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*An Inquiry into Epistemic Functions of PNC (:Principle  
of Non-contradiction) in Aristotle's Philosophy*

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**Abstract**

The main question of this paper is: what are the epistemic functions of PNC (Principle of non-contradiction) in Aristotle's philosophy? To appreciate the epistemic functions of PNC we must be clear, first, about its meaning. Although Aristotle has stated its meaning in different ways, we can classify them into three different formulations; (a) logical; those expressions which consists of concepts such as "statement" and "assertions", (b) ontological; the expressions which refers to PNC as a principle about "thing" or "being", and (c) psychological; that expressions which include the concept of "believe". According to him it is the ontological formulation which is fundamental formulation of PNC. This principle has characteristics as being non-hypothetical, improvable, the most certain, not being deceivable and being the best known of all. Such a principle with these characteristics has three important epistemic function some of which has been ignored even by Aristotle's famous interpreters. These functions are justification dependency which comes in relation to the role of PNC in justifying other beliefs, intentionality dependency, which comes from the role of PNC in relation to the meaningfulness of any word, whatsoever, as well as Practical dependency; which according to Aristotle any action requires the acceptance of PNC. It means that no one can do any thing without accepting PNC.

**Keywords:** 1- Principle of non-contradiction 2- Primary principles 3- Axioms 4- Semantic dependency 5- Justification dependency.

**I. Introduction**

In the very beginning of *Metaphysics*, Aristotle insists that "all men by nature desire to know"<sup>1</sup> (*Meta*, I, 1, 980a22). Facing to

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the question how a human being comes to know something anything? he replies that "we do know through demonstration" (*A. Pst.*, I, 2, 71b18). So according to Aristotle, we desire to know and this desire will be realized through demonstration. Up to this point there is not any problem; the problem would appear when we realize that the conclusion of any demonstration results from some premises which are, in turn, a conclusion of some other demonstration, and so on. The problem is that in so doing we will get caught up in an infinite regress; a regress of infinite demonstrations the later of which depends on the former! Is there any starting point? Aristotle answers: "Yes", there is some "primary premise", in his word, that stops the regress (*Meta.*, IV, 4, 1006a5-10). He goes on and identifies this primary premise with PNC (*Meta.*, XI, 5, 1061b34-1062a3). For many years it has been wrongly believed that the epistemic function of PNC is limited to stopping the regress. But we can ask whether PNC has any other epistemic function or not? Therefore the main question of this paper is "What are the epistemic functions of PNC (Principle of non-contradiction) in Aristotle's philosophy?" to answer the question we have to answer some primary questions such as "What does PNC mean?", "What are its characteristics?", "What are its epistemic functions?", and "What consequences does PNC have?"

## 2. What does PNC Mean?

To appreciate the epistemic functions of PNC we must be clear, first, about its meaning. So Let us begin by illustrating its meaning. Aristotle has stated it's meaning in different ways. Here are some of them: "it is not possible for contraries to hold of the same thing at the same time". (*De Int.*, 14, 24b8-9), "it is impossible for opposite expressions to be true of the same thing". (*De Int.*, 12, 21b19-20), "that it is not possible to affirm and deny at the same time is assumed by no demonstration". (*A. Pst.*, I, 11, 77 a 10-11), "the same attribute cannot at the same time belong and not belong to the same subject in the same respect". (*Meta.*, IV, 3, 1005b19-20), "it is impossible that contrary attributes belong at the same time to the same subject". (*Meta.*, IV, 3, 1005b26-27), "it is impossible for the same man at the same time to believe the same thing to be and not to be". (*Meta.*, IV, 3, 1005b29-30), "it is impossible for anything at the same time to be and not to be".

(*Meta.*, 4, 4, 1006a3-4), "contradictories cannot be predicated at the same time". (*Meta.*, IV, 4, 1007 b 18 - 19), "contradictory statements are not at the same time true". (*Meta.*, IV, 6, 1011b14-15), "the same thing cannot at one and the same time be and not be". (*Meta.*, XI, 5, 1061b34-36), "the same thing cannot both be and not be at one and the same time". (*Meta.*, XI, 5, 1062a8-9), "it is not possible therefore to make the opposed assertions truly of the same subject". (*Meta.*, XI, 5, 1062a23-24), "opposite statements can never be true of the same subjects". (*Meta.*, XI, 5, 1062a32-33), "the same thing can at one and the same time both be and not be". (*Meta.*, XI, 5, 1062b1-2), "the contradictory statements are not true at the same time". (*Meta.*, XI, 6, 1063a21-22), "contradictory statements cannot be truly made about the same subject at one time". (*Meta.*, XI, 6, 1063b15-16).

Although these statements are numerous and somehow different, we can classify them into three main groups, because they have been constructed upon different concepts, such as "believe", "thing", "statements", "assertions", "expressions". In view of these concepts we can divide the expressions into three different formulations; (a) logical, (b) ontological, and (c) psychological. These three formulations are as follows:

(a) Logical formulation; those expressions which consists of concepts such as "statement" and "assertions" as a criterion of PNC, can be considered as logical formulation of PNC, because it is logic that deals with the truth of statements and assertions. For example, he says: "contradictory statements are not at the time true". (*Meta.*, IV, 6, 1011b14-15).

(b) Ontological formulation; the expressions which refers to PNC as a principle about "thing" or "being" are related to ontology. For example, he says: "it is impossible for anything at the same time to be and not to be". (*Meta.*, 4, 4, 1006a3-4).

(c) Psychological formulation; that expressions which include the concept of "believe" can be known as the psychological formulation of PNC, such as this expression: "it is impossible for the same man at the same time to believe the same thing to be and not to be". (*Meta.*, IV, 3, 1005b29-30).

Our next task is to study the relation between these formulations. As Aristotle insists the logical formulation depends on the ontological one. He says: "It is not possible that that which

is necessary should ever not be; it is not possible *therefore* to make the opposed assertions truly of the same subject" (*Meta.*, XI, 5, 1062a23-25; Italic add). In this saying through using the word "therefore", Aristotle explicitly asserts that the impossibility of one thing to be and not to be requires the impossibility of one assertion to be true and not to be true. He goes on to say that it is in virtue of ontological formulation that the psychological formulation can be accepted. In the beginning of *De Interpretation*, Aristotle says that affections of soul, such as spoken sounds and beliefs, represent actual things (*De Int.*, 1, 16a8-9). Accordingly we can conclude that for him it is the ontological formulation which is fundamental formulation of PNC. Having considered three different formulations of it, we now come to the exact meaning of PNC which for Aristotle means that it is impossible for anything at the same time to be and not to be (For a discussion about the meaning of PNC, see 3, P. 88).

### 3. What are PNC's Characteristics?

So far we have discussed what Aristotle means by PNC. To know the function of PNC better, it is necessary to study its characteristics. Because of this here we turn to identify the characteristics of PNC. These characteristics are as follows:

1. Non-hypothetical; Aristotle thinks that PNC is non-hypothetical (*Meta.*, IV, 3, 1005b11-20). By hypothetical he means something which is

- (a) a proposition,
- (b) that tells something about being or not-being,
- (c) which can be proved, and
- (d) that is accepted (*A. Pst.*, I, 10, 76b23-34).

Although PNC is said in form of a proposition, tells something about being and is accepted, it does not meet the third condition, i. e. it cannot be proved. In other words PNC is such a proposition which says something about being and every one accepts it, but no one can prove it. Because of this attribute, Aristotle identifies "being improvable" as the second characteristic of PNC.

2. Being improvable; referring to this characteristic, Aristotle says: "about such matters there is no proof in the full sense" (*Meta.*, VI, 5, 1062a1-2). Here it emerges a question: Why

no one can prove PNC? Aristotle answers that "for it is impossible that there should be demonstration about all things" (*Meta.*, III, 2, 997a7-8). Therefore it is obvious that there must be an improvable proposition. But why this proposition actualized in PNC and not any other proposition? Aristotle's answer brings us to the third characteristic of PNC: the most certain proposition of all.

3. The most certain; he indicates that PNC is "the most certain of all" (*Meta.*, IV, 3, 1005b11-12). Aristotle does not illustrate what he, exactly, mean by "certainty", however, he insists that PNC is at the top of certainty, and, indeed, this characteristic rests on the fact that PNC is such a principle about which no one can be deceived: "and the most certain of all is that regarding which it is impossible to be mistaken" (*Meta.*, IV, 3, 1005b11-12).

4. Not being deceivable; Aristotle says that: PNC is a principle about which "we cannot be deceived" (*Meta.*, VI, 5, 1061b33-34). Here it emerges a question: why no one can be deceived about PNC? Because it is the best known thing we can know.

5. The best known; For Aristotle PNC is the best known. (*Meta.*, IV, 3, 1005b13-14). Notice that for a given knowledge to be "the best known", Aristotle has to give a distinction between different kinds of knowledge as the best known, the more knowable, as well as the less knowable. But as a first step to establishing this, Aristotle needs to tell us how the distinction is meant to drawn, and this appears in the begging of *Physics*. He argues that the natural way of obtaining knowledge is to start from the things which are more knowable and clear to us and proceed toward those which are clearer and more knowable by nature (*Phys.*, I, 3, 184a17-19). So there must be something which is the most knowable or in other words the best known.

#### **4. What are PNC's Epistemic Functions?**

According to what we have discussed, PNC is the ontological principle which tells us that "it is impossible for anything at the same time to be and not to be". This principle has characteristics as being non-hypothetical, improvable, the most certain, not being deceivable and being the best known of all. Now we try to identify the epistemic functions of such a principle.

1. Justification dependency; the first function comes in relation to the role of PNC in justifying other beliefs. As we have mentioned before according to Aristotle the conclusion of any demonstration results from some premises which are, in turn, a conclusion of any demonstration, and so on, and this regress stops at a primary premise which is actualized in PNC (*Meta.*, XI, 5, 1061b34-1062a3; For a discussion about this, see 5).

2. Intentionality dependency; the second function comes from the role which PNC has in relation to the meaningfulness of any word, whatsoever. Aristotle insists that the word "be" or "not be" has a definite meaning, so that not every thing will be so and so. He continues explaining his idea by taking the word "man" as an example and emphasizes that if "man" has one meaning, it is impossible that being a man should mean precisely not being a man. And it will not be possible for the same thing to be and not to be, except in virtue of an ambiguity, just as one whom we call "man", others might call "not-man" (*Meta.*, IV, 4, 1006a29-b20). Here, indeed, Aristotle offers an argument which can be formulated as follows:

- (1) The opponent either
  - (1/a) says something, or
  - (1/b) says nothing.
- (2) If he says nothing, it is absurd to attempt to reason with one who will not reason about anything.
- (3) If he says something, he either
  - (3/a) says something which is significant, or
  - (3/b) says something which is not significant.
- (4) If he says something which is not significant, such a man will not be capable of reasoning.
- (5) If he says something which is significant, this thing either
  - (5/a) has a definite meaning, or
  - (5/b) it has not a definite meaning.
- (6) If it has not a definite meaning, all things would have been one.
- (7) All things are not one.
- (8) This is not the case that the thing which has been said has not a definite meaning.
- (9) The thing which has been said has a definite meaning.

- (10) If the thing which has been said has a definite meaning, it would be impossible that being a man should mean precisely not being a man.
- (11) If the thing which has been said has a definite meaning, it would not be possible for the same thing to be and not to be.
- (12) PNC means that "it is impossible for the same thing to be and not to be".
- (13) If the thing which has been said has a definite meaning, it would be the case that PNC.

So for we came to the conclusion that rejection of PNC entails the impossibility of definite meaning, consequently rejection of PNC requires the impossibility of speaking. And this role which is played by PNC, can be referred to as the "intentionality dependency".

3. Practical dependency; according to Aristotle any action requires the acceptance of PNC. It means that no one can do any thing without accepting PNC. Explaining this function, Aristotle points out that "it is in the highest degree evident that neither any one of those who maintain this view (: rejecting PNC) nor any one else is really in this position. For why does a man walk to Megara and not stay at home thinking he ought to walk? Why does he not walk early some morning into a well or over a precipice, if one happens to be in his way? Why do we observe him guarding against this, evidently not thinking that falling in is alike good and not good?" (*Meta.*, IV, 4, 1008b12-16; italics add). As a result PNC has a practical function upon which every one who does any thing must already accept PNC. Otherwise his action would not have any aim. But why we speak of this function as the practical one? Because for showing this function we do not need tell something, even a single word at all, all we need is to take place an action whatsoever. Therefore this function defers form the previous one. Here it appears the question of "how does any action depend on PNC?" upon what Aristotle believes we can reply that:

- (1) Any action depends on knowledge.
- (2) Any knowledge depends on PNC.
- (3) Therefore any action depends on PNC.

### **5. What Consequences Does PNC Have?**

Here we must insist that our interest in PNC and its

functions lies mainly in what follows from it concerning epistemology. Therefore we must finally consider epistemic consequences of PNC in the light of its three functions. First of all Aristotle proceeds to show how PNC in its indicating function can act as a riposte to skepticism. Perhaps the best way of clarifying this consequence is to ask: if a given skeptic rejects PNC, and for Aristotle PNC is the primary premise without which no argument can be drawn (remember what we have said about the justification dependency of PNC), how Aristotle can defend of PNC against the skeptic? Let us here return to the famous writer of our days, Quine, who rejects PNC by saying that: "no statement is immune to revision. *Revision even of logical law of the excluded middle has been proposed as a means of simplifying quantum mechanics*; and what difference is there in principle between such a shift and the shift whereby Kopley superseded Ptolemy, or Einstein Newton, or Darwin Aristotle?"<sup>2</sup> (6, quoted from: 1995, P. 113; Italics add). Hence he goes on and indicates that "One might accordingly relinquish the law of excluded middle and opt rather for a three-valued logic, recognizing a limbo between truth and falsity as a third value" (7, P. 92).

Aristotle answers that Although PNC is the precondition for any argument, we can defend it if and only if our opponent says something and he draws attention to the fact that "the starting-point for all such arguments is not the demand that our opponent shall say that something either is or is not (for this one might perhaps take to be assuming what is at issue), but *that he shall say something which is significant* both for himself and for another" (*Meta.*, IV, 4, 1006a19-22; Italics add). Indeed, what is striking about PNC is that without accepting it, we can not say even a significant word, let alone to argue for or against something, anything. So not only PNC can not be revised but also any argument against PNC depends on it both in its meaning and in its justification. As a result PNC can act as a riposte to skepticism, and Aristotle's treatment of the denial of PNC involves a very important function of PNC, which has been ignored even by his famous interpreters, of course, there are a few cites in some of them (8, PP. 43-44).

The second consequent of PNC in its indicating function comes in relation to the way in which PNC is acquired. Upon what



we have said about this function, it appears that we can not obtain knowledge about any thing even about a single idea such as a tree, without previously realizing PNC. So when for first time we start to have notion of a sensible thing such as a tree we obtain that notion in light of the knowledge of PNC.

## 6. Conclusion

Let us summarize the position we have reached, especially concerning the functions of PNC. PNC, for Aristotle, is the most foundational principle of all, since any kind of knowledge including, empirical and rational one, rests on PNC. So from an Aristotelian point of view, it is *Arche Episteme* (: the principle of knowledge) in the core meaning of the word (4, vol. 1, P. 252). It is this principle which has justificatory, intention, and practical functions, all together. The conclusion of any demonstration results from some premises which are, in turn, a conclusion of any demonstration, and so on, and PNC in its justificatory function, as a primary premise, stops this regress. According to the intentionality function of PNC, if a given word has a definite meaning, it would not be possible for the same thing to be and not to be, and finally PNC in a practical function is accepted once any action has been done. These functions put PNC in a position so that it can act as a response to skepticism, though this thought might sound odd to the contemporary writers.

## Notes

- 1- All translation of Aristotle's words has been quoted from: Barnes, Jonathan, ed. (1984). *The Complete Works of Aristotle*, New Jersey: Princeton University Press.
- 2- In fact, for Quine there is no deference between PNC and the law of the excluded middle.

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