

The Law of Non-contradiction in Aristotle's *Metaphysics*: Its Foundation and Formulation

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[Abstract: The Law of Non-contradiction is one of the certain principles of thought in Aristotle's *Metaphysics*. By distinguishing between science and metaphysics, he outlines the nature of metaphysics and formulates the fundamental principles of metaphysics, the science of being *qua being*. This distinction of science and metaphysics sets the foundation for The Law of Non-contradiction as well. In this paper, the LNC has been discussed in the light of three questions: in terms of nature, 'how is the LNC formulated in Aristotle's *Metaphysics*?'; in terms of importance, 'why is it necessary to formulate the LNC?' and; in terms of evaluation, 'what is the consequences of denying the LNC?'.]

Aristotle considers metaphysics, a science of being *qua being*, as the first philosophy in which first principles of first causes are discussed. The Law of Non-contradiction (LNC for short) is one of the first principles in Aristotle's *Metaphysics*. He distinguishes metaphysics from other special sciences e.g. Physics, Biology, Medicine etc. in the light of its scope and nature. These special sciences investigate *being* from different partial points of view. *Being* in these sciences is not 'being *qua- being*'. For an example, being in physics is object of nature; in Medicine and Biology being is an organic entity. Aristotle thinks that only metaphysics has the sole responsibility to investigate being *qua being* with the first principles and causes. Special sciences are not capable of investigating being *qua being* for their very nature. The beginning chapters of Aristotle's *Metaphysics* are devoted to establish metaphysics as a distinct science of being *qua being* with its primary principles. In this paper the LNC has been discussed in the light of three questions: in terms of nature, 'how is the LNC formulated in Aristotle's *Metaphysics*?'; in terms of importance, 'why is it necessary to formulate the LNC?' and; in terms of evaluation, 'what are the consequences of denying the LNC?'.

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Nature of Metaphysics and Science: The Foundation of the LNC

Before formulating the LNC, Aristotle has made a foundation with the discussion of the nature of metaphysics and science. We notice the formulation of the LNC several times in several ways in Book IV of *Metaphysics*.

...it is impossible for anything at the same time to be and not to be, and by this means have shown that this is the most indisputable of all principles.¹

Aristotle considers metaphysics as the study of the nature of substance, a unique approach compared to other special sciences. The approach of metaphysics is not directed to the investigation of any special feature of substance, but rather towards the general feature of substance. Metaphysics studies existing substance *qua* existing, the best knowledge of every genus.

As the best knowledge, metaphysics generates the most certain principles of first cause. Aristotle's argument about the certainty of the LNC runs as follows:

Premise 1: A philosopher studies the basic nature of all things.

Premise 2: A philosopher studies existing things *qua* existing.

Premise 3: A philosopher knows the best about the genus.²

Conclusion: Therefore, a study of existing things *qua* existing must be able to state the most certain principles of all things.³

Clearly, from the above argument it has been shown that existence *qua* existence generates certainty. For, a special study of particular beings might be falsified or proved untrue but the study of first principle is beyond falsification. Existence *per se* is such a principle whose authenticity is unquestionable for its very nature. Metaphysics, as the study of existing things *qua* existing, includes the most certain and indisputable principles. The question comes, whether other special sciences e.g. Mathematics, Geometry, Physics, Biology etc. deal with certain and indisputable principles. Aristotle says that no special inquiry of substance includes the

1. McKeon, Richard, ed. *The basic works of Aristotle*. Modern Library, 2009. p. 737

2. Aristotle describes how metaphysics includes the knowledge of all contrary relations of substances e.g. concept of prior and posterior, genus and species, whole and part, and so on.

3. Study of 'existing things *qua* existing' means the study of 'genus' and each genus has being; hence, principles of the genus is applicable to all of its members.

truth and falsity of the principles of first cause. In fact, it is not the task of special sciences to determine the certainty of the principles of first cause.

Metaphysics investigates the essence of a thing, the contrary relations of being *qua* being. There are essential and accidental qualities of being. Essential quality refers to the most fundamental and primary thing of a being. 'Socrates', not 'Socrates seated' or 'Socrates bearded', is the subject matter of metaphysics. Hence, metaphysics, being first philosophy, is the primary foundation of all sciences. Metaphysics, being the primary science, studies the essence of 'man'. This is the study of 'man' as 'man it is'. But, special sciences, medicine and biology for example, study 'man' in regard to the health and organisms respectively. Being the first philosophy of being *qua* being metaphysics has the sufficient reason to declare its principles certain. Metaphysics is the study of the essence of being and its principles are generated from the study of the essence of being. Special sciences do not study being *qua* being and its principles are not comparable to the principles of metaphysics regarding certainty, for the inquiry of special sciences also includes the accidental qualities of beings which are uncertain and changeable. On the other hand, the principles generated from the study of the first philosophy are the most certain and indisputable, for it is the study of the essential qualities of being which is unchangeable and certain. The LNC is generated from the study of first philosophy and therefore the most certain and indisputable. Substance is prior to other things (as 'substance' can be without 'other things' but not the vice-versa) and metaphysics outlines the essence and properties of substance.

Aristotle refers to his previous philosophers who think that contraries are reducible to being and non-being, unity and plurality.⁴ Contrary opposites rest and motion, for an example, belong to unity and plurality respectively. Parmenides' concept of permanence implies a whole unity of universe whereas Heraclitus' change implies the multiplicity of universe in every moment. Again, Pythagoreans treat number in terms of the contrary relation of odd and even; Parmenides considers matter in terms of the contrary relation of hot and cold; Platonists in terms of limit and unlimited; Empedocles in terms of love and strife. Aristotle considers this reduction of contrary opposites to unity and plurality as self evident.

...it belongs to one science to examine being *qua* being. For all things are either contraries or composed of contraries, and unity and plurality are the starting-points of all contraries.⁵

4. McKeon, Richard, ed. *The basic works of Aristotle*. Modern Library, 2009. p. 735

5. *ibid.* p. 735

The study of metaphysics is universal and of primary principles. It deals with the truth and falsity of the principles of universals. Primary Philosophy provides the theoretical knowledge of both the LNC and primary substance. The LNC, being the primary assumption, serves the foundation of any knowledge, science or metaphysics. This is the starting point of any discourse; hence, it is impossible to have the knowledge of anything without the assumption of the LNC. Both these principles are universal first principles.⁶Hence, the axioms of metaphysics are also applicable to particular instances and the principles cannot be mistaken.

Nature of the LNC: How it is Formulated

Now, Aristotle formulates the principle as:

...the same attribute cannot at the same time belong and not belong to the same subject and in the same respect.⁷

The properties of this formulation are:

- a) same attributes
- b) same subject
- c) belong and not-belong
- d) at the same time
- e) in the same respect

All these five properties of the formulation are necessary to formulate the principle as:

...it is impossible for anyone to believe the same thing to be and not to be.⁸

It can also be understood as:

It is not the case that: it is the case that P and it is not the case that P, at the same time in the same respect.

Or, symbolically, $\sim (P \cdot \sim P)$

Some of the commentaries on Aristotle's Metaphysics have mentioned several formulations of the LNC.

6. Reeve, Charles David Chanel. *Substantial knowledge: Aristotle's metaphysics*. Hackett Publishing, 2000. p. 261

7. McKeon, Richard, ed. *The basic works of Aristotle*. Modern Library, 2009. p. 736

8. *ibid* p. 737

- [1] It is impossible for the same thing both to belong and not to belong to the same thing at the same time and in the same respect. (1005b19–20)
- [2] It is impossible for contrary things [e.g. motion and rest] to belong to the same thing [e.g. the same spinning-top] at the same time. (1005b26–27)
- [3] It is impossible for something to be [here 'to be' is used as an abbreviation of 'to be F'] and not to be [i.e. not to be F] at the same time.
- [4] It is impossible that it should at the same time be true to say of the same thing both that it is human and that it is not human. (1006b33–34)⁹

Again, the formulation of the LNC is described in a three-fold way with its ontological, logical, and psychological aspects: in its ontological aspect, the LNC is formulated through the discussion of being and substances; in its logical aspect, the LNC is formulated through the discussion of contradictory pair of statements; and in its psychological aspect, it has been discussed whether we can conceive a thing to be and not be at the same time.¹⁰ For an example, the above formulations [1], [2], [3] and [4] state the nature of being; thus it is ontological. If the LNC is formulated through the discussion of proposition or statement (e.g. a proposition or statement cannot be both true and false at the same time), then it reveals its logical aspect. Again, if the LNC states that it is impossible to *believe* the above formulations of [1], [2], [3], and [4] for any person, then it describes the psychological aspect of the LNC.

Regarding the proof of the LNC Aristotle says that it does not require demonstration. In fact, no demonstration is possible for the LNC. The LNC is considered as self-evident in Aristotle's *Metaphysics*. Still, Aristotle gives a negative proof of the LNC. Even to have a negative proof we must have a starting point. The method of negative proof, in logic, requires an assumption first and it starts with the negation of the assumption. In the line of argumentation if it is possible to show the contradiction of the negation of the first assumption, then the assumption is proved. But there must be an assumption as the starting point and Aristotle mentions that the assumption cannot be something which 'is' and 'is not' at the same time. Because such an assumption implies 'nothing' indeed. But, the starting point must be with

9. Politis, Vasilis. *Routledge philosophy guidebook to Aristotle and the Metaphysics*. Routledge, 2004. pp. 122-23

10. Lukasiewicz, Jan, and Vernon Wedin. "On the principle of contradiction in Aristotle." *The Review of Metaphysics* (1971): 485-509.

‘something’. It seems that Aristotle’s point of negative demonstration implies a circular argument, an argument that presupposes the conclusion as its premise. The LNC is the starting point of something and to prove the LNC it requires one to have an assumption of starting point of something which is equivalent to the assumption of the LNC. In fact, Aristotle’s negative proof of the LNC is an additional attempt to formulate the LNC. He takes the formulation as self-evident. There is no proof of the LNC. So the fallacy of circular argument does not affect the LNC because the negative demonstration of the LNC is an additional attempt.

Aristotle also requires having only one meaning for a thing. He says,
 ...for not to have one meaning is to have no meaning, and if
 words have no meaning our reasoning with one another, and
 indeed with ourselves, has been annihilated.¹¹

A thing may have several meanings, but the meanings signify precisely one thing. ‘Being a man’ precisely cannot mean ‘not being a man’. ‘Man’ may refer to ‘white man’, ‘tall man’, ‘rich man’ and so on, but these all refers to ‘man’ precisely. Up to now, Aristotle formulates the LNC in terms of being or thing. The question comes, if same thing cannot ‘be’ and ‘not-be’ at the same time in the same respect in name, then, is it possible for it to happen in fact? Pointing out the accidental and essential difference of the qualities of a thing Aristotle claims that the principle is also applicable in facts. Being a ‘man’ is the affirmation of essence of man and the negation of that affirmation of essence is being a ‘not-man’. The accidental qualities are not the essence of a thing and a thing cannot be defined by its accidental qualities. ‘Socrates seated’ or ‘Socrates with beard’ does not denote the essence of Socrates and it is not the subject matter of metaphysics.

To sum up, metaphysics is the study of being *qua being* and the LNC is the primary assumption of metaphysics which serves as the axiom of other special sciences. Being the science of the primary principle that studies the essence of substance, metaphysics generates the most indisputable and necessary principles. The LNC is the most indisputable and necessary principle as a principle of metaphysics. This principle is beyond demonstration and the starting point of any discourse of knowledge.

Importance of the LNC: Why it is Necessary to Formulate the LNC

The significance of the LNC is still evident in every sphere of knowledge. The special sciences take this law for granted. Truth and falsity of the

11. McKeon, Richard, ed. *The basic works of Aristotle*. Modern Library, 2009. p. 738

principles of being *qua being* is not the subject matter of the special sciences. *Metaphysics* deals with this. Aristotle says,

Therefore since these truths clearly hold good for all things *qua being* (for this is what is common to them), to him who studies being *qua being* belongs the inquiry into these as well. And for this reason no one who is conducting a special inquiry tries to say anything about their truth or falsity, – neither the geometer nor the arithmetician.¹²

This means, the LNC serves the foundation of special sciences. In fact, the LNC makes any discourse possible. It would be impossible to begin any knowledge without the assumption of the LNC. *Metaphysics*, as the first philosophy, makes the knowledge of other sciences possible and the LNC is the principle of this first philosophy. The LNC saves knowledge from sophistic interpretation. Sophistic interpretation of changes and motion makes all sorts of knowledge impossible. If everything in the state of *becoming*, then two contradictory statements can be true at the same time. 'Socrates is a citizen of Athens' and 'Socrates is not a citizen of Athens' can be true at the same time; for, 'Socrates' or 'Athens' cannot be defined due to the changes in every moment. Aristotle's formulation of the LNC saves knowledge from this nihilism. Formulation of the LNC eliminates the controversy regarding 'starting point' and 'demonstration' of the principles of first philosophy. The LNC confirms that there must be a starting point to begin any conversation which will lead to knowledge. The starting point refers to *something* rather than *nothing*. Even if the changes are true, there must be something which is changing. Without a starting point of change there will be an infinite regress which cannot be the case. He also shows the reason why it is not possible to demonstrate such laws. The truth of the LNC cannot be demonstrated because this is the fundamental truth of all reasoning. There is nothing more indisputable and certain than the LNC and therefore it is not dependent to something else for its demonstration.

Evaluation of the LNC: the Reasons and Consequences of Denying the LNC

The denial of the LNC brings several consequences according to Aristotle. With reference to the sophists he states the possible problems of the denial of the LNC. Heraclitus' *doctrine of change* which makes all knowledge impossible by the denial of the LNC is criticized in Aristotle's

12. *ibid* p. 736

Metaphysics¹³. Changes everywhere does not imply that there is only change. Rather, the very word '*change*' indicates something which is changing. Change cannot take place without grasping a thing. Heraclitus' denial of the LNC is the result observing the change in the sensible world. A thing both 'is' and 'is not' at the same time as it is changing in every moment, according to Heraclitus. But we know a thing with reference to its form or essence. Heraclitus observes changes in the accidental qualities. However, accidental qualities may change but the essential qualities never changes. So, the changes in accidental qualities do not make a thing different. The change of a man can be defined by observing the change of physical appearance; say, skin, teeth, hair etc. The question comes, what is it that makes a 'man'? Is it physical appearance or something else? In Aristotle's view, the essence of man defines a man. Skin, teeth and hair are merely accidental qualities of man. Changes of accidental qualities do not imply that the essence is changing. This is one of the reasons to deny the LNC, as Heraclitus does by observing changes everywhere.

Moreover, changes observed through sense perception cannot grasp the change as a whole. Sense perception is capable of observing changes partially. The result of partial observation is not applicable to the whole. One commits the fallacy of composition if the attributes of parts are ascribed to the whole. Fallacy of composition is ascribing the property of the part of a whole on the whole. For an example, if someone makes argument that 'all the people I have met of the state X are selfish; therefore, people of the state X are selfish. The result of partial observation in the state X has been ascribed on the whole of the state X. In Aristotle's view, we are not capable to observe the whole changes of a thing but a part. Observing the changes in part we must not ascribe the property '*change*' on the whole. If the change of Heraclitus is accepted then everything will be 'be' and 'not be' at the same time, meaningless in other words. Heraclitus' denial of the LNC makes no creativity and knowledge possible.

Graham Priest mentions the characteristics of the LNC in the following way:

1. Contradictions entail everything
2. Contradictions cannot be true
3. Contradictions cannot be believed rationally
4. If contradictions were acceptable, people could never be rationally criticized
5. If contradiction were acceptable, no one could deny anything¹⁴

13. Heraclitus' *doctrine of change* states that everything is in constant motion; everything is changing in each moment.

Aristotle distinguishes metaphysics from other special sciences in terms of its scope and principles. The LNC is a fundamental principle of metaphysics which makes other branches of knowledge possible. Sophistic denial of the LNC provokes severe consequences in the realm of knowledge. Aristotle's formulation of the LNC becomes the source of secured knowledge.

References:

1. McKeon, Richard, ed. *The basic works of Aristotle*. (Modern Library, 2009).
2. Reeve, Charles David Chancel. *Substantial knowledge: Aristotle's metaphysics*. (Hackett Publishing, 2000).
3. Politis, Vasilis. *Routledge philosophy guidebook to Aristotle and the Metaphysics*. (Routledge, 2004).
4. Priest, Graham. 'What is so Bad about Contradictions?' In *The Journal of Philosophy* 95.8 pp. 410-426, Hanover, PA: The Sheridan Press, 1998.

Lukasiewicz, Jan, and Vernon Wedin. "On the principle of contradiction in Aristotle." *The Review of Metaphysics* (1971): 485-509.