

## THE DEMONSTRATION BY REFUTATION OF THE PRINCIPLE OF NON-CONTRADICTION IN ARISTOTLE'S *METAPHYSICS*, BOOK IV

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### *Abstract*

This article is a critique of the demonstration by refutation of the principle of non-contradiction in Aristotle's *Metaphysics*, book IV. My method will consist in focusing on the dialectical nature of the proof, that means on the situation of dialogue presented by Aristotle as a constitutive element of the proof. Among the eight classical aristotelian proofs of the impossibility of contradiction developed in book IV, I have selected the three following: by the necessity of non-contradiction in action, by the necessity of a debate and finally by the necessity of a meaning of words, which is the demonstration by refutation as such. I try to figure out the presuppositions that lie behind those proofs, and simultaneously to show that none of them is absolutely compelling, even if Aristotle succeeds in convincing us of the utility of non-contradiction.

### *I. Introduction.*

In book IV of *Metaphysics*, Aristotle tries to demonstrate the Principle of Non-Contradiction (PNC). He is conscious, though, that a direct demonstration of it is impossible as he has begun by presenting the PNC as the first of all principles. So he tries different indirect proofs. One of these proofs is particularly complex and has interested many philosophers over the centuries: the proof by refutation (*elenchus*). It is an *ad hominem* proof of a special type which consists first in accepting that the only solution is a *petitio principii*, and second in showing that there exists a strategy of making anyone who denies<sup>1</sup> the PNC realise himself the *petitio* by the simple fact that he says something. It is, then, more a strategy aimed at «knocking down» the opponent than a proof as such; moreover, the validity of the proof seems to be limited because it is only a rhetorical (or dialectical) proof based on what is given by the interlocutor and not on axioms universally accepted.

<sup>1</sup> We will call him Antiphrasis.

I will be critical of Aristotle. The strategy of my critique will be to enter fully into the field of the proof, which is the dialogue itself (so that it can be called a performative proof) and to pay attention to the small details of this concrete situation Aristotle hadn't noticed. I think that to be able to confront Aristotle on this topic, one needs not only to propose other solutions, but also to contest the manner by which the problem is set.

The form of the refutation consists in relating the necessity of non-contradiction to the necessity of a meaning of words and then to show that the PNC is implicitly assumed by everybody in every utterance he makes, even of a sole word (not necessarily a sentence), by the simple fact that he wants to "say something which is significant both for himself and for another" (1006 a 22)<sup>2</sup> so that the only way of escaping from the PNC is to remain silent.

But the one who remains silent is "no better than a vegetable" (1006 a 15) continues Aristotle, and this last assesment sounds like a mild fit of pique, a certain irritation of the Stagirite at the possibility of escaping his refutation. Aristotle's reaction to simple silence seems to be a bit radical and disproportionate and it would be interesting, on another occasion, to analyse this. Because the fact that somebody remains silent in this context doesn't mean that he isn't able to speak, but only that he doesn't speak at a certain time and with a certain person. This certain person is not anybody, as a matter of fact it is precisely the one who wants to convince him that he is wrong. So there are many reasons (psychological, strategic...) for Antiphrasis to remain silent. Lewis Carroll paid more attention to this than Aristotle in his famous tale *Through the Looking-Glass*:

"-'O Tiger-lily!' said Alice, addressing herself to one that was waving gracefully about in the wind, 'I wish you could talk!'

-'We can talk,' said the Tiger-lily, 'when there's anybody worth talking to.' "<sup>3</sup>

One could argue, though, that the point is not to know whether Antiphrasis talks to Aristotle, but whether he usually makes a certain use of language. So we won't insist on dealing with silence.

The demonstration by refutation must not be confused with the general form of a *reductio* of the Sceptic, because in this latter case, the proof con-

<sup>2</sup> This is the short reference for Aristotle, *Metaphysica*, translated into english by W.D. ROSS, Oxford, 1960

<sup>3</sup> Lewis carroll, *Through the Looking-Glass*, in *The Annotated Alice*, Penguin, 1960, p. 200.

sists in showing the Sceptic's self-contradiction (either logical, practical or performative). As self-contradiction is precisely the point in question, the conclusion should be of another type and can be formulated this way: anyone who denies the PNC is not accused of contradicting himself, he is only considered as *unconscious* of his implicit assumption of the Principle. In other words, Antiphrasis only believes he does not accept it. The proof, then, is one which enters into deep psychology, or at least into the fuzzy field of *intentions*.

My ambition is to establish that the proof has many weaknesses even if Aristotle doesn't completely fail to convince us of the utility of the PNC. First, I will criticise the formulation of the Principle; second, I will briefly review different proofs, direct and indirect, before going back to the refutation as such.

## II. *The formulation.*

### II.1. *The "official" formulation of the PNC.*

As far as I know, all commentators agree that, of the numerous formulations of the PNC, one is the most important, even if it doesn't summarize all the ideas contained in Aristotle's Principle. And it is the following:

"The same (attribute) cannot at the same time belong and not belong to the same (object) and in the same (respect)" (1005 b 20)<sup>4</sup>

Aristotle claims about it not only that it is

- (1) *True*, but also that it is
- (2) *necessary*<sup>5</sup> in the sense that the contrary is not even possible (dunaton), and that it is
- (3) *the first of all principles*<sup>6</sup>, in the sense that it is presupposed by all the other principles, and finally
- (4) that it applies *universally*<sup>7</sup>, because it is a principle of being qua

<sup>4</sup> Transl. of Ross modified. We have put three words between parenthesis because the greek text only suggests them by the use of declension cases. All our other translations are those of Ross unmodified.

<sup>5</sup> "the most certain (bebaiotate) principle of all", IV, 1005 b 12.

<sup>6</sup> "(...) for this is naturally the starting-point even for all the other axioms", IV, 1005 b 33.

being.

As Łukasiewicz clearly observes<sup>8</sup>, the different formulations of the principle along *Metaphysics* IV suggest also that it applies to the three fields of :

- (A) *Reality*. "The same cannot at one and the same time be and not be" (1062 a 35). And Aristotle doesn't even add the word "thing" or "substance" to the expression: "the same", in order not to determine in any way the nature of the objects concerned by the principle.
- (B) *Language*. "Contradictory statements are not at the same time true" (1011 b 13). Contradictory statements are, of course, materially possible (one can utter a contradiction), but they have no truth.
- (C) *Thought*. "It is impossible for any one to believe (hupolambanein) the same thing to be and not to be" (1005 b 24). And Aristotle adds that when somebody contradicts himself, as for instance Heraclitus, he doesn't really believe (or uphold) what he says.

So, there is not *one* thing to be accepted, refused or criticised in the Principle, there are four things to say about it in the frame of three different interpretations, which make twelve issues. One of the ways to confront Aristotle consists in showing that his proof only deals with the truth of the PNC and says almost nothing about its necessity, primitivity and universality. But again, this would be the topic of another paper and we will now concentrate on the proof of the truth of the PNC in reality, language and thought without giving much more consideration to (2), (3) and (4).

## II.2. *Critique of the formulation.*

II.2.1. Let us come back now to what we have called the "official" formulation. The principle assumes a certain concept of identity when it says: "the same (object)" ("auto"). This notion of identity makes it easy to apply the principle to many different objects, simply because we can partition a lot of objects that are contradictory. For instance, if something physical is both

<sup>7</sup> "these truths (i.e. axioms) hold good for everything that is (hapasi tois ousin), and not for some special genus apart from others." IV, 1005 a 24.

<sup>8</sup> Łukasiewicz J., "On The Principle Of Contradiction In Aristotle", *Review of Metaphysics*, 24, March 1971, pp. 487-499.

green and not green, we can consider that it is composed of two things, which are not "the same (object)", one green, and one not green, without even needing any help from the end of the formula: "in the same respect".

Certain types of reality resist however to such a partition. For instance movement, which can be considered, for this reason, as a true contradiction. Because if you cut a movement in two, you certainly eliminate its contradiction, but you lose also its nature which is to be something else than the succession of immobilities. Contradiction is directly related here to the essence of the object itself, which is its continuity, a sort of infinitesimal that gave Aristotle, always refusing to accept the notion of an infinite in actuality (whether infinitely great or infinitesimal), many difficulties. So that Hegel is right to say :

"Something moves not because at a certain moment it is here, and at another there, but because at the same time it is here and not here."<sup>9</sup>

And the same can be said about movements of thought, like, for instance, hesitation, or even more complex realities like certain very elaborate desires in which we want at the same time to do something very exciting and to be prevented doing it. It is a basic rule of eroticism that we don't want to be allowed to do something we want in the same time to be allowed to do. Freud used to call this "ambivalence"<sup>10</sup>. But philosophers usually refuse to consider those two last examples (hesitation and desire) as true contradictions because, according to them, hesitations and desires are not real objects but the expression of a pure subjectivity<sup>11</sup>. In other words, the contradictions appearing here do not describe any object and are more confusions (ignorance of negation) than contradictions (simultaneity of affirmation and negation<sup>12</sup>), because they are situated at a subpropositional

<sup>9</sup> G.W.F. Hegel, *Science of Logic*, tr. Miller, New York, 1969, p. 440. See also Butler C., "Motion and Objective Contradiction", *American Philosophical Quarterly*, vol. 18, N°2, April 1981 ; Priest G., "Inconsistencies In Motion", *American Philosophical Quarterly*, 22, pp. 339-346, Oct. 1985.

<sup>10</sup> Freud S., *Bemerkungen über einen Fall von Zwangsneurose*, 1909, *Gesammelte Werke*, VII, p. 413; Standard Edition (engl. tr.), X, p. 191.

<sup>11</sup> Mace C.A., "Metaphysics and Emotive Language", *Analysis*, vol.II, N° 1-2 and Mace C.A., "Representation and Expression", *Analysis*, vol. I, N°33.

level where negation is simply not requested. We would like, though, to argue against this, first, that literature is full of examples showing that such contradictions can be formulated at a propositional level<sup>13</sup> and, second, that the very reason why they cannot be considered as real objects is precisely that they can be contradictory, so that what excludes them from serious consideration as true contradictions is a vicious circle. As Ricoeur observes, there is cause to add, between expression and description, a third term: reflection<sup>14</sup>, which defines the activity by which somebody observes in himself facts that will interest other people. And we are forced either to admit that literary descriptions of inner contradictions are reflexive, or to give up with literature as a social art.

II.2.2. The second concept presupposed by the definition is the concept of negation. Peirce<sup>15</sup> used to consider that the PNC was nothing more than a definition of the force of negation. If, as Aristotle claims, it is true not only empirically, but also by principle that not-A means the absence of A, then "negation means just the absence of the thing in question" (1004 a 10). In other words, the impossibility, for A and not-A, to be present together gives all its meaning to the expression: 'not-A'.

But this embodies a certain physical metaphor, as presence and absence belong straightforwardly to material objects like "A cat on the mat", but less directly to more abstract things like reason, elegance or politeness. Consider the description of Madame de Villeparisis' behaviour by Marcel Proust:

"(...) dans ces moments-là elle n'était pas naturelle, elle se souvenait de son éducation, des façons aristocratiques avec lesquelles une grande dame doit montrer à des bourgeois qu'elle est heureuse de se trouver

<sup>12</sup> We have to be very precise here: "I want it to be the case that A, and I want it to be the case that not-A" is not a contradiction. Hesitation must then be formulated like this: "Some behaviour is staying here and is not staying here, and this is exactly what I want to do". The point of the debate is to know whether the unexistence of such a behaviour in reality makes it impossible to exist as the real object of my desire.

<sup>13</sup> "O heavy lightness! Serious vanity, / Feather of lead, bright smoke, cold fire, / Sick health! / Still-waking sleep that is not what it is..." Shakespeare, *Romeo & Juliet*, Act I, sc. I.

<sup>14</sup> "Let us go back to the first alternative considered above: a statement, we said, that doesn't give information about facts expresses only the emotions or the attitudes of a subject; though reflection falls out of this alternative." Ricoeur P., *De l'interprétation*, Paris, Le Seuil, 1965, p. 60 (our translation).

<sup>15</sup> Peirce C.S., "Laws of Thought", in *Collected Papers*, II, pp.356-362.

avec eux, qu'elle est sans morgue. Et le seul manque de véritable politesse qu'il y eut en elle était dans l'excès de ses politesses."<sup>16</sup>

Here, the absence of politeness is still the negation of the presence of politeness, but the opposition is more complex than before because the absence is, in this very case, simultaneously an excess of presence. It is not self-evident, then, that negation is a unified concept which would lead to a principle true in every context<sup>17</sup>. And Wittgenstein is right to say that we can "imagine a language having two different words, X and Y for negation."<sup>18</sup>

II.2.3. The third concept presupposed by the official formulation is *time* and the notion of simultaneity<sup>19</sup>. Nietzsche<sup>20</sup> has proposed a very interesting critique of the PNC which concerns this aspect of the definition. He says the principle is perfectly true, but it corresponds to a domain so small that it can be neglected. Of course it is true that the same attribute cannot belong and not belong to the same object simultaneously, but there are so few phenomena that happen strictly simultaneously that the principle is seldom of application. The argument of Nietzsche is, ultimately, pragmatic: the PNC may well apply to eternal substances, but we never deal with such substances. In other words, Heraclitus was right to say that everything flows, so that consideration of the laws of stable objects is valid, but not relevant.

II.2.4. The end of the sentence: "in the same respect" seems to be designed to prevent contradictions occurring when the same word is used in two dif-

<sup>16</sup> "(...) in such moments, she was not natural, she remembered her education, the aristocratic manners with which a highborn must show to middle-class people that she is happy to find herself in their company, that she has no haughtiness. And the only lack of true politeness that she had was in the excess of her politenesses." Proust M., *A la recherche du temps perdu*, Paris, Gallimard "La Pléiade", tome II, p. 83 (our translation).

<sup>17</sup> To say nothing about the difference between propositional and predicative negation.

<sup>18</sup> Wittgenstein L., *Philosophische Untersuchungen*, 556, (our translation).

<sup>19</sup> The greek word translated by "at the same time" is "*hama*" which contains only the notion of being taken together.

<sup>20</sup> Nietzsche F., *Werke. Kritische Gesamtausgabe*, de Gruyter, Berlin, 1972, Achte Abteilung, Dritter Band, 15 [14]. This is already Plato's point of view in a quite confused passage of the *Parmenides* (129 b, c).

ferent meanings as in the discourse of many Sophists<sup>21</sup>, but also in those famous verses of Racine:

“Je fuis des yeux distraits  
Qui, me voyant toujours, ne me voyaient jamais.”<sup>22</sup>

The problem here is directly related to the difficulties of interpretation. And it is particularly true when the author is dead, as is Racine, because he cannot explain anymore what he wanted to say. At first sight, it is quite evident that there is no contradiction in the text as its contradiction only appears at a “surface” (or rhetorical) level, when at the deep level the sense is clear. We just need to replace one of the two occurrences of the verb «to see» by a synonym, for instance “to look”, to escape from contradiction. But the question is why do we try to escape from contradiction? Why do we consider that the contradiction has to be understood as purely apparent or superficial? Or, to say it in Aristotle's vocabulary, why do we need to think that the author didn't support (hupolambanein) it?<sup>23</sup> And the answer is necessarily that we presuppose the principle.

Two things remain problematic. First, we do not (and cannot) know the true and deep intentions of the dead author, so that it will always be daring to reformulate his thoughts into what we think he really wanted to say. Because if what we say in our paraphrase appeared to be what he really wanted to say, then, if he is a good author, he would have said it. And second, our paraphrase considers stylistic effects as purely external to the meaning. This is contradicted by the essence of art which implies a certain unity of form and content. If Racine wrote the thing this way, it is not only to waken our attention, but because he was convinced that this meaning had to be formulated this way.

Of course, I am not trying to argue that one must agree to interpret Racine's two verses as a true contradiction. Many reasons that I don't have to detail here plead against this. The only thing I argue for is that non-con-

21 “Those learn who know: for it is those who know their letters who learn the letters dictated to them. For to ‘learn’ is ambiguous; it signifies both ‘to understand’ by the use of knowledge, and also ‘to acquire knowledge’.”, ARISTOTLE, *De Sophisticis elenchis*, 165 b 30s.

22 “I flee from absent-minded eyes  
Which, seeing me always, never saw me”  
Racine J., *Bérénice*, verses 278-279 (our translation).

23 “For what a man says, he does not necessarily believe (hupolambanein)” IV, 1005 b 25.



tradition can only be demanded in *interpretation* and not in *formulation*. In other words, the PNC is a principle for the reader or the listener, not for the author. This seems to be quite elementary, but has important consequences. For instance, it distinguishes the reproach one can address to psychoanalysis from the reproach one can address to radical scepticism: Freud only requested the right to hear contradictions in the discourse of another (the analysing); the radical sceptic, on the other hand, wants the right to formulate contradictions.

### III. *The demonstration.*

#### III.1. *Normal demonstration, demonstration ad absurdum and self-evidence.*

We have said, to begin, that Aristotle had established that the PNC was not only true but also primitive. This is, for him, the reason why a "normal" (or direct) demonstration of it is impossible. There can be no premises for the demonstration of the first principle without falling into *regressus ad infinitum*: one can ask for a demonstration of those premises, then of the premises of that demonstration, and so on. Another lead for research begins here: it would be interesting to ask Aristotle why he thinks that "one cannot traverse an infinite series"<sup>24</sup>.

A demonstration *ad absurdum* is also impossible because the demonstration *ad absurdum* would show the contradiction embodied in not respecting the principle. As this is precisely the point in question, it would be a *petitio principii*, that means it would beg the question.

In the *Nicomachean Ethics*<sup>25</sup> and *Posterior Analytics*, Aristotle says that the first principle is true without demonstration and he talks about a science which he defines as meditative. This science is what he calls First Philosophy and what we used to call Metaphysics. It would be ambitious to enter here the wide debate about the existence or non-existence of Metaphysics, but we can declare with Frege<sup>26</sup> that the development of analysis has taught us to distrust non-demonstrated truths and to request

<sup>24</sup> Aristotle, *Second Analytics*, 72 b 5-20.

<sup>25</sup> "Nor must we demand the cause in all matters alike; it is enough in some cases that the *fact* be well established, as in the case of the first principles; the fact is the primary thing or first principle. Now of first principles we see some by induction, some by perception, some by a certain habituation, and others too in other ways." *Nicomachean Ethics*, 1098 b 1-5.

<sup>26</sup> Frege G., *The Foundations of Arithmetic*, transl. by J.L. Austin, (1884) 1968, p.1.

demonstrations for propositions considered before as self-evident.

The modernity of Aristotle, though, is that in *Metaphysics* IV, he rejects too the argument of self-evidence, realising that it is not a very convincing argument when advanced against somebody denying the principle. So he proposes eight undirect proofs against Antiphrasis. In the following pages, we will criticise the three most significant of them.

### III.2. *Indirect proofs.*

At first sight, and as long as dealing with first principles is considered a strictly linear activity, any demonstration of the first principle seems impossible. Aristotle, though, claims that an indirect demonstration of it is possible:

“About such matters there is no proof in the full sense, though there is a proof *ad hominem* (*pros tonde*). For it is not possible to infer this truth itself from a more certain principle, yet this is *necessary* if there is to be completed proof of it in the full sense. But he who wants to prove to the asserter of opposites that he is wrong must get from him an admission which shall *be* identical with the principle that the same thing cannot be and not be at one and the same time, but shall not *seem* to be identical” (XI, 1062 a 1-10).

The proof is called *ad hominem* because it takes for its premise what is conceded by the opponent and not necessary truths. Aristotle also calls such proofs dialectical, or proofs by question and answer, and he treats them in detail in the *Topics* VIII, where he makes a lot of psycho-strategic considerations about, for instance, the importance of concealing the conclusion (155 b 22), not insisting on an argument because it would draw attention to it (165 b 24), and even inserting things that are not required in the proof in order to draw a red herring across the trail (157 a 1).

This art of dissimulation seems very close to sophistry and we are surprised to discover it in Aristotle. No doubt, though, that he is not quoting the point of view of somebody else, as some people say Machiavelli does in *The Prince*. On the contrary, it is clear that the debate with Antiphrasis and the technique of dialectics are related, because the discussion with people who admit contradictory thinking is recalled in the *Topics* (159 b 30<sup>27</sup>). Aristotle is conscious, nonetheless, that dialectics does

<sup>27</sup> See also *Topics* I, 101 b 35s where A. explains that the first principles can only be dealt with dialectically.

not establish truth, but only probability. It is in this perspective, then, that we must envisage the demonstration of the principle of non-contradiction.

### III.2.1. *Demonstration by the necessity of non-contradiction in action.*

Contradictory thinking is obviously possible, indeed unavoidable. Contradictory debates occur not only between two people, but also inside the same person and even the same proposition<sup>28</sup>. Science often ends up to a contradictory description of reality as, for instance, the theory of light as a phenomenon both corpuscular and undulatory. Even if reality was not contradictory, it would remain that our intelligence is unable to penetrate it completely, and the weakest interpretation of contradiction in thought is forced to recognise as "acceptable" a contradictory theory when there are no better ones. Action, on the other hand, does not admit contradiction and we must decide either to go to Paris next Monday or not. Taking this for granted and unable to conceive that one could act at random, Aristotle argues that if somebody acts in a non-contradictory way, it is because his motives aren't contradictory either. And this is an appeal to the principle of sufficient reason.

"Why does a man walk to Megara and not stay at home, when he thinks he ought to be walking there?" (1008 b 12).

And the answer to the question is that this man thinks it better or worse to go or not to go. The force of the argument comes from the fact that the absence of movement would also be the result of a decision, as we suppose the man free of movement. The statement that it is not equivalent for Antiphrasis to stay or not to stay is used by Aristotle as a sort of proof by analogy and the analogy is between the couple better/worse and be/not-be. The text, however, does not give a very complete development of the argument. As a daring attempt, we will now try to go a bit further in the same direction.

A Hegelian development of the argument, according to what Hegel says about scepticism in the *Phenomenology of Spirit*<sup>29</sup>, would mean approximately this. The Sceptic embodies the figure of the pure contradiction. For

<sup>28</sup> Aristotle, faithful to PLATO, defines thought as "a dialogue of the soul" (*De Caelo*, 255 a 20).

<sup>29</sup> G.W.F. Hegel, *Phenomenology of Spirit*, transl. by A.V. Miller, Oxford, 1977, B.B.: "Freedom of self-consciousness: Stoicism, Scepticism and the Unhappy Consciousness", in partic.: pp. 123-126.

him, everything is contradictory, and, as Sextus Empiricus observed, "to every argument an equal argument is opposed"<sup>30</sup>. The Sceptic realises, altogether, the radical experience of the pure freedom of thought. He fulfils, as such, the work of Understanding. But this is also why he is unable to act. He is entangled in absolute interiority, which means he has no contact with external world anymore: "In Scepticism, consciousness truly experiences itself as *internally* contradictory"<sup>31</sup>. The Sceptic is so clever that he sees contradictory arguments on every subject, but this paralyses him. So that he becomes progressively what Hegel calls "the Unhappy Consciousness" (this looks fanciful but constitutes, however, the most interesting part of the argument, because it takes the desire for action as a premise, which is quite unusual and very close to the idea of a demonstration by refutation where the desire to communicate is the premise). So the Sceptic now wants to act and decides, for this purpose, to make a choice between A and non-A (if only to avoid paralysis, because he realises that even a mistake would be better than immobility).

For Hegel, action is not the consequence of a non-contradictory thought (as a strict application of the principle of sufficient reason would suggest); it is rather the desire for action that motivates a non-contradictory thought. It remains, however, that effective action can be used as an empirical proof of non-contradictory thought, so that if the action is taken by Antiphrasis, the proof is *ad hominem*.

Though, the demonstration by the necessity of non-contradiction in action is limited to the field of belief. Moreover, only beliefs relating to actions are concerned. It would then be overgeneralising to say that non-contradiction in action implies a non-contradictory world.

### III.2.2. *The demonstration by the necessity of a debate.*

The following argument will give us the opportunity to relate the problem of non-contradiction with ethico-practical problems. Łukasiewicz already suggested that the PNC was not a logical principle, "since it is valid only as an assumption", but an ethico-practical principle, "the sole weapon against error and falsehood"<sup>32</sup>. Nonetheless, he didn't investigate all the dimensions of this ethico-practical status of the principle and we will try now to

<sup>30</sup> Sextus Empiricus, *Outlines of Pyrrhonism*, I, 202, transl. by R.G. Bury, Loeb, Harvard, 1933.

<sup>31</sup> G.W.F. Hegel, *op. cit.*, p. 126 (we emphasize).

<sup>32</sup> Łukasiewicz L., *op. cit.*, p. 508.

develop the idea. Aristotle says:

“Even if the same thing is a thousand times a man and a not-man, the interlocutor must not, in answering the question whether this is a man, add that it is also at the same time a not-man (...) if he does this he is not engaging in discussion (ou dialegetai)” (1007a 15-20).

In this argument, Aristotle avoids explicitly the question of truth and falsity. But he goes really further, avoiding also the question of meaning to focus on something very primitive: the simple possibility of continuing the discussion. Let us take this for granted and try to understand the complex relation between contradiction and the possibility of continuing the discussion.

It is quite self-evident that a debate on a given topic would be impossible if I contradicted myself on every point of this topic, because the interlocutor wouldn't have any place in the discussion. The prohibition of total contradiction creates *a place for the other man*. He can now defend opinions *against* mine. The right to fully contradict myself would make me self-sufficient, then closed to communication.

But, on the other hand, if I had no contradictions in my inner thoughts, my only motivation to talk to somebody else would be to learn new things, but I wouldn't be interested in modifying my opinions on topics I already know about.

There are two different demands, then. One at the level of inner thoughts, where contradiction is desirable because it motivates me to enter the debate; and the other at the level of communicated thoughts, where I am asked by the Principle to formulate one of my contradictory opinions at a time, in order to make it possible for my interlocutor to answer by the other as basic rules of debates suggest.

This double and contradictory demand about contradiction may be one of the ethico-practical dimensions of the principle that Łukasiewicz was talking about without giving enough details. And Aristotle could be accused, here, both of focusing only on one of the two aspects of the problem and of considering only total contradiction, paying no attention to the most interesting and subtle case: partial contradiction. This could be the consequence of a certain radicalism against heracliteans. Is this radicalism motivated by the feeling that, even if necessary, the principle was impossible to impose universally? It would be ambitious to answer that question. And we must not forget that Aristotle gives the following advice at the very end of the *Topics*: “Do not argue with every one, nor practise upon the man in the street: for there are some people with whom any argument is bound to degenerate” (164 b 10).

### III.2.3. *The demonstration by refutation.*

What is a demonstration by refutation and how can it be distinguished from a demonstration *ad absurdum*? The demonstration *ad absurdum* concludes to the contradiction of the thesis. The demonstration by refutation shows that the conclusion is conceded by the opponent in the very act of objection<sup>33</sup>. It is a demonstration *in actu exercito*, a performative. It requests a dialogue, so it is an indirect proof. And the reason why it can be called a proof is that the opponent is so captivated by what he objects that he forgets the very *act* of objecting as such, so that he presupposes some principles without even noticing it. The idea of the demonstration by refutation is that there exists compelling presuppositions to the act of discussing. And those presuppositions are numerous.

In *Physics* VIII, Aristotle argues against people who deny the existence of movement. And the argument is that denying the existence of movement presupposes the existence of movement because the opinion (here the opinion that the movement doesn't exist) is a movement of the soul. But the most popular demonstration by refutation is the refutation of the Sceptic's assertion: "Nothing is true", to which it is easy to answer that at least one thing is true, *i.e.* that nothing is true<sup>34</sup>.

This last example is interesting for two reasons. First because it contains both a demonstration *ad absurdum* (the Sceptic contradicts himself) and a demonstration by refutation (he presupposes what he denies). This is probably why these two proofs have often been confused. Second, it is not universally accepted, because the Sceptic can still avoid the argument by behaving in a way that shows he doesn't feel compelled by the refutation. At another level, we could discuss whether the true Sceptic can be refuted by a simple argument or only by some form of therapy —by doing some sport and so on.

But concerning the PNC, the first step is to get Antiphrasis saying a word. For instance: "man"<sup>35</sup>. Because if he says this in the discussion, he means something for himself and for another. Whatever he means by "man", and even if meaning is merely conventionnal, it is not infinite, otherwise it

<sup>33</sup> Apel K.O., "La question d'une fondation ultime de la raison", *Critique*, 413, Oct. 1981, pp. 895-928, transl. from german by S. Foisy, original. publ. in *Festschrift für Gerhard Frey: Sprache und Erkenntnis*, ed. by B. Kanitscheider, 1975; Isaye G., "La justification critique par rétorsion", *Revue Philosophique de Louvain*, 52 (1954), pp. 205-233.

<sup>34</sup> *Metaphysics*, 1012 b 14. Aristotle borrows this from PLATO; see *Theaetetus*, 171 a ff.

<sup>35</sup> "Man" is not only a word, it is also a name, but this distinction won't interest us here.

wouldn't have (or be) any signification at all. Then there exists a domain which is what this word doesn't mean. This domain, is "not-man" and its simple existence suffices to claim that Antiphrasis presupposes the PNC.<sup>36</sup>

Everybody who uses a simple name means something by it and then presupposes a sort of delimitation between what it means and what it does not mean. The principle of non-contradiction is nothing more than this limit, says Aristotle, and it is quite convincing. Some problems remain, however.

First, it is only a proof at the level of language, saying nothing about the possibility of thinking contradictory or of considering that reality itself is contradictory.

Second, it shows only that the principle is true about some words. As it proceeds inductively, it can be declared neither necessary, nor primitive or universal.

Third, it proves that Antiphrasis is forced to accept the principle of non-contradiction, but as he claims the right to contradict oneself, he can both accept and refuse it and this is probably not very satisfactory for Aristotle<sup>37</sup>.

Fourth, what is true for one word is not necessarily true for a proposition since a proposition is more than a string of words. In a contradictory proposition, it is the relation between words which produces the contradiction. So that the demonstration should go further and explain how to pass from a limitation of the meaning of names (even if this limitation is not definite) to a limitation of the meaning of propositions under the definite limit of contradiction.

<sup>36</sup> Graham Priest has argued against this that a name/sentence/predicate may exclude nothing and still be meaningful, e.g.: "the totality of everything". I agree that "the totality of everything" excludes no part of the world, but, in my opinion, the point here is meaning, not the world. At the level of meaning, "the totality of everything" excludes something, otherwise by the simple "a Zoo", one would make the complete description of the parts, behaviours and origins of numerous animals. The fact that some name/sentence or predicate doesn't exclude any part of a given world does not imply that it contains every meaning that can be produced about this given world. So that we are allowed to say that "the totality of everything", considered as having a certain meaning, excludes the meaning of the following sentences: "the moon is full", "the tide is high" and "Othello is jealous", even if these three meanings are contained in the totality of everything.

<sup>37</sup> "(...) it is always false that A is true and A is false. But in some cases, this could be true too.", Crabbe M., "Soyons positifs: la complétude de la théorie naïve des ensembles", *Cahiers du centre de logique*, vol. 7, 1992, p. 52 (our translation).



#### IV. Conclusion.

Aristotle fails to demonstrate the principle of non-contradiction, even if he succeeds in convincing us of the necessity of respecting the principle in many situations. Nonetheless, the fact we are not compelled by his argumentation does not allow us to conclude that there exist some fields in which the principle is false. First because there could exist demonstrations of the PNC by other authors. And second because it is up to us to show now that (and where) the principle is false. And this is the conclusion of Dancy:

"One might deny the law of non-contradiction for all sorts of reasons. None that I have seen strike me as good reasons. But neither do I see any reason for saying that there never *could* be good reason for denying it"<sup>38</sup>

The result of my reflection in this paper is purely negative or limitative. Maybe Aristotle would have obtained more striking results if he had used a holistic approach, not trying to demonstrate absolutely a primitive principle alone on the virgin field of empty communication where the opponent is only asked to say one word (which is not very satisfying), but a group of truths which would have justified each other. Because, as Wittgenstein reminds us:

"It is not single axioms that strike me as obvious (leuchten mir ein), it is a system in which consequences and premises give one another mutual support."<sup>39</sup>

<sup>38</sup> Dancy R.M., *Sense and Contradiction: A Study in Aristotle*, Reidel, Dordrecht (Holland), 1975, p. 142.

<sup>39</sup> Wittgenstein L., *On Certainty*, § 142, transl. by D. Paul & G.E.M. Anscombe, Oxford, 1979.