Concept of Eubulides' Paradoxes: A Brief Analysis

Kutubuddin Sheikh

Assistant Professor, Department of Philosophy, Dhruba Chand Halder College, South 24 Parganas, West Bengal, India

Abstract:

Eubulides of Miletus is most famous for inventing forms of seven famous paradoxes. The *aim of the research paper is which paradoxes are really paradox among the Eubulides' seven paradoxes. Seven paradoxes are the liar, the masked man, the Electra, the overlooked man, the heap, the bald man and the horns paradox. These seven paradoxes were reduced to the four types of paradoxes. These are- 1) the liar paradox 2) the hooded man, the unnoticed man, or the Electra paradox 3) The bald man, or the Heap paradox and 4) The Horned man paradox. These four types of paradoxes raise questions about truth or falsity of a statement, know the words, vagueness of a term, presupposition of an argument. My observation is that only two types of paradoxes are real paradoxes among the four paradoxes i.e., the liar paradox and the heap or bald man paradox. So, it can be stated that initially Eubulides' seven paradoxes are inventive forms of paradox but only two types of paradoxes are important in our day-to-day life.*

Keywords: Paradox, Truth or Falsity, Know, Vagueness, Presupposition.

Introduction: Logic is an important branch of Philosophy. We cannot accept or deny anything without reason or logic. It is very essential to each and every man in their day-to-day life. We can justify any statement through the logic. No theory will be accepted without logic. So, it is proved here that how logic is valuable in our life. We know that logic deals with the study of the development of the science of valid inference. Now, question is that, what is Logic? 'Logic is the study of the methods and principles used to distinguish correct from incorrect reasoning'[1]. We know that, Aristotle was the first thinker to invent a logical system. But the study of the logic has been started before Aristotle. He drew upon the emphasis on universal definition found in Socrates, the use of *reductio ad absurdum* in Zeno of Elea, claims about propositional structure and negation in Parmenides and Plato, and the body of argument techniques found in legal reasoning and geometrical proof. Further, we find the major innovations in logic are due to the Megarian-Stoic School. They developed an alternative account of the syllogism and in the course of so doing, expounded a full propositional logic which complements of Aristotle term logic. We find two divisions

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[1] Copi. I.M., Cohen, C &. McMahon, K., Introduction to Logic (14th Edition), p. 2

of logic i.e., Indian and Western logic. Actually, here, our focus of discussion will be the Western logic. Here, the term 'Western logic' is referred to Greek logic. Ancient logic was inseparable from ancient Greek Philosophy. Aristotle, Diodorus Cronus, Chrysippus and Eubulides helps to developed the logic influenced by metaphysical and epistemological concepts. Now, we will discuss the concept of Eubulides' paradoxes. Eubulides of Miletus is known as a renowned Philosopher. His exact date of birth is not known, but as an educated guess it may be placed towards the end of the fifth century, perhaps around 405 BC. We know that he was born in the Greek colony Miletus, in Asia Minor which is now known as Turkey. He was the most prominent and influential member of the Megarian school of dialecticians as whole head he succeeded its founder, Euclides of Megara, a pupil of Socratics. It is very interesting that the Megarians derived this concern from the ancient Sophists who reveled in reason-baffling paradoxes. Because they brought grist to the mail of their teaching that reason is inadequate for enabling us to grasp the reality of things. He is credited with seven important paradoxes: The Liar, The Overlooked Man, Electra and hir Brother, The Masked Man, The Heap, The Bald, and The Horns Paradox[2].

The 'paradox' has a very long history starting from the days of early Greek philosophers till modern times. The first appropriate discussion of the paradox is observed to be made by the Megarian school. Euclides of Megara was a founder of this school. One of his pupils, namely Eubulides of Miletus constructed the invention forms of seven famous paradoxes (The Liar, The Masked Man, The Electra, The Overlooked Man, The Heap, The Bald Man, The Horned man paradox).

The word "paradox" is derived from the two Greek words 'para' (meaning 'contrary to') and 'doxa' (meaning 'opinion'). The etymological meaning of the term 'paradox' is contrary to received opinion. This term has come to refer to that which is or seems to be contrary to common sense. In philosophical discussion, the word has assumed a more precise meaning. A paradox consists of two contrary or even contradictory propositions to which we are led by apparently sound arguments. Some logicians seems that a paradox is a kind of contradiction. But it differs from an ordinary contradiction in this that while an ordinary contradiction follows from a set of premises, in the case of a paradox the contradiction is logically necessary. Thus, if we assume P and arrive at ~ P, the proposition P → ~P, i.e. ~ P is logically necessary. Similarly, if we assume ~P and arrive at P, the proposition ~P → P i.e. P is logically necessary. So, it can be said that when a contradiction is logically necessary it becomes a paradox.[3]

Now, Eubulides' seven paradoxes are described in the following:
1. **The Liar paradox:** 'A man says that I am a liar. Has he said true or false?'
   If the statement is true, then he is lying, even though the statement is true. If the statement is a lie, then he is not actually lying, even though the statement is a lie. Thus, if the speaker is lying, he tells the truth, and vice versa.

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[2] Rescher, N., Paradoxes: Their Roots, Range, and Resolution, p. 78.
[3] Chattopadhyay, M., What to do with the Liar? p. 2

2. **The Masked Man paradox:** Do you know this masked man?" "No." "But he is your father. So, do you not know your own father?"

3. **The Electra paradox**: Electra doesn't know that the man approaching her is her brother, Orestes. Electra knows her brother. Does Electra know the man who is approaching?

4. **The Overlooked Man paradox**: Alpha ignored the man approaching him and treated him as a stranger. The man was his father. Did Alpha ignore his own father and treat him as a stranger?

5. **The Heap paradox:** A single grain of sand is certainly not a heap. Nor is the addition of a single grain of sand enough to transform a non-heap into a heap: when we have a collection of grains of sand that is not a heap, then adding but one single grain will not create a heap. And so, by adding successive grains, moving from 1 to 2 to 3 and so on, we will never arrive at a heap. And yet we know full well that a collection of 1,000,000 grains of sand is a heap, even if not an enormous one.[4]

6. **The Bald Man paradox:** 'Would you say that a man was bald if he has only one hair? Yes. Would you say that a man was bald if he had only two hairs? Yes. Would you…, etc. Then where do you draw the line? In other word a full head of hair is obviously not bald. Now the removal of a single hair will not turn a non-bald man into a bald one. And yet it is obvious that a continuation of that process must eventually result in baldness.

7. **The Horns paradox:** 'What you have not lost, you still have. you have not lost horns. Therefore, you still have horns.

These seven paradoxes mention above were reduced to the four paradoxes.

The Greek author Diogenes Laertius (early 3rd century AD), an invaluable source of information about ancient philosophy, writes (ii, 108):
Among the successors of Euclides was also Eubulides, who raised many questions of logic: the liar, the unnoticed man, the Electra, the hooded man, the heap, the horned man, and the bald man.

From the explanations given by various writers of later antiquity it appears that some of the seven paradoxes specifically attributed to Eubulides were merely variants of others and that the list can probably be reduced to the four following items:

(1) The Liar. 'A man says that he is lying. Is what he says true or false?'

(2) The Hooded Man, the Unnoticed Man, or the Electra. 'You say you know your brother. But that man who came in just now with his head covered is your brother, and you did not know him.'

(3) The bald man, or the Heap. 'Would you say that a man was bald if he had only one hair? Yes. Would you say that a man was bald if he had only two hairs? Yes. Would you. . ., etc. Then where do you draw the line?'

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[4] Sainsbury, R.M., *Paradoxes*, p. 23-51.

(4) The Horned Man. 'What you have not lost you still have. But you have not lost your horns. So, you still have horns.'[5]

1. **The Lair paradox:** The first paradox is probably the most famous paradox, and is similar to the famous paradox of Epimenides the Cretan. This paradox shown that the oddity of trying to make a statement say something about its own truth or falsity.

2. **The Masked man, the Electra Man, or the overlooked Man:** The second, third and fourth paradoxes are variants of a single paradox. These paradoxes are related to the questions about different uses of the word "know" and about the propriety of assuming that, if X is identical with Y, whatever can be said truly of X can also be said truly of Y.
   It seems that this is not a real paradox. Because when someone says that 'I know my brother' that means he recognized her brother. But here, her brother's head is covered. That's why he did not know her brother. If her brother's head is not covered then he knows her brother. So, this is not an actual paradox.

3. **The Bald Man, or the Heap:** The fifth and sixth paradoxes are not different types but both the paradoxes may be explained as a single type of paradox and is usually thought to relate to the vagueness of language.

4. **The Horned Man:** The final paradox attracts presuppositions involved in a proposition. It was based on the reasoning and is related to the syllogistic fallacy:

(1) You have no horns
(2) If you have not lost something, you still have it
(3) You have not lost any horns.
(4) Therefore: you (still) have horns. (From (2) and (3).)
(5) (4) contradicts (1).

Here, we can see that, theses (1), (2), and (3) are all supposed to be factual truths. However, (2) of course obtains only under the proviso that the thing in question is something you have had in the first place. Seeing that this paradox rests on a presupposition which, as it stands, is simply false, it is readily resolved[6].

In the argument mentioned above, the second premise (if you have not lost something, you still have it) has a presupposition that is you have everything. Because, if 'X' did not lose then 'X' still has. But we don't know what has of 'X'. it is not possible for us to know what has. We know that in Nyaya-logic, if 'everything' is included in a premises of an argument, no conclusion drawn from the premises. This type of argument is not valid. Here, it has a fallacy i.e. 'anupasangharee anaikantika hettavasa'[7]. So, this is not an actual paradox.

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[5] Kneale, W., & Kneale, M., The Development of Logic, P- 114
[6] Rescher, N., Paradoxes: Their Roots, Range, and Resolution, p. 12
[7] Goswami, N. C., Tarkasangraha, p. 416

Conclusion: In conclusion, it may be stated that only two paradoxes (the liar and the heap or bold man) are real paradoxes among the above mentioned four paradoxes. In the context of liar paradox, the problem is self-referential problem. In the philosophical sense, 'a liar' is 'a regular teller of lies that means whatever he utters is false. In that sense, the liar cannot say 'I am hungry' when he was hungry. Here, the problem is arisen in the particular situation that when the liar declares himself that he is a liar. Since, he asserts himself is a liar, and this is what he is asserting, it follows that he is saying something true. If he is saying something true and since he is a liar, he cannot say what is true. His sentence is true and false at the same time. This is the paradox.

The real Eubulides' second paradox is heap or bald man paradox. Hence, it can be mentioned that the both heap paradox and bald paradox are similar types of paradoxes. Now, it will be discussed regarding heap paradox with example. We can understand this paradox very well by a form of argument. Here, some abbreviate symbols will be used. Let us see, g_i represent a collection of $_i$ grains of sand and let us adopt H(g) to abbreviate the statement: "The group g of sand-grains is a heap."[8] Now, the argument form is

(1) $\sim$ H(g_1)   an observable fact
(2) H($g_{1,000,000}$)   an observable fact
(3) $(\forall_i)$ [$\sim$H(g_i) $\rightarrow$ $\sim$ H(g_{i+1})]   a seemingly evident general principal
   (3.1) $\sim$H(g_i) $\rightarrow$ $\sim$ H(g_2)
   (3.2) $\sim$H(g_i) $\rightarrow$ $\sim$ H(g_3)
   (3.999999) $\sim$H(g_i) $\rightarrow$ $\sim$ H($g_{1.000.000}$)
(4) $\sim$ H($g_{1,000,000}$)   from (1), (3.999999) by iteration
(5) (4) contradicts (2)

Here, we can see that number of (1) and (3) both premises logically entail number of (4) premise and (4) yields (5) which contradicts (2).

So, it can be said that these two paradoxes (The liar, The bold or heap) are real or actual paradoxes among the four types of Eubulides' paradoxes. A proper solution of these paradoxes will not be discussed here. This paper is attempted to show here that which paradoxes are real or actual paradoxes of Eubulides. It has been found here that only two paradoxes are actual and other two types of paradoxes (the masked man, the electra man, or the overlooked Man and the horned man) are apparently paradoxes but not actual paradoxes.

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[8] Rescher, N., Paradoxes: Their Roots, Range, and Resolution, p. 79.

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