

## **The Principle of Contradiction: Nyāya and Western Logic**

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Regarding contradiction, I would like to compare the thesis of the Nyāya philosophers with the views of Western philosophers.

### **a) Aristotle and the Nyāya**

- 1) Let us begin with Aristotle's formulation of the principle of contradiction.<sup>1</sup> It is claimed that Aristotle has formulated the ontological, logical, and psychological principle of contradiction in the following three ways respectively:
  - a) To no object can the same characteristic belong and not belong at the same time.
  - b) Two conflicting (contradictory) propositions cannot be true at the same time.
  - c) Two acts of believing that correspond to two contradictory propositions cannot obtain in the same consciousness.

These formulations do not have the same meaning, although the logical formulation, according to Lukasiewicz, is logically equivalent to the ontological formulation. The equivalence is due to the 'one-one correlation between assertions and objective facts', as assertions indicate objective facts. Lukasiewicz also claims that Aristotle tries to prove the psychological principle of contradiction in terms of the logical principle. Since Aristotle could not demonstrate that acts of believing corresponding to contradictory propositions are incompatible, he fails to establish the psychological principle of contradiction. Lukasiewicz also claims that Aristotle in his investigation of acts of believing commits the fallacy of 'logicism in psychology' which is the counterpart of the fallacy of 'psychologism in logic'.

As regards the Nyāya position with respect to the principle of contradiction, I would like to mention that the followers of the Nyāya would accept the following formulations of the ontological, logical, and psychological principle of contradiction:

- a) Ontological formulations:

i) A cannot be both A and not A

ii) A cannot be both B and not B

The relation between A and not A, or between B and not B, is called 'opposer-opposed' ('*bādhya-bādhaka*'), as one of the conjuncts excludes the other. Moreover, the Nyāya claims that everything has its own identity. Hence the principle that everything has the property of having an identity, i.e.,  $(\lambda x) (x=a)$ , excludes the possibility of having contrary or contradictory property. For this reason, this table cannot be not a table, this red colour cannot be not this red colour, and so on. Since ontological entities B and not B are related to each other by the relation of opposer-opposed, there is no contradiction at the factual or ontological level.

It is to be noted that the Nyāya concept of identity is not a universal which is present in every object. The property of identity of John, i.e.

$(\lambda x) (x = \text{John})$ , is not the same as the property of identity of Tom, i.e.  $(\lambda x) (x = \text{Tom})$ . Since each object has its own identity which is unique, it cannot have its opposite. For this reason, John cannot have the property of being Tom. Hence in the Nyāya system, we have an argument in favour of the ontological formulation of the principle of contradiction, which according to Lukasiewicz, is lacking in Aristotle.

b) Logical formulations:

i) It is not the case that p and not p, i.e.  $\sim(p \cdot \sim p)$

ii) A sentence cannot be both true and false

The Nyāya philosophers would accept both i) and ii). This is due to the fact that if a proposition is true, then it corresponds to a fact. Since the ontological principle excludes having contradictory properties or facts, there cannot be true contradictory sentences. Hence the logical principle of contradiction rests on the ontological principle of contradiction. Therefore, the Nyāya notion of reality and the concept of truth would substantiate the logical principle of contradiction.

c) Psychological (or epistemic) formulation:

The thought (or cognition) of p prevents the occurrence of the thought of not p, and vice versa.

It is to be noted that the relation between p and not p at the epistemic level is called 'preventer-prevented' ('*pratibadhya-pratibandhaka*'). Hence two contradictory beliefs cannot occur at the conscious level of our mind. In order to explain the preventer-prevented relation between contrary beliefs, such as x is round and square, we require a cognition which is to be expressed by the sentence:

a)  $(x) (\text{If } x \text{ is round, then } x \text{ is not square}),$

or

b) (x) (If x is square, then x is not round).

It is to be noted that the Nyāya philosophers have not committed the fallacy of logicism in psychology, an objection raised against the formulation of Aristotle by Lukasiewicz, as the preventer-prevented relation is causal, not logical.

Now the question is whether the content of thought can have contrary or contradictory objects or entities. In other words, the question is whether a person, say S, can think of p and not p at the same time. In other words, whether the content of thought can have contrary or contradictory properties. On this point, the Nyāya philosophers would point out that the thought of a contradiction is itself a contradiction. In other words, the thought of p and not p would imply the thought of p and the thought of not p. Hence S thinks that p and not p would imply S thinks that p and S thinks that not p. Since the former prevents the occurrence of the latter and vice versa, both S thinks that p and S thinks that not p cannot occur consciously at the same time.

From the above discussion of preventer-prevented relation at the epistemic level, it follows that p and not p cannot be thought consciously at the same time at the same conscious level of our mind. But the preventer-prevented relation between cognitions corresponding to contrary sentences depends on the apprehension of a pervasion relation such that if one of the contrary terms is present, then the other is absent (*tad-abhāva-vyāpya-darśana-vidheyā-pratibandhaka*). The sentence which expresses this type of pervasion relation corresponds to the meaning postulate of contemporary philosophers. Hence, according to the Nyāya, an act of thought (belief or cognition) cannot have contrary or contradictory content.

It is also to be noted that according to the Nyāya the principle of contradiction is a necessary presupposition of any inferential cognition, but not according to Aristotle. The following syllogism is valid according to Aristotle, although it contains a contradiction:

B is A (and not also not-A)  
C, which is not-C, is B and not-B  
Therefore, C is A (and not also not-A),  
where A is living creature, B is a man, and C is Callias.

It is to be noted that the Nyāya philosophers emphasise the relevance relation between the premises of an inference, or between the premises and the conclusion. Since there is no unified thought corresponding to a contradiction or understanding the meaning of a contradiction, it cannot be used in inference, syllogistic or non-syllogistic.

From this thesis of the Nyāya philosophers, it does not follow that we cannot assign a truth value to a contradictory or contrary sentence. Let us consider the following sentences:

- (a) A table which is brown and not brown
- (b) A round-square

As regards their truth values, the Nyāya claims that each of them is false. Now the question is, how do we know the truth-value of a sentence if it does not generate a cognition? Since (a) and (b) do not generate any cognition, how can we know that they are false?

The Nyāya claims that we come to know the falsity of (a) when we know the truth of the sentence 'A brown table', i.e., 'A table which is characterized by a brown colour' or the truth of the sentence 'A non-brown table', i.e., 'A table which is characterized by the absence of a brown colour'. Similarly, we come to know the falsity of (b) when we know the truth of the sentence 'A round object' and the truth of '(x) (If x is round, then x is not square, ie, x has absence of square)', or when we know the truth of the sentence 'A square object' and the truth of '(x) (If x is square, then x is not round)'.

#### **b) Recent Views and the Nyāya**

Now I would like to mention that the Nyāya has avoided some of the extreme positions present in contemporary philosophy.

According to G.E. Moore, a contradictory sentence is meaningless.

To quote Moore: "...if in the sentence 'Some tame tigers don't exist' you are using 'exist' with the same meaning as in 'Some tame tigers exist', then the former sentence as a whole has no meaning at all-it is pure nonsense."<sup>2</sup>

Hence, according to Moore, a contradictory sentence is meaningless. Since an analytic sentence is a negation of a contradiction, it is also a meaningless expression according to the significance criterion of negation. But the Nyāya philosophers have avoided this extreme position, as contradiction is a meaningful expression although it cannot generate a unified cognition.

According to another extreme position, a contradictory expression is meaningful and we can understand its meaning. David Armstrong claims that it is possible to believe contradictory propositions simultaneously. To quote Armstrong:

"The conjunction of Bap and Ba~p is a possible state of affairs."<sup>3</sup>

But, according to the Nyāya, one cannot consciously believe both p and not p. This is due to the fact that the thought of p prevents the occurrence of the thought of not p, and vice-versa.

The Nyāya has also avoided another extreme position. Regarding contradiction, Strawson says: “suppose a man sets out to walk to a certain place; but, when he gets half-way there, turns round and comes back again. This may not be pointless. He may, after all, have wanted only exercise. But, from the point of view of a change of a position, it is as if he had never set out. And so a man who contradicts himself may have succeeded in exercising his vocal cords. But from the point of view of imparting information, of communicating facts (or falsehoods) it is as if he had never open his mouth. He utters words, but does not say anything.”<sup>4</sup>

This is also an undesirable thesis, as the denial of a contradiction would be equally pointless according to the significance criterion of negation. Since the Nyāya assigns the value false to a contradiction, it is not a pointless expression.

According to paraconsistent logicians, a contradiction is not only a meaningful proposition but sometimes true, although it does not imply every proposition.

According to the classical logic, a contradiction, such as it is raining and not raining, implies any proposition, such as  $7+5=12$ . Paraconsistent logicians are motivated by inconsistent information coming from different reliable sources, or inconsistent evidences of witnesses, or paradoxes such as liar. Hence a proposition of the form  $p$  and not  $p$  may not be rejected outright.<sup>5</sup>

Some paraconsistent logicians, such as Graham Priest, have even claimed that inconsistent theories may be true. Hence a proposition of the form ‘ $p$  and not  $p$ ’ has been claimed to be true. The most commonly cited examples are self-referential paradoxes. Hence the paradoxes discussed by Russell, including the liar paradoxes, are considered true. Similarly, inconsistent propositions about the objects on the borderline of vague predicates are also treated as true. Some paraconsistent logics reject the Disjunctive Syllogism:

$A \vee B$  and  $\sim A$  entails  $B$ .

Some paraconsistent logicians allow a non-classical truth value, namely, both true and false. Some others give up the truth-functional nature of negation, so that if  $p$  is true, then not  $p$  may be either true or false.

Regarding paraconsistent logic, the Nyāya philosophers would claim that this view is not only counterintuitive and leads to the rejection of certain logical principles, but also violates the principle of relevance. Hence the Nyāya philosophers would agree with the criticisms raised by the followers of classical logic.

From the above discussion, it follows that the Nyāya philosophers have put forward a theory of contradiction, which avoids the extreme positions of contemporary philosophers or rejects the counterintuitive or undesirable

consequences. Moreover, the Nyāya also avoids the shortcomings of Aristotle's logic

### References

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