that this Heraclitean view entails that all contradictions are true. For if no true statement can be made then presumably Heraclitus would not endorse the truth of the statement, “All contradictions are true.” Superficially, Heracliteanism and *ALL* are at odds with one another: if *ALL* is true then every statement is true, whereas if Heracliteanism is true then, apparently, no statement is true. Though he does not make this explicit, perhaps Aristotle sees a deeper connection between *ALL* and Heracliteanism. Both positions entail that “to seek the truth would be to pursue flying game” (1009b37–38). They make truth impossible to pin down or understand. Heracliteanism does so by insisting that every candidate in the world for a true statement is constantly changing in every way, and *ALL* does so by insisting that everything that could be said about anything in the world in any way is true (and false). Aristotle seems to think that a proponent of such a radical view will end
up like poor Cratylus, “who finally did not think it right to say anything but only moved his finger, and criticized Heraclitus for saying that it is impossible to step twice into the same river; for he thought one could not do it even once” (1010a12–15).

Aristotle’s opponents are, then, a far cry from those contemporary philosophers who reject PNC only for special cases such as certain semantic paradoxes. His opponents do not selectively reject PNC. They annihilate PNC. By Aristotle’s lights, at least, opponents such as Anaxagoras, Cratylus, Democritus, Heraclitus, Parmenides, and Protagoras do not just posit some select areas where there are or might well be exceptions to PNC. Rather, they take being and non-being to be everywhere and in everything simultaneously; they argue that everything is changing constantly and in every respect; they hold that everything is mixed with everything else; they assert that all opinions, including all contradictory opinions, are simultaneously true. In this historical context, we can make much more sense of Aristotle’s apparently exclusive focus on PNC’s contrary rather than PNC’s contradictory. From a strictly logical perspective, PNC’s contrary, ALL, might well be thought largely irrelevant if Aristotle aims to defend PNC. But from a more concrete, historical perspective, Aristotle’s failure to directly address SOME makes a good deal of sense.

VI. A SECOND IMPORTANT REASON ARISTOTLE’S DEFENSE OF PNC SEEMS EVASIVE: HE IS CONFINED TO AN INDIRECT DEFENSE OF PNC

For Aristotle, the truth of PNC is better known than anything else, and is more certain than anything else. Yet PNC cannot be directly shown. It cannot be shown in a proof or a demonstration. There are at least three reasons why. First, Aristotle means something very specific by a “demonstration” (apodeixis). In a demonstration, the premises must be more certain than the conclusion. Since nothing can be more certain than the PNC, it follows necessarily that PNC cannot be the conclusion of a demonstration. Second, the truth of PNC, as the most certain principle of all principles, is at least implicitly relied upon in the premises of every demonstration. It follows, then, that any demonstration with PNC as a conclusion would have premises in which the truth of PNC is at least implicitly relied upon. So the demonstration in question would employ viciously circular reasoning or, more colloquially, it would commit the fallacy of begging the question against his opponents.

A third reason runs as follows: (1) It’s impossible that there could be a demonstration of “absolutely everything,” since otherwise there “would be an infinite regress” (Metaph.Γ.4.1006a8). In particular, if it were the case that absolutely
everything must be demonstrated, including all premises used to prove less certain (bebaios) conclusions in all demonstrations, and especially those demonstrations used to prove archai, then there would be a series of demonstrations that has no end and thus is infinite (apeiron). In that series, the things being used currently as premises to demonstrate those things used previously as premises—to prove things like first principles—must themselves be the conclusions of further demonstrations, and so on ad infinitum. That would be absurd, on Aristotle’s account, because “there would still be no demonstration” (Metaph. Γ.4.1006a9); (2) Given (1), it follows that the series of demonstrable things is finite. Since the series is finite, it has a beginning. At that beginning, there are indemonstrable things. Those indemonstrable things are first principles: they are starting points for all demonstrations; and (3) given that the PNC is more certain than anything else, including all other first principles, and given (1) and (2), it follows that the PNC must be one of those indemonstrable things (Metaph. Γ.4.1006a5–11). In fact, the PNC is more certain than any other first principle to be one of those indemonstrable things. Nothing is presupposed more often in demonstrations than the PNC, and nothing is more likely to be indemonstrable.

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33 As is noted in Lear (J. Lear, Aristotle: The Desire to Understand (Cambridge: Cambridge UP, 1988): 251), “There are two conditions which a principle must satisfy if it is to be the most certain of all. First, it must not be possible to be mistaken about it. Second, anyone who understands anything understands the principle.” The first condition is from 1005b12, the second from 1005b16.

34 Aristotle does not spell out exactly why he thinks that an infinite series of demonstrations entails that there would be no demonstration. But he might have in mind something like the following: Suppose one proves that “All A’s are C’s” using two premises: “All A’s are B’s” and “All B’s are C’s.” “All A’s are B’s” must be proved, as must “All B’s are C’s.” Suppose both premises are proved. Then the premises used to prove both premises must themselves each be proved. And the process iterates an infinite number of times. Further, for Aristotle “something is infinite if, taking it quantity by quantity, we can always take something outside” (Physics III.6.207a7–8). So call each stage of the iteration a quantity. For any quantity, there is a quantity outside quantity, namely, quantity . The premises of quantity are proved in quantity , but the premises in quantity are left unproved. Also, see Aristotle’s Posterior Analytics I 3.72b5–24, where he argues that it’s correct to think that if “we are led back forever” in our demonstrations of what is prior then “we would not understand what is posterior. . . for it is impossible to go through infinitely many things.”

35 Whitaker (C. W. A. Whitaker, Aristotle’s De Interpretatione (Oxford: Oxford UP, 1996)) notes that there is an important difference between a positive demonstration and a negative demonstration, and that Γ.4 employs only the latter. A negative demonstration “does not give reasons for the truth of the principle, or an understanding of it, either of which would be impossible; rather it gives reasons why the opponents cannot hold their position, and an understanding of why they must be wrong. If the opponents are wrong, then the principle is true” (Whitaker 1996: 188). Wedin (M. V. Wedin, “Aristotle on the Firmness of the Principle of Non-Contradiction,” Phronesis 49 (2004a): 225–65) contains an excellent discussion of Aristotle’s strategy in showing that PNC is not just any old indemonstrable principle but instead the firmest of all indemonstrable principles.
This forces Aristotle’s defense of PNC into a rather unusual and delicate position. As Terence Irwin helpfully explains, Aristotle’s defense must be “neither demonstrative nor purely dialectical.” For if Aristotle’s defense is demonstrative, then we run into familiar problems such as using PNC to demonstrate PNC. If, on the other hand, the defense is purely dialectical then there is no guarantee that the conclusion will be “knowledge of the truth” as opposed to “a coherent account of common beliefs.” Moreover, using what we today would call a reductio ad absurdum argument, an argument to the effect that the opponent’s position entails inconsistency, is much too clumsy. For a reductio will not trouble an opponent who thinks that contradictions are true: “this is a peculiar case in which forcing your adversary to concede the contradictory of his own thesis is not a clear-cut dialectical trump.” Aristotle would seem to obviously beg the question against his anti-PNC opponents if he claimed that their position is untenable because their position entails a rejection of PNC. So if Aristotle tries to use the Socratic “elenchus” method of argument, wherein Socrates guides his opponent toward the admission that his opponent’s position entails an inconsistency (described in so many of the dialogues that populate Plato’s extant writings), this technique must be handled with special care. It cannot be applied in a straightforward way and one might worry, it can do no better than helping to persuade a neutral arbiter—as opposed to Aristotle’s contradiction-welcoming opponents—of the truth of PNC. As I’ll argue in VII, though, Aristotle aims at convincing not just a neutral arbiter but also his contradiction-welcoming opponents that coherent communication in general, including his opponent’s communication of his or her anti-PNC position relies on non-contradiction.

VII. WHY ARISTOTLE’S DEFENSE OF PNC UNDERMINES NOT JUST ALL BUT ALSO SOME

Why does Aristotle take his defense of PNC to be successful, despite his appearing to be exclusively interesting in attacking ALL (“All contradictions are true”) rather than SOME (“Some contradictions are true”)? Or, distracted by a plethora of predecessors with confused and radical views, and confined to a particular kind of indirect means of defense, has the task of defending a principle more certain and foundational than any other “reduced Aristotle to sheer

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I think that Aristotle was not reduced to sheer babble. Instead, it seems to me that Aristotle’s defense of PNC can be read in a way that is not just excusable and sensible in its historical and dialectical context, but also in a way that is more objectively, philosophically attractive. Against the PNC-rejecter, especially the one who demands that everything, including PNC, must be demonstrated directly, Aristotle begins his defense of PNC with an exclusive disjunction: Either the opponent says something (the indefinite τι) or nothing (μηθέων, mêthen) (1006a12–13). If the opponent says not something (τι) but, instead, nothing, then Aristotle’s opponent cannot reason about anything at all. That is because, on Aristotle’s account, saying something—and as we will see momentarily, something that signifies in a particular way—is a necessary condition for reasoning or communicating about anything at all. Not only is such a person incapable of reasoning or communicating with others, but also such a person is incapable of being reasoned or communicated with by anyone else, including herself. Similarly, plants do not reason at all. Nor can anyone or anything else reason with plants. Even plants cannot reason with plants. So Aristotle concludes that if his opponent says nothing then his opponent is “no better than a mere plant” (1006a15).

But what if Aristotle’s opponent decides to be a little more obliging, so that she says something? It turns out that Aristotle does not require his opponent to be very obliging at all, for by “something” Aristotle does not mean that the opponent must “say that something either is or is not [εἶναι τι λέγειν ἢ μην εἶναι]” (1006a16–17). Such a request, Aristotle notes, might beg the question against his opponent. For saying that something either is or is not would presuppose the truth of PNC. But the truth of PNC is precisely the point that needs to be proved by Aristotle against the PNC-rejecter. Rather, by “something” Aristotle means “something which is significant [so that it signifies something] both for himself [the opponent] and for another [άλλα σημαίνειν γε τι και αὐτῷ καὶ άλλω]” (1006a21–22). “To signify” (sêmainein) something by what one says is taken by Aristotle as a necessary condition for saying “anything” (1006a23). That’s because to signify nothing by what one says is to be in a situation similar to the

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38 Anscombe (G. E. M. Anscombe, “Modern Moral Philosophy,” Philosophy 33 (1958): 1–19) famously argued that “[the difficulty of the concept ‘pleasure’] reduced Aristotle to sheer babble about ‘the bloom on the cheek of youth’ because, for good reasons, he wanted to make it out both identical with and different from the pleasurable activity.” There are two notable connections between my discussion here and Anscombe’s: First, making pleasure both identical with and not identical with the pleasurable activity would be a violation of PNC (so long as the context in which it is identical with the pleasurable activity and the context in which it is non-identical are in all respects the same). Second, if Aristotle’s defense of PNC fails to defend a claim anywhere near as strong as PNC, without any further justification for that move, then it’s difficult to see how Aristotle is not babbling.

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plant-like opponent who chose to say nothing in the first place. Aristotle requires his opponent to say something that’s not just significant for the opponent but also for another. If the PNC-rejecter is required to say something that is significant for the PNC-rejecter but not necessarily also for another, then she might say something that fails to signify anything for another. But such a thing might be nonsensical. For example, to say “woman” is likely to be significant for myself and for another, but to say “shabadabadoo” is not.39

Once his opponent has said something that is significant both for the opponent and for another, “we shall already have something definite [hòrismenon]” (1006a24–25). Aristotle argues that if I say something by which I signify something to myself and to another – the sémainein condition – then I have conceded that at least one thing is determinate.40 The result of so conceding, Aristotle argues, is that “something is true apart from demonstration”: “not everything will be ‘so and not so’ [οὐκ ἂν πᾶν ὤστος καὶ οὐχ ὤστος ἔχοι]” (1006a27–28). Aristotle’s first argument in defense of PNC (at 1006a12–28) can be stated in slightly more general terms as follows.

Premise 1: A person (such as a PNC-rejecter) may either say something, or nothing.

P2: If a person (such as a PNC-rejecter) says nothing, she cannot reason with anyone. Nor can anyone reason with her.

P3: To say “something” is to say something that is significant to oneself and to another – the sémainein condition.

P4: If something satisfying the sémainein condition is said, then at least one thing is determinate.

P5: If at least one thing is determinate then not everything is “so and not so”. (In particular, the one thing from P4 is not “so and not so”).

39 It is not entirely clear to me what exactly Aristotle means by καὶ ὥλλο ("and another") in σημαίνειν γε τι καὶ ὤστο καὶ ὥλλο at 1006a21–22. Who is the other? Does Aristotle mean “another [person]” in the sense of a person arbitrarily selected from all people, or does he mean a person non-arbitrarily selected from those people familiar to him or to his opponent? My suspicion is that Aristotle has something closer to the arbitrary selection in mind for the ὥλλο condition, mainly because the request as a whole is not to say something that Aristotle has in mind, let alone something Aristotle has suggested. Aristotle is giving his opponent his pick of just about the broadest range of options: any particular sound that signifies something “for you and someone else.”

40 Just as Aristotle seems to equate radical indeterminacy with everything being “so and not so,” Aristotle also seems to equate the possibility that one word has an infinite number of meanings with the possibility that one word has no meaning at all: “If, however, [the meanings assigned to a word] were not limited but one were to say that the word has an infinite number of meanings, obviously reasoning would be impossible; for not to have one meaning is to have no meaning [...] τι δὲ μὴ τεθείη, ὥλλ' ἀπειρα σημαίνειν φαϊνη, φανερόν ὅτι οὐκ ἂν εἴη λόγος: τὸ γάρ μὴ ἐν σημαίνειν οὐδὲν σημαίνειν ἐστίν]” (1006b6–9).
Conclusion: Either the PNC-rejecter cannot be reasoned with and no one can reason with him, or he concedes that not everything is “so and not so”.

In Aristotle’s argument above, as I have reconstructed it, I take Premise 4 to be a very strong claim. It seems to require that to say anything that satisfies the sêmainein condition must concede that there is something that is determinate. Suppose it’s not the case that Aristotle’s argument requires P4 to be as strong as “Anything that can be said by anyone (that also satisfies the sêmainein condition) concedes that something is determinate.” So a weaker claim will work. For example, change P4 to “Almost anything that can be said by anyone (that also satisfies the sêmainein condition) concedes something that is determinate.” The truth of such a claim is consistent with there being at least one thing satisfying the sêmainein condition that can be said by anyone, but which does not concede something that is determinate. It is possible, then, that when Aristotle asks his opponent to say something satisfying the sêmainein condition, his opponent says that very thing—the thing that satisfies the sêmainein condition but without conceding something that is determinate. But then P4 is false.

I think that the premises in the argument above might well prove a conclusion a good deal stronger than just “Not everything is ‘so and not so’.” They seem to show that there are a great many things that are determinate. In fact, the premises go a long way toward disproving SOME and defending PNC. There are, after all, a great many ordinary things that are said in the world that would seem to safely satisfy the sêmainein condition: a great many things signify something (as opposed to nothing, and as opposed to everything) for the person saying it and for another. It’s in virtue of the fact that different words and different combinations of those words tend to each mean different, defined and determinate things—both to the person saying it and to other people—that Aristotle’s opponent understands (1) what Aristotle means when he makes the sounds forming the words expressing PNC and (2) why those sounds made by Aristotle express something, namely, PNC, that contradicts the opponent’s own view. For if Aristotle’s opponent did not understand the sounds made by Aristotle as expressing PNC (and not the contradictory of PNC), then it’s unlikely that there would be any opponent with whom Aristotle has to argue. More generally, take every word that has been used in every conversation involving at least two human beings in the history of the world. That includes, presumably, a very large amount of words. It seems a broad but fairly uncontroversial assumption that at least a significant percentage—perhaps even the vast majority—of those words satisfy the sêmainein condition. After all, it’s unlikely that conversations would have continued, and languages developed over the centuries if it were not the case that in the vast majority of those conversations, what was said was understood more or less as intended.
Further, even many sounds that are not words tend to each have different significations satisfying the sêmainein condition. A groan of displeasure is not a word. But a groan of displeasure seems to be understood as meaning more or less the same thing each time it is heard and made, even among people who speak different languages. So a groan of displeasure seems to satisfy the sêmainein condition. So, too, an exclamation as a result of a shock or surprise is a sound that very often is not a word at all. Yet, if I were to make such a sound right now, I suspect that the people around me would think that I had just been shocked or surprised—perhaps they’d also be a little shocked themselves. But in particular, they probably would not take my sound to indicate that I am bored or, more generally, not shocked. It’s a similar case, I think, with laughter: laughter is just a sound rather than a word, but seems to satisfy the sêmainein condition. Indeed, it appears that many other types of sounds are very likely to satisfy the sêmainein condition. These seem to be the sorts of common sense assumptions, inferences and intuitions Aristotle has in mind.

It appears, then, that there are a great many things which are not “so and not so,” according to the premises of the argument at 1006a12–28. Here is why: (1) there a great many things that satisfy the sêmainein condition; (2) saying anything satisfying the sêmainein condition concedes something that is determinate; (3) anything that is determinate falsifies “so and not so”; (4) anything that is not “so and not so” is a falsification of ALL; (5) there are evidently a great many things that are not “so and not so”; and therefore (6) there are a great many things that falsify ALL. In fact, there seem to be so many such falsifications that I’m inclined to think that, taken together, all those falsifications come at least very close to falsifying SOME. Thus the premises in the argument at 1006a12–28, the

41 Perhaps a case can be made for the claim that satisfaction of the sêmainein condition extends even beyond sounds to signs. After all, a frown seems to have a meaning more or less universally distinct from that of a smile. Similarly, raising one’s eyebrows might satisfy the sêmainein condition. But here I may be straying from Aristotle’s argument at 1006a12–28, since Aristotle states that the opponent’s silence—saying μηθεύv as opposed to τι—rules out the opponent’s ability to reason or be reasoned with.

42 Aristotle notes elsewhere, “Even inarticulate noises (of beasts, for instance) do indeed reveal something” (De Int.16a 28–29). J. Barnes, The Complete Works of Aristotle, Volume I (Princeton, NJ: Princeton UP, 1984). Perhaps it is possible on Aristotle’s account that even sounds made by non-human animals can satisfy the sêmainein condition. After all, animals mean something by the sounds they make, and other animals often understand that meaning. Even the ancient sceptics seemed to be thoroughly convinced of this point: “We certainly see animals uttering quite human cries—jays, for instance, and others” (PH i 74). R. G. Bury, trans., Sextus Empiricus (Loeb Classical Library), 4 volumes (Cambridge, MA: Harvard UP, 1939–49).
focal point of which is Aristotle’s theory of what counts as a thing that is deter-
minate, seem to come at least very close to defending PNC.\textsuperscript{43}

In fact, one might well think that Aristotle’s defense of PNC is more effective
against a moderate (if also imaginary) opponent, one who holds that some but not
all contradictions are true, than against a much more radical opponent such as
Anaxagoras or Protagoras. For an opponent who holds that it’s the case that \((\forall x)\)
\((\forall F)(Fx \& \sim Fx)\) can accept every premise and inference in Aristotle’s arguments
without having her position undermined. Each of those premises and inferences
might simply be a conjunct in one of the conjunctions forming a small sample of
the contradictions that Aristotle’s opponent takes to be true. His opponent also
rejects every premise and inference in Aristotle’s arguments: those are just the cor-
responding conjuncts in that small sample. She can maintain that every one of Aris-
totle’s claims is question-begging (and that every one of his claims is also not
question-begging). Of course, Aristotle might point out that if this is so then it’s not
at all clear why his opponent has bothered to articulate an anti-PNC position or, for
that matter, any position at all. For if his opponent’s position is indeed that radical
then by his opponent’s lights it’s also the case that PNC is true, indemonstrable, and
more certain than any other first principle. But the dialectic between Aristotle and a
proponent of \((\exists x)(\exists F)(Fx \& \sim Fx)\) is more manageable. For if Aristotle shows—as
I have argued he can and does—that the necessary conditions for coherent commu-
nication militate against the conditions for contradictions to be true, then a propo-
nent of \(\text{SOME}, (\exists x)(\exists F)(Fx \& \sim Fx)\), has a good reason to severely weaken her
position (from “there are some true contradictions” to “it’s possible that there is
some small pocket of true contradictions as yet undiscovered”) if not to give up her
position entirely, and to whole-heartedly reject \(\text{ALL}\).

VIII. CONCLUSION

I mentioned in Section III that Lukasiewicz\textsuperscript{44} seems to be the first to have
noted that Aristotle’s defense of PNC appears to defend PNC against its

\textsuperscript{43} Gottlieb (1994) argues that Aristotle’s defense of PNC employs a strategy that is the reverse of Pla-
to’s strategy in attacking Protagorean relativism in the \textit{Theaetetus}. That is, on her account, Aristotle
is arguing that because it is the case that meaningful communication, including meaningful lan-
guage as we know it, is indeed possible, it follows that PNC-rejecters such as Protagoras must hold
not just that “Some things are so and not so” but that “Everything is so and not so.” As a result, “if
Aristotle and Plato are right, a Protagorean would have to reject PNC across the board, so Aristotle
is not addressing a straw opponent nor is he confused when he argues against someone who holds
the contrary and not the contradictory of PNC” (Ibid). But as I show here, I think that we can read
Aristotle as showing not merely that his opponents’ views are deeply connected with—if not simply
entailing—\(\text{ALL}\), but, more directly, as using the foundations for coherent communication to seri-
ously undermine \(\text{SOME}\) (rather than just \(\text{ALL}\)).

\textsuperscript{44} Łukasiewicz (1910).
contrary—\textit{ALL}—rather than its contradictory—\textit{SOME}. The closing sentences of Lukasiewicz’s paper are also worth quoting:

Denial of the principle of contradiction would have opened door and gate to every falsity and nipped the young, blossoming science in the bud. Hence, the Stagirite turns against the opponents of the principle with forceful language in which one can trace an internal fervor, against the eristic thinkers of Megara, the cynics of the school of Antisthenes, the disciples of Heraclitus, the partisans of Protagoras; and he battles with all of them for a theoretical principle as if for personal goods. He might well have himself felt the weakness of his argument, and so he announced his principle as a final \textit{axiom}, an unassailable \textit{dogma}.

I have tried to show that the aforementioned Stagirite, no doubt with some internal fervor, gives a defense of PNC that is (1) aimed at real, radical opponents who Aristotle took to hold views deeply connected to PNC; (2) must be a particular kind of indirect defense than a direct demonstration; and (3) demonstrates the reliance of coherent communication on non-contradiction. Read this way, Aristotle’s defense of PNC is not just historically and dialectically excusable and sensible, but also philosophically attractive. He gives a fairly compelling case to reject not just PNC’s contrary but also PNC’s contradictory.\footnote{For helpful comments on earlier drafts of this paper, I am grateful to Dominic Bailey, Paula Gottlieb, Kathrin Koslicki, Mitzi (Mi-Kyoung) Lee, Robert Pasnau, and an anonymous reviewer for the \textit{Philosophical Forum}.}

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