Contradiction, Being, and Meaning in Aristotle's *Metaphysics Gamma*

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This paper focuses on Aristotle's discussion of PNC in *Metaphysics* Gamma and argues that the argument operates at three different levels: ontological, doxastic, and semantic through the invocation of three philosophical personae: the first one (the philosopher) can only *state* what is otherwise unprovable, the second one (a geometer) can only *confirm* that we should trust PNC, the third one (a sophistical opponent) *denies* PNC and must be silenced. Aristotle cannot prove what is beyond proof. This situation results in a fundamental ambiguity in the figure of *the* philosopher. The *Metaphysics* is written from the standpoint of an investigative thinker who admits her puzzlement before a question that will forever remain open and imagines another philosopher who has achieved a god-like insight into the first principles of all things. The path from the first figure to the second one, however, remains an enigmatic leap.

When Aristotle introduces the principle of non-contradiction[1] in *Metaphysics* Gamma, he presents it as operating on three different planes: an ontological one, "the same thing cannot at the same time belong and not belong to the same thing and in the same respect" (*Meta*. Γ, 1005b18-20); a doxastic one, "it is not possible to *believe* the same thing to be and not to be" (*Meta*. Γ, 1005b23-24); and a semantic one.[2] To these three levels

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[1] The literature shows some uncertainty on the term that should be used. We find: 'principle of contradiction', 'principle of non-contradiction' (sometimes spelled in one word), 'law of contradiction', or 'law of non-contradiction' and even 'rule of contradiction'. The expression itself does not occur anywhere in Aristotle who simply *qualifies* it as "the firmest principle." I chose PNC because Aristotle clearly states that this is a principle (*archē*) and because its formulation is negative: it states what *cannot* be.

[2] The three planes I distinguish differ from Łukasiewicz's own tripartition. Łukasiewicz distinguishes an *ontological*, a *logical*, and a *psychological* plane. However, since Aristotelian logic is not formalized, the so-called 'psychological' level cannot be separated from the logical one for Aristotle's argument is about what cannot be believed, and the point is to demonstrate a *logical* contradiction.

correspond three philosophical personae who play an important, yet often-unnoticed role: the philosopher (who *states* PNC), the scientist (who *uses* PNC), and the sophist (who *denies* PNC).[3] The argument concerns what can be, what can be believed, and what can be meant. I will argue that these three personae play a key role in an argument that does not progress but in a sense regresses from the highest noetic intuition to the pursuit of deductive knowledge and, eventually, to the basic condition of communication.

Despite the tendency of many philosophers since Łukasiewicz to disconnect the logical formulation from its ontological source and treat it primarily as an epistemic principle or as a rule of logic ($\neg (p \wedge \neg p)$), I argue that PNC is first and foremost an *ontological* principle since it occurs in book Gamma, which is explicitly concerned with the possibility of a science of being *qua* being. As an *ontological* principle, PNC states that contradiction is not possible and, *a fortiori*, that it cannot be real. Reality excludes the emergence of contradictory beings or states of affair (time-travel paradoxes seem to agree on this). Since PNC states what *cannot* be, its positive correlate is that whatever is real or merely possible must be determinate (it is *this* and therefore not that; i.e., whatever is must have a definite identity). The formalized version of PNC fails to capture the ontological and semantic planes and ignores the conditions that PNC requires. The ontological formulation (which Aristotle states first) is the ground that explains the application of PNC to the two other realms (beliefs and meaning). Yet, it is only with the last one that Aristotle offers an indirect confirmation of PNC.

Following the three personae, in the first part this essay will clarify the sense in which PNC function as an ontological principle and in particular, how it is compatible with the concept of *dunamis*. In the second part I consider how it can be established that PNC is the "firmest of all principles", in particular in the face of challenges that have been proposed

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Following Corradini, we could call the fusion of the logical and the so-called psychological an "epistemic logic". The argument about semantics, however, adds something new that is irreducible to the two others. Jan Łukasiewicz (trans. Vernon Wedin), "On the Principle of Contradiction in Aristotle", *The Review of Metaphysics*, Vol. 24.3 1971, 487. Antonella Corradini, "Riflessioni sul principio di non-contraddizione", *Epistemologia,* Vol. 8, 1985, 240

[3] I use the expression "philosophical personae" to suggest that these characters are, in part, invented.

recently by Wedin and Kirby.[4] I then turn my attention to the only (indirect) confirmation of PNC that Aristotle offers and which occurs at the semantic level via an encounter with a sophist. I argue that Aristotle replaces the requirement of *signification* he posits first by another one: the expression must have a *definition* (and therefore the *definiendum* must have an essence). Finally, I show that this situation reveals an ambiguity concerning first philosophy itself. The seminal figure of "the philosopher" is split between one who has achieved a noetic intuition of first principles and one who inquires and seeks an elusive knowledge.

I. *Ontology*

Archē (traditionally translated as 'principle') designates a starting point, a beginning, a source as well as the first place of power that rules over other things. Such a starting point is not something that is relinquished in the past; it is, on the contrary, what is most active in everything that follows. "It is a common property of all principles to be the first thing from which something either is or comes into being or becomes known" (*Meta*. Δ, 1013a17-19). The *archē* is the primordial cause and ground that determines the whatness of entities. PNC arises as an ontological principle when the determination of first philosophy extends from the initial consideration of being *qua* being to the consideration of the *ground* of being. However, PNC also extends to deductive knowledge. "It is clear then that it belongs to the philosopher, that is to the one who gets a theoretical grasp *on the nature of all substances*, also to investigate the *principles of deductions*" (*Meta*. Γ, 1005b5-6). What constitutes a principle in first philosophy functions as an axiom in the deductive sciences.

Contradiction occurs between an affirmation and its corresponding negation and must therefore be distinguished from contrariety, since in contrariety the predicate belongs to the same genus and admit of intermediaries (e.g., the contraries 'cold' and 'hot' belong to the genus 'temperature' and admit of the intermediate 'warm'). Contraries allow gradual change between extremes and assume an underlying subject that remains the same, even though the

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[4] Michael Wedin, "Aristotle on the Firmness of the Principle of Non-Contradiction" *Phronesis* Vol. 98.3, 2004, 225-265. Jeremy Kirby, *The Gamma Paradoxes*, *An Analysis of the Fourth Book of Aristotle's Metaphysics*, (Lanham: MD: Lexington Books 2018)

extremes themselves do not move to their opposites or intermediates. "If change proceeds from opposites or from intermediate points <…> there must be something underlying which changes into the contrary state; for the contraries do not change" (*Meta.* Λ, 1069b4-7). By contrast, there is no movement between contradictories; we are faced with the stark opposition of being and non-being, is and is not.

The application of PNC depends on three requirements: one positive (it must be the same subject), and two negative (PNC excludes simultaneity and identical respect). While the first two seem intuitively evident ("Socrates is sitting at 2 o'clock and not sitting at 2:30" assumes that we are talking of the same person, but the temporal difference does not yield any contradiction). The last one, however, (*kata to auto* – literally, 'upon the same'), is less clear. "In the same respect" is a broad expression that can refer to a relational predicate that compares one being to two different ones (a cat is a large animal with respect to a flea but not so with respect to a horse). Respect also applies to perception and perspective (the same object can appear differently if it is seen from different angles). Finally, *kata to auto* also applies to the distinction between potentiality and actuality; thus, one can say that this acorn is *and* is not an oak tree in the sense that, *in actuality*, it is not a tree and nonetheless it retains the capacity of becoming one. All these instances stipulate that we must keep one and the same frame of reference. Taken together, the conditions of application of PNC guarantees the possibility of making ontological, conceptual, and semantic distinctions.

But to *what* does the principle apply? Since it belongs to first philosophy and since substance enjoys an ontological privilege, it certainly applies to substances. Should one reject the validity of PNC at the ontological level, one would have to abandon substance ontology as well as the idea that entities have essences. Further, the expression: "*belong* and *not belong* to the same thing" entails that PNC also extends to the *attributes* of substances.

It is well known, however, that ancient philosophers did not restrict "being" to existence. Consider two cases that Meinong's ontology would admit[5]: a possible but not

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[5] Obviously, Aristotle was not aware of Meinong's 1904 *Theory of Objects*; however, I will argue in the third section that when he moves to the consideration of linguistic meaning, Aristotle requires only one criterion: the opponent must simply state something that is meaningful to herself and to her interlocutor. Such a criterion would extend to Meinongian objects.

existing being such as Pegasus and an impossible object such as a Penrose triangle.[6] The first one does not exist and the second one is not possible (at least in the restricted domain of a three-dimensional world). Yet, true claims can be made about them and since we can create images of Pegasus or a Penrose triangle, a Meinongian would claim that what is represented in these images *is* (we are not dealing with pure nothingness). If so, it seems that we can extend the realm of application of PNC to these domains as well.

The case of potentiality (*dunamis*), however, raises a difficulty.[7] The capacity for this acorn to be an oak tree does not rule out its negation (what is in potency may well never actualize); thus, the affirmation and the negation are true at the same time. In the famous example of *De interpretatione* 9, the claims "there will be a sea battle tomorrow" and its negation "there will not be a sea battle tomorrow" seem to constitute a contradictory pair since they cannot both occur.

A sea battle must either take place tomorrow or not, but it is not necessary that it should take place tomorrow, neither is it necessary that it should not take place, yet it is necessary that it either should or should not take place tomorrow (*De Int*. 19a30-34).
The solution is modal: Aristotle asks where the necessity falls, and the answer is that necessity applies to the *alternative as a whole* (it is necessary *that* either/or) but does not distribute to the members of the contradictory pair. For this reason, we need to express the alternative in terms of possibility: 'a sea battle *may* and *may not* occur tomorrow;' and in such a case, if the affirmation is true, so is the negation.

Now it appears that the same thing both may and may not be; for instance, everything that may be cut or may walk may also avoid being cut and refrain from walking; and the reason is that those things that have potency in this sense are not always actual (*De Int*. 19a12-14).

Does this mean that *dunamis* escapes PNC and that the principle applies only to what is actual? The answer must be nuanced. The negation of "this acorn has the potency of becoming an oak tree" is "this acorn *does not* have the potency of becoming an oak tree";

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[6] Penrose Triangle: .

[7] I distinguish possibility and potentiality in that *potentiality* is operative in this world as a force, power or capacity to be or to become something else than what it actually is, while *possibility* simply requires that a concept does not contain any contradiction.

here, the contradictory pair is still ruled by the principle. But this applies at the level of *assertions*: "there is evidently, then, no necessity that one should be true and the other false *in the case of affirmations and denials*" (*De Int*. 19b1-2). At the ontological level one should notice that *dunamis* has a temporal sense: "the case of those things which, as yet, are potential but do not actually exist, is different from that of actual beings" (*De Int*. 19b3-4). Insofar as it is a force or capacity, *dunamis* indicates the play of a (still undecided) future in the present and this future remains contingent, thus undetermined. While it is true that whatever *will be* cannot both be and not be, *what* will be is not yet decided. The issue depends on what 'necessity' and 'impossibility' mean. In book Gamma, Aristotle seems to conflate "impossibility" and "contradiction." Yet, in Delta 5 Aristotle declares that:

It is necessary for what does not admit of being otherwise to be the way it is. And it is in accord with this sort of necessity that all the others are, in some way, said to be necessary (*Meta*. Δ, 1015a32-35).

Two comments: (a) temporally, "what does not admit of being otherwise" includes the past and the present. The term "necessity" has here the sense of immutability. (b) Another way for something to be said to be necessary is, for instance, compulsion (*biaion*); yet, compulsion does not entail a direct contradiction even though it denotes an impossibility. As Delta 5 suggests, some things are necessary because of an *external* cause (if one is tied down to a bed, one cannot stand up) while others are so because of an *internal* cause (if an individual belongs to a certain species, it cannot be otherwise; i.e., if this is a cat then it cannot be a donkey). It is this second sense (internal necessity by virtue of something's essence) that is primary, while compulsion is relative to external circumstances.

Yet, to claim that PNC is ontological leads to the suggestion that it is inseparable from something else; namely, the principle of identity. For this reason, Łukasiewicz argues that PNC cannot be the principle of principles because it is itself grounded on the more basic principle of identity (any entity is identical to itself). "The principle of contradiction cannot be formulated without the concepts of negation and logical multiplication, which are expressed in the words 'and at the same time;' while the principle of identity holds very well without recourse to those concepts".[8] Łukasiewicz appeals to the fact that identity is more

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[8] Łukasiewicz, 493. Łukasiewicz himself does not believe that the principle of identity is the ultimate logical principle: "There is *only one* principle which cannot be demonstrated in terms of other principles, but which is rather true and demonstrated 'through itself' [*durch sich selbst*]. This is the

"basic" because its *formulation* requires fewer concepts. Yet, a greater simplicity in formulation does not establish an ontological relation of dependence. Leibniz, for his part, links both principles by treating identity as the first *positive* truth and PNC as the first *negative* truth.[9] I would suggest that PNC and identity should be understood as counterparts of each other. If PNC rules all that is simply insofar as it is, this entails that all beings and states of being have a determinate identity and *vice versa*. As Heidegger suggests, we can understand PNC "as negative expression of the principle of identity."[10] Ontologically, PNC and the principle of identity show that whatever counts as a being must have a certain permanence, even if this is not an absolute one (i.e., *so long as it is*, what is must be so-and-so and therefore not otherwise). In that sense PNC and identity are meant to secure the ontological privilege of presence.

The confrontation with the Heracliteans reveals that this is the case, for there is an alternative view that constitutes a threat to Aristotle's ontology and that motivates his answer; namely, the hypothesis of universal flux.[11]

And further they held these views because they saw that all this world of nature is in motion and that no true statement can be made about that which changes; at least, regarding that which everywhere in every respect is changing nothing could truly be affirmed. It was this belief that blossomed into the most extreme of the views above mentioned, that of the professed Heracliteans and such as was held by Cratylus who, finally, did not think it right to say anything but only moved his finger, and criticized Heraclitus for saying that it is

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proposition: 'An affirmative proposition I designate as true, when it confers on an object the characteristic appropriate to it'" 494 (my emphasis).

[9] Leibniz, *New Essays on Human Understanding*, IV, 2, §1

[10] Heidegger, *The Metaphysical Foundations of Logic*, trans. Michael Heim, (Bloomington, IN: Indiana University Press, 1984), 52. One could object that this ignores Aristotle's contention that affirmation is prior to negation.

[11] I agree with Christof Rapp's assertion that "his [Aristotle's] main target is not Heraclitus himself, but the *use of these consequences within a sophistical/eristic context*; however, he seems to blame Heraclitus for fostering these tendencies by overstating his views to the point that they seem paradoxical". Christof Rapp, "His Dearest Enemy, Heraclitus in the Aristotelian Oeuvre" in: Enrica Fantino, Ulrike Muss, Kurt Sier, and Charlotte Schubert (eds.) *Heraklit im Kontext*, (Berlin/Boston: De Gruyter, 2017) 417 (my emphasis).

impossible to step twice into the same river; for he thought one could not do it even once (*Meta*. Γ, 1010a8-15).

The case of Cratylus is significant since it entails renouncing language (an issue that will reappear when we confront the third persona: the sophist). It is so because, if all is flux and impermanence, then it may be language (or more specifically the act of naming) that causes the *illusion* that things do have a fixed identity when, in fact, they are *and* are not since an entity caught in the river of time constantly *ceases* to be what it was and is constantly *not yet* what it will be. Being requires full presence. One could say that with Parmenides, Plato, and Aristotle ontology must either exclude time or somehow reconcile it with presence. That the flux theory is the main target of Aristotle is further supported by the fact that some of Heraclitus' fragments appear to make contradictory statements (e.g., "immortal mortals, mortal immortals" DK22B62 or "unwilling and willing to be called by the name of Zeus" DK22B32). It is not necessarily the case, however, that these fragments amount to explicit violations of PNC since they can be interpreted as taking the same thing in different respects.[12]

Nevertheless, the primacy of the ontological plane is again confirmed since, if universal flux of "everything and in every respect" obtains, then reality is fundamentally impermanent and with it the possibility of knowing (which assumes truth) and of naming (which assumes identity) collapses. Of course, Aristotle does not reject the claim that the natural world is governed by change (this is the starting point of the *Physics*) but it is the *consequence* the Heracliteans drew from it that he rejects: "the doctrine of Heraclitus that all things are and are not seem to make everything true" (*Meta*. Γ, 1012a24). In Aristotle's view, we can make true claims about the world so long as these claims are about the universal characteristics of the perceptible world rather than about the changeable phenomena themselves.[13] Ultimately, it is the opposition of being and non-being that constitutes the core of PNC and although being is said in many senses, the opposition of being and non-being

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[12] This, at least, is clear in the following fragment: "Sea is the *purest and most polluted* water: for fish drinkable and healthy, for men undrinkable and harmful" (DK22B61).

[13] Of course, this does not go without difficulties. As Rapp observed: "Since Aristotle himself rejects the separate existence of universals, it is only with great efforts on his part that he is able to make his own position plausible. Hence, the problem posed by the changeability of the perceptible world is anything but trivial or superficial" (Rapp, 436).

applies to all categories as well as to the distinction between actuality and potentiality or form and matter.

To establish PNC as a necessary truth, Aristotle needs to move to the consideration of something else. With this, a new persona enters the stage. The philosopher must now engage one who studies a special science, i.e., one who investigates a particular genus and *assumes* some philosophical principles, but only in so far as the particular genus needs them.[14] While the philosopher *states* PNC with respect to *all* beings the geometer *assumes* it with respect to magnitudes and the physicist *assumes* it with respect to natural things in motion.

II. *The Firmest Principle*

In this section, I will analyze the difficulties that confront us when we attempt to establish the truth of PNC and its status as "firmest principle." In book Kappa of the *Metaphysics*, Aristotle declares that PNC is "a principle in beings about which we cannot be mistaken, quite the contrary, it is always necessary to confirm it, and I mean by this to declare it true" (*Meta*. K, 1061b34-35). Thus, it is the fact that the principle is at the root of all that is that compels the philosopher to assert its necessary truth and leads those who investigate the special sciences to *assume* it as they make use of it. Can PNC be more than a scientific assumption? In the first chapter of book Beta, Aristotle distinguishes briefly between the principles of *substance* and the principles of *demonstration*. The question is:

Whether it is only the primary principles of substance that science has to look at, or whether it is also concerned with the principles on which everyone depends when proving things – for instance whether it is possible at the same time to assert and deny one and the same thing and other such principles (*Meta*. B, 995b6).

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[14] As Hudry observes, "the philosophers assert the necessary truth of the PNC by defining the primary substances (the universal genera) of all things. On the other hand, the physicists, the geometers, and the arithmeticians cannot assess its necessity, since they disregard the universal genera of all things." Jean-Louis Hudry, "Aristotle on Non-Contradiction: Philosophers vs. Non-Philosophers," *Journal of Ancient Philosophy*, Vol. 7/2, 2013, 60 (Of course, Hudry's use of 'genus' is unwise; being is not a genus).

The answer to this question is, of course, affirmative; however, the support for it is problematic: since the principles of demonstration (axioms) hold for everything that is simply insofar as it is, the study of these axioms falls within the purview of ontology because its domain of inquiry is not limited to a particular genus but extends to all beings. With the introduction of a new persona (a geometer) Aristotle moves from the ontological to the logical/doxastic plane through the assumption that the distinction between subject and predicate in assertions corresponds to the distinction between substance and attribute in beings. However, that an ontological principle also happens to be an epistemic one is not obvious, and one could wonder whether Aristotle is not committing a *petitio principii* in assuming with Parmenides that "being and thinking are the same". Perhaps one could respond that rejecting this assumption would lead to utter skepticism since how things *ultimately* are and how we think about them would constitute two separate orders. Alternatively, one could observe that whatever is thought is thought of in terms of being. But neither of these responses would be sufficient. The first one does not refute skepticism and one could respond to the second by observing that even if whatever we think of, we think of in terms of being, this does not establish that what is thought is identical to what is.

A first principle, by definition, cannot be demonstrated and it is so for two reasons: first, any demonstration must assume it, which leads to the objection that such a demonstration would beg the question. Second, if we were able to demonstrate PNC, we would have to appeal to a *higher* principle from which it could be derived as is required by the rule of demonstration stated in chapter 2 of the *Posterior Analytics*: "scientific demonstration must be grounded in [principles] that are true, primary, immediate, better known than, and prior to the conclusion" (*Post. Anal.* 71b20-21). The premises of an analytic syllogism are axioms; they must be primary and simply rest on themselves. If we could demonstrate PNC, it wouldn't be a first principle. This leads Aristotle to formulating a *negative* definition: "I call principles in each kind those items of which it is not possible to prove that they are" (*Post. Anal.* 76a30). Any kind of demonstrative knowledge *presupposes* indemonstrable principles at its foundation. If it were not so, we would have to grant the infinite regress argument. This situation conjures up the specter of arbitrariness. Couldn't PNC be a mere convention, i.e. not a principle at all but rather a *rule* akin to the fact that in chess, for instance, the bishops can only move diagonally? Should it be so, the whole edifice

of rational thought would be invalidated and the difference between knowledge and opinion would be erased.

One could respond to this by observing that demonstrations are not, after all, the only form of knowledge:

Some people demand that we demonstrate even this, but this is due to a lack of education; for it is lack of education not to know for what things we should seek a demonstration and for what things we should not (*Meta.* Γ, 1006a5-7).

Besides demonstration, Aristotle identifies two other sources of knowledge: induction and intuition. Could these be possible paths? The answer is again negative. Induction must be ruled out for two reasons: first, it leads to generalizations, not to first principles. In other words, in induction the premises only provide some degree of support for the conclusion; yet, the conclusion we seek should lead us to the firmest principle of all, one about which "we cannot be mistaken". Second, induction is itself a form of reasoning and, as such, it still rests on some principle.[15]

An appeal to intuitive understanding seems more plausible since it is mentioned by Aristotle himself.

Besides intuition, no kind [of knowledge] is more exact than science. And the principles are more knowable than demonstration and scientific knowledge involves reasoning. Hence, there will be no science of the principles; and since nothing apart from intuition can be truer than science, there will be intuition of the principles (*Post. Anal.* 100b7-12).

Scientific knowledge (i.e., deductive knowledge) must itself be based on another knowledge. As Kal puts it: "[t]he intuitive mind is the principle of science because it knows the principles which form the starting point of science".[16] Intuition is a form of comprehending akin to perception, but it applies to essences, principles, and first causes rather than sensible particulars. Now, since (a) truth and falsity occur in discursive reasoning

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[15] On this, see Marc Leclerc "La confirmation performative des premiers principes" in *Revue Philosophique de Louvain*, Vol. 96, 1 (1998) 69-70. For this reason, I do not accept Łukasiewicz's argument according to which PNC is only *induced* through experience, so it has yet to be demonstrated empirically. Łukasiewicz, 492.

[16] Victor Kal, *On Intuition and Discursive Reasoning in Aristotle* (Leiden: Brill, 1988), 46.

where the mind divides and composes while intuition is a direct contact with the simple and since (b) the idea that a first principle could be false would invalidate everything else, it follows that the truth of an intuited first principle has nothing to do with the truth *value* of a proposition and must be the simple disclosing of what is *as it is*. Although Aristotle is praised for stating the so-called 'correspondence theory of truth', this applies only to composite things and composite statements.

But with regard to incomposite things, what is being or not-being, what is truth and falsehood? Such things are not composite, so as to be when combined and not to be when divided, like "the wood is white", or "the diagonal is incommensurable"; *nor will truth and falsehood hold in the same way* to these cases [incomposite things] as to the previous ones [composite things]. In point of fact, just as truth is not the same in these cases, so neither is being. Truth and falsehood are as follows: *touch* [*thigein*] and *assertion* [*phanai*] are truth (for assertion is not the same as affirmation [*kataphasis*]), and ignorance is not touching. (*Meta*. Θ, 1051b17-26).

Aristotle does not clarify what he means by "touch", but the context suggests that *nous* and the simple incomposite [*ta asuntheta*] meet or even fuse. Wherever there is touching, there is no intermediary. Just as the incomposite cannot be further analyzed, the truth of the incomposite has nothing to do with the truth value of a statement which is a combination of terms. This is why it is simply asserted. Talking about practical intuition in the *Nicomachean Ethics*, Aristotle writes: "Intuition apprehends the ultimates in both aspects, since ultimates as well as primary definitions are grasped by intuition and not reached by reasoning" (*EN* Z, 1143a36-37).

Yet, in *Metaphysics* Gamma the appeal to intuition does not seem to be sufficient. The polemical nature of book Gamma, and in particular the fact that in chapter 4 Aristotle engages a sophistical opponent, raises further difficulties: how can we be sure that this intuitive touching reaches a first principle, let alone the *firmest* of all? How can we show that this intuition is legitimate, universal, and necessary? Of the three personae in book Gamma the philosopher *alone* has a noetic intuition. Couldn't then the other two (the geometer and the sophist) simply retort that, as for them, they have no such intuition?

When PNC is *applied* in the investigations of the special sciences it is not intuited but simply used and trusted. This is why in book Beta, Aristotle talks of PNC as a "common

opinion": "by principles of demonstration I mean the common opinions (*koinas doxas*) from which everyone makes a proof" (*Meta*. B, 996b27). A mathematician simply relies on PNC. Thus, the task of establishing that PNC is the *firmest* principle with respect to knowledge is not intended to *prove* the principle itself (we cannot prove what is beyond provability) but to show that those who do investigate the special sciences are justified in *relying* on it.

This changes the terms of the debate for four reasons. First, Aristotle needs to find a new path that is neither intuition, nor deduction nor induction. This will be dialectical refutation (*elenchus*). Second, Aristotle is bound to acknowledge that either some people do *not* have immediate access to first principles although they use them or that they are not aware of them. Third, the issue is not how we can *know* the first principle but how we can *explain* it (to others). This does not amount to abandoning the highest criterion of intuitive knowledge but suggests that some *may* reach such an intuition through the intermediary of pedagogical dialectic. Finally, the debate moves from ontology to epistemology and, eventually, to semantics.

The third and the fourth points raise a further difficulty: if the dialectical refutation is supposed to *lead* to the intuition of PNC, then "intuition" cannot be *immediate* certainty anymore since it may be obtained through a mediation and occurs as a recognition that does not depend on any premise that could be expressed in a proposition.[17] It is one thing to be a philosopher who has attained an intellectual grasp of an unhypothetical principle and another to explain it to one who simply assumes it in her scientific investigations, and it is still another one to confront a sophistical debater. To the distinction between these three characters corresponds the distinction between first philosophy, special sciences, and semantics.

The argument in Gamma 3 addresses those who merely *use* PNC without comprehending it, that is, without realizing that it is a universal ontological principle:

Everyone also *uses* them [axioms] because they are about being *qua* being (*tou ontos estin he on*) and each genus is a being. However, they use them just so far as they need them, i.e., as far as the genus from which they demonstrate extends. Hence, since it is clear that the axioms belong to each genera qua beings (for this is what is common to them), the study about them pertains to the one who cognizes (*gnōriszontos*) being qua being (*Meta*. Γ, 1005a24-28)

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[17] On this see De Praetere: "the process of refutation *constitutes* the first truths." Thomas De Praetere "La justification du principe de non-contradiction" *Revue Philosophique de Louvain* 1998, Vol. 96.1, 56.

The contrast is between those who *grasp* the first principles (the philosophers) and those who *use* them (the practitioners of some branch of second philosophy). The task in book Gamma is for the philosopher to address the non-philosophers.

As Wedin has shown, the superlative "firmest" indicates that Aristotle does not consider PNC to be simply one of the most certain principles but the ultimate one (the principle of all principles).[18] This depends on meeting four criteria:

The firmest principle of all, however, is [1] one that it is *impossible to be deceived* about. For [2] a principle of that kind is necessarily both the best known (*gnōrimōtaten*) – since it is on what they do not know that people make mistakes – and [3] it is unhypothetical for a principle that must be possessed by whoever apprehends *any* beings is no hypothesis and [4] what someone must know, if he is to know anything at all, he must already possess. It is clear then that such a principle is the firmest of all. (*Meta.* Γ, 1005b11-18)

If it is so, one might wonder why Aristotle bother arguing since the principle is said (1) to be impossible to be deceived about, (2) best known, and (3) is something one must already know. If we all know it and cannot be deceived, then why do people contradict themselves and how can some (the sophists) dare challenge it? The response to this concern must consider the distinction between what is most known *by nature* and what is most known *with respect to us*:

Things are prior (*protera*) and most known in two ways, for what is prior by nature and what is prior for us are not the same, nor what is most known [by nature] and what is most known for us. I call prior and most known for us what is closest to perception, prior and most known simpliciter what is farthest. What is most universal is the farthest and the particulars are closest. (*Post. Anal.* 71b33-72a5)

This distinction is essential for it helps resolve a problem that is akin to *Meno*'s paradox: "if we have them [knowledge of the first principles], it is absurd, for it results that we have pieces of knowledge more precise than demonstrations and yet this escapes our knowledge" (*Post. Anal.* B, 99b27-29). Meno's slave knows something about geometry that he did not know he knew. Yet, contrary to Plato's suggestion, there is no need to assume a process of recollection and cycles of reincarnation to account for this. What is firmer than

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[18] Wedin distinguishes seven steps in Aristotle's argument. I simplify the analysis. The parenthetical clause "since it is on what they do not know that people make mistakes" is here to support the second condition just as "a principle that must be possessed by whoever apprehends any beings is no hypothesis" supports the third one.

demonstration is so because it belongs to what is most known *by nature*; what escapes our knowledge is what is initially *further away from us*. Even though we *use* it, we do not recognize it. Gamma 3 inquires into what is most known *by nature*. With respect to us, sensation is proximate; in the ontological order, first principles are most intelligible since they are the source of all that is.

However, the distinction between prior by nature/prior for us seems to conflict with the fourth criterion which stipulates that if one is to "knows *anything at all*, he must already possess it" since this is not reserved to the accomplished philosopher who understands the unhypothetical.[19] The solution is to suggest that only the accomplished philosopher has an intuitive grasp of the first principle while other people merely use it. "He must already possess it" indicates that PNC is not only prior *by nature* and also a priori for us.

The firmness of PNC depends on the impossibility of error. This appeals to an epistemic/doxastic criterion: it is impossible to believe simultaneously a proposition and its negation. If I truly believe ~p then I cannot at the same time believe p since to believe ~p is to *disbelieve* p. Yet, as Wedin has argued, this applies to particular *instances* only and not to the *principle* itself.[20] In other words, the opponent could claim that *some* cases where p and ~p can be believed simultaneously may still exist.[21] In other words, the universality of PNC has not been established. Let us consider some possible scenarios that have been offered as challenges:

(a) Wedin: "Taking an analogue from standard belief cases, it is plausible that every proposition I believe I believe to be true, and also that I do not believe that all of my beliefs are true".[22] However, one could respond to Wedin that the second instance (I do not believe that all of my beliefs are true) is both one of my beliefs and a belief *about* the set of all my beliefs. It is true that when I believe something, I assume that what I believe is true, but this

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[19] Aristotle's use of the term "*anhupotheton*" is, of course, reminiscent of the divided line in Plato's *Rep*. VI: "by the other sub-section of the intelligible I mean what reason itself grasps by the power of dialectical discussion, treating its hypotheses not as principles, but as genuine hypotheses (that is as stepping-stones and links in a chain), in order to arrive at *what is unhypothetical and the principle of all things*" (*Rep*. VI, 511b-2-6).

[20] Wedin, 248-250.

[21] This is the case with dialetheism for instance.

[22] Wedin, 250.

assumption admits of degrees. I can state a belief and add "but I am not sure" without contradicting myself. The fact that some of my beliefs are likely to be false does not rule out PNC.

(b) Kirby: "A father 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".[23] This counter example is meant to establish that "conditions are sufficient for believing he will drink, and conditions are sufficient for believing he will not drink." But does this scenario show that it is possible to hold contradictory beliefs? I think not for two reasons: First, the argument is about future contingents (*will* the father drink or not tonight?) and we saw earlier that Aristotle proposed a *modal* treatment of similar dilemmas; in other words, the dilemma is that he *may* drink tonight but this entails that he may as well not drink. Second, as a propositional attitude, the truth of a belief, does not transfer to the proposition (from the fact that I truly believe p, it doesn't follow that p is true).

Yet, although I believe that an Aristotelian has enough resources to respond to these challenges, she still has not fully overcome the difficulty. For one thing, the universality of the principle has not been established and it may well be impossible to do so. Further, the argument in favor of the *firmness* of PNC does not establish the impossibility of error and since it is not deductive, it does not establish its primacy either but only its epistemic reliability. We still need to go further, and this requires that we confront a third philosophical persona.

III. *Semantics*

In this section I consider the only (indirect) argument in support of PNC that occurs at the semantic level and will argue that it performs a substitution from an initial requirement of saying something meaningful to one of defining the term that has been stated. Yet, the assumption that in order to be meaningful a term must be definable is questionable. The

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[23] Jeremy Kirby, 46 (my emphasis).

appeal to language and linguistic meaning occurs through the introduction of a third interlocutor:

> But the same method of discussion *must not be used with all opponents*; for some need persuasion, and other 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 arguments but their thoughts that one has to meet. But those who argues for the sake of arguments can be convinced only by emending the argument as expressed in their *own speech and words*. (*Meta*. Γ, 1009a16-22)

The first group of people (the natural philosophers and in particular the Heracliteans) came to embrace the view that reality is indeterminate because they were troubled by the metaphysical puzzles raised by the existence of change; these people are curable and can be persuaded. The next group Aristotle addresses now is composed of eristic and sophistic disputers; they are not led to questioning PNC because of theoretical difficulties but argue for the sake of arguing. These people must be compelled.

Why does Aristotle move to the consideration of linguistic practices? Does this mean that he abandons the search for an ontological *archē* which was the original purpose of the investigation? Since the *elenchus* takes its starting point not in universal principles but simply in whatever the interlocutor will grant, Aristotle classifies it as a dialectical syllogism. Yet, a difficulty arises for a rule that applies to *all* syllogisms (demonstrative and dialectical alike) is that the conclusion cannot be more certain than the premises; but in a dialectical syllogism the premises are only *probable*. How then would such a weak starting point establish a necessary truth? The solution is once again modal: the *elenchus* leads us from the probable to the necessary by demonstrating the impossible (if x is impossible then ~x is necessary); in so doing, PNC is now presented as the highest criterion of *signification*. Without PNC communication would not be possible. Thus, PNC is not only an ontological first principle and the ultimate principle of reasoning, but also the ground of linguistic meaning. The *elenchus* (demonstration by refutation) appeals to semantics rather than to logic.

> The starting-point [*archē*] for all such arguments is to ask the disputant not to state that something is or is not (for one could take this as the very starting-point), but rather to *signify something both to himself and to another person*, since that is necessary if indeed he is to say something for if he does not grant this no argument is possible for such a person, either with himself or with another. But if he does grant it, demonstration will be possible, since there will be already something definite. (*Meta*. Γ, 1006a18-24).

In *De interpretatione* 5, Aristotle argues that the analytics are only concerned with a *sub-class* of language use: assertions (*apophantikoi logoi*). These are, in principle, either true or false and they alone are the subject matter of logic. The behavior of assertions when combined in a reasoning (syllogism) is governed by non-contradiction. However, when we use language, we are not always asserting that such or such is the case. Language itself simply needs to be "*semantikos*" (meaningful, significant) even if it is fictional, rhetorical, performative or poetic. As Aristotle puts it, even "'goat-stag' signifies something (*ti*) but not, as yet, anything true or false – unless 'is' or 'is not' is added" (*De Int*. 16a16). Thus, an expression can be *semantikos* without making any ontological commitment (there is no need to state that something is or is not).

In order to defend the validity of PNC from the sophist's objection, Aristotle reverts back to a condition that is *prior* to logic and demonstrations. One could be tempted to hypothesize from this that the *elenchus* commits Aristotle to the view that, ultimately, language governs both ontology and logic, since it is only on this semantic plane that Aristotle provides an argument meant to dismiss any attempt to deny PNC (or, more precisely, any attempt to *articulate* such a denial). Does this place the order of signs as prior to the order of being and (rational) thought? I do not believe that this is the case for, as we will see, in Aristotle's view, meaningfulness rests on an ontological condition. Yet, this assumption is problematic.

As we saw earlier, neither deduction nor induction can establish PNC; as for an appeal to intuition (Aristotle's favored path), it remains open to many problems. The best we can do then is to show why one cannot reject PNC: if the disputant tried, she could not articulate anything meaningful, and if she states something meaningful, she abides by PNC. Anyone who denies PNC accepts it even if, *in words*, she disavows doing so. Thus, Aristotle must move beyond the logic of beliefs and appeal to the distinction between what can be *said* and what can be thought. Language alone is no guarantee of beliefs: we can *speak* without *believing* a word we say (we can lie for instance) and this possibility justifies distinguishing between what is said and what is believed.

The principle of identity is usually understood as preventing the fallacy of equivocation: we cannot use the same term in the same discourse while having it signify different things. The first step moves from the consideration of *propositions* that express

beliefs and make an ontological assumption to the consideration of a *single* word that simply needs to be *semantikos*. The *elenchus* asks the disputant to accept one condition without which no dialogue is possible: she must say something that is meaningful for herself and for her interlocutor and, of course, the disputant cannot reject this request or else she has no objection. As Aristotle puts it, the disputant would be akin to a "vegetable" (*Meta*. Γ, 1006a15) – i.e., a voiceless living being.[24] Thus the elenchic challenge entails that the disputant cannot say any string of sounds that is meaningless even for herself; however, she could say "Jabberwock" and communication would be possible (assuming both interlocutors have heard of Lewis Carroll). It is therefore not intuitive understanding (the gold standard of truth reserved for the accomplished philosopher) but the possibility of communication and its requirement of reciprocity that will be applied.

When Aristotle challenges his sophistic disputant ("if only the disputant says something" *Meta*. Γ, 1006a12), the attention focuses on the *act* of meaning (i.e., meaning as the intentional act of signifying something to someone): in other words, "meaning" in a verbal rather than a nominal sense. The *elenchus* is performative; it depends not on *what* the interlocutor says but rather on the fact that she says something.[25] To signify, in a conversational setting, presupposes a desire to be understood. Aristotle is not engaged in a terminist logic but in a phenomenology of the act of signifying within a dialogical context. To signify is to signify *something* (*semanein ti*). "First then, this at least is clearly true the name signifies is or is not *this*, so that not everything will be so-and-so and not so-and-so" (*Meta*. Γ, 1005b28-30). The clause "is or is not this" does not have an existential import since the disputant could chose a word that refers to a non-existing being (e.g., "Pegasus is or is not a winged horse"). What matters is that what is meant is semantically determinate. The core of the argument depends on the little word "*ti*". In Kappa 5, Aristotle claims that "each of the names must be known and must make something clear, and not many things *but only*

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[24] This is reminiscent of Aristotle's remark about Cratylus who "did not think it right to say anything" (*Meta*. G, 1010a13).

[25] I agree with Thomas de Praetere who defines the *elenchus* as a "performative refutation" (59). I think this point renders Aristotle immune to the challenge raised by Derrida's concept of writing (or rather arche-writing) as infinite referral. This applies to a logic of *signs* but is not concerned with the performative act of *signifying* (See *Of Grammatology*, tr. Gayatri Shakravorty Spivak, Baltimore: Johns Hopkins University Press 1998, 43).

one" (*Meta*. K, 1062a14-15). This requirement does not deny that meanings (in a nominal sense) are conventionally prescribed, nor does it commit Aristotle to the assumption that words must be univocal, nor again does it deny that many common words carry multiple connotations. Misunderstandings commonly occur in cases of polysemy when one interlocutor understands the same term in a different manner, but such a failure of communication proves Aristotle's point rather than undermines it. As soon as I respond "no, that is not what I mean…" I have confirmed Aristotle's claim. Let's now consider Aristotle's example:

Further, if 'human' signifies something, let this be 'two-footed animal,' I mean by signifying one thing that if human is this, then insofar as anything is human, this will be the being for human (*Meta*. Γ, 1006a31-32).

We must note that whether this account is true or sufficient is irrelevant (some human beings are amputees and birds are two-footed). It simply requires an agreement on what could amount to a conventional or even a flawed definition (I read the clause "*if* human is this" as denoting a hypothetical). Second, the example starts from what is signified and ends with what *is* ("this will be the *being* for human"). The act of signifying entails a delimitation and for this reason it is simultaneously an act of exclusion: to be is to be this (*ti*) and therefore *not* that (i.e., anything that is not a two-footed animal). It is, therefore, inseparable from the principle of identity in the sense of determinateness: to *be* is to be such-and-such and therefore neither something else nor otherwise. With this, the semantic argument sends us back to ontology via definition and self-identity.[26] Paula Gottlieb has suggested that we could read the *elenchus* as a transcendental argument. "If certain aspects of experience or thinking are possible, the world must be a certain way. <…>That the world *is* a certain way explains these aspects of our experience or thinking and not the other way round." On this interpretation, Aristotle would be arguing that the world conforms to PNC, or that PNC is true, because it is presupposed by and explains the opponent's ability to say something significant".[27]

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[26] Ontological identity in the sense of determinateness does not rule out becoming. An entity can be what it is not only in the sense that at *each instant* it is so and so (and therefore not otherwise) since gaining and losing accidental properties does not affect its "being-what-it-was (*to ti ēn einai*)."

[27] Gottlieb, Paula, "Aristotle on Non-contradiction", The Stanford Encyclopedia of Philosophy (Spring 2019 Edition), Edward N. Zalta (ed.), URL = https://plato.stanford.edu/archives/spr2019/

Aristotle moves from the linguistic to the ontological plane via the consideration of *definitions*. Definitions, in the Aristotelian sense, presuppose essences that determine the nature of substances. Those who refuse to signify one thing "do away with substance and essence. For they are compelled to assert that all attributes are accidents and that there is no such thing as being essentially a human being or an animal" (*Meta*. Γ 1007a20-23). But this move seems to be illegitimate for one may *signify* (which is what the *elenchus* initially asked) without *defining*.[28] To take a previous example, I can *mean* something by the term "Jabberwock" (it is something we should be afraid of for "it has jaws that bite and claws that catch") even though I am utterly unable to *define* it (i.e., name its essence). It is true that, in Aristotle's example, the agreement of the interlocutors on the meaning of "human" does not entail that they have thereby disclosed the true *essence* of humanity, but it still remains that the example assumes an essence and this is more than what Aristotle asked initially from his interlocutor. In other words, there is a slippage in the argument from (a) "say something (*ti*) meaningful" to (b) "say something meaningful about this (*ti*)" via the assumption (c) that to state (b) is to state the *essence* of the entity. We have moved from "even 'goat-stag' means something" to "this is what it is to be a goat-stag".

Priest acknowledges that Aristotle's defense of PNC is linked to his ontological essentialism and proposes to challenge the distinction between accidental (thus contingent) properties and essential (thus necessary) ones by appealing to alternative worlds: "In *our* world, being a man is an essential property, but in a *fairytale world*, where Aristotle turns into a frog (and is still Aristotle), it is not".[29] The hypothesis of metamorphoses raises an interesting challenge since it would disconnect Aristotle from his humanity, yet retain his identity; but one may respond to Priest that the distinction between two worlds entails that

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entries/aristotle-noncontradiction/. Even if we endorse this interpretation, the transcendental argument is not immune to criticism. The fact that we must think of the world in a certain way, given certain features of experience/meaningful communication, is not tantamount to showing that the world obeys that assumption.

[28] On this see R. M. Darcy, *Sense and Contradiction in Aristotle* (Dordrecht: Reidel, 1975) 28-58, and De Praetere, 63.

[29] Graham Priest, "To be *and* not to be – That is the answer. On Aristotle on the Law of Non-Contradiction," *Philosophiegeschichte und logische Analyse*, Vol. 1, 1998, 103 (my emphasis).

we are not considering an entity in the same "respects". Thus, the challenge does not meet the condition of applications of PNC.

These concerns can possibly be dealt with by suggesting that, although Aristotle's example of "human" assumes an essence that, in principle, can be defined, the argument extends to *other* linguistic expressions as well where the only requirement is meaningfulness. In other words, the *example* (human = bipedal) does not exhaust the *requirement*. Thus, we need neither a definitionally perfect extension of a term nor a grasp of an essence; we must simply show that the *application* of a term (any term) excludes what it is not. That is, we can agree (for the sake of linguistic exchange) that by 'x' you and I mean 'y'. Even if this agreement is purely conventional, the exclusion of '~y' would still follow.

However, for the *elenchus* to lead to an intuition of PNC, the interlocutor will have to recognize that she had already assumed the truth of PNC in her very attempt to signify something. Yet, there is no evidence that this will be the case, for acknowledging that PNC is *required* for a meaningful discussion is not tantamount to establishing its ontological priority. What operates as a semantic and dialogical condition still does not rule out the possibility that reality is fundamentally in flux and impermanent. A Wittgensteinian cluster, for instance, would be sufficient for communication and doesn't assume essentialist definitions. Of course, Aristotle is not committed to the idea that the strength of the semantic argument will convert his sophistical opponent and thus, we must restrict the argument's import. The argument is, after all, only a dialectical refutation, i.e., a way of responding to a challenge and, at best, it can only have persuasive force. The point of the *elenchus* is not to demonstrate PNC but to test it negatively. The opponent may not be led to an intuition of the principle (this would require that she becomes a philosopher) but simply to *accept* it. The *elenchus* is not a *reductio ad absurdum*; it is about reducing the opponent to silence (thus, making her objection irrelevant).

In conclusion, I would like to suggest that the situation in book Gamma reveals an ambiguity in the persona of "*the*" philosopher. In the *Metaphysics*, there is not one philosopher but two, or rather one who dreams of another one. At the beginning of the *Metaphysics*, the philosopher *investigates* and *seeks* a science of being *qua* being. Such a science is precisely what she *does not* have, the elusive object of an ever-renewed quest ruled by wonder. It is hierarchically superior to the secondary sciences which it is supposed to

ground; yet, these at least are already constituted bodies of knowledge while first philosophy remains to be found. Ontology is and will remain an object of puzzlement and wonder. "Indeed, the question which was raised of old and is raised *now and always*, and is *always the subject of doubt*, viz. what being is" (*Meta*. Z, 1028b1-3). In the second chapter of book Alpha, Aristotle introduces first philosophy as the "science we are *seeking* [*zētoumen*]" (*Meta*. A, 982a6). Simonides warned that the possession of such wisdom may not be humanly possible ("a god alone can have this privilege." *Meta*. A, 982b30). Aristotle's response is in two parts: first, "the divine cannot be jealous;" second, this science is divine knowledge in the subjective and objective sense: it is primary possessed *by* god and it is (human) knowledge *of* the divine. Yet, these two do not overlap, and an infinite distance remains between the philosopher who inquires and the fantasized philosopher who possesses a god-like intuition of the first principles. The first one proceeds from what is most known with respect to us and investigates from accepted opinions. Insofar as she puzzles and wonders, she "thinks herself ignorant" (*Meta*. A, 982b16). The second one has achieved god's knowledge. She possesses a noetic intuition of the first principles and proceeds from what is most known by nature.

And it is proper for him who best understands each class of subject to be able to state the most certain principles of that subject; so that he who *understands* the modes of being qua being should be able to *state* the most certain principles of all things. Now this person is *the* philosopher (*Meta*. Γ, 1005b6-14).

The first philosopher is only potentially the second one, and the second is what the first hopes she may become. The situation is akin to Book VI of the *Republic* where Socrates announces that a genuine philosopher must comprehend something that transcends the four cardinal virtues, something by which all is governed and illuminated; yet, Socrates can only *hypothesize* the unhypothetical and offer *images* of what is beyond all images. Thus, it may be that the ultimate philosopher is but a dream.

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