ISSN Online : 2709-4030
ISSN Print : 2709-4022
Vol.6 No.2 2022

Aristotle's Theory of Proposition
(A Critical Appraisal)

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ABSTRACT:

Whatever human beings feel, think or imagine, they express it through language which is the combination of the sounds of mouth called words or the combination of the words which form sentences. So the problem arises that what type of sentences are correct and how they are able to communicate our inner feelings or latent thoughts and how can we distinguish correct and incorrect sentences. This need and curiosity to express oneself correctly have led thinkers to invent a technique or a science which can provide us the rules which can help us to think properly and to express our thoughts into correct form of sentences. Aristotle is regarded as the first thinker who discovered the rules of thought and invented the science of valid thought and named it logic. Here his basic theory of proposition is being presented which occupy central place in expressing valid thought as well as in logic.

***Key Words**: Distribution, Deduction, Induction, Particular, Predicate, Quality, Quantity, Subject, Universal*

INTRODUCTION

Throughout the world, hundreds of languages have been used by human beings as well as by other living beings to communicate the concepts which reside in their minds. These concepts are expressed through symbols which we call words. At conceptual level all beings have sameness of 'affects in the mind' but differ in using these symbols which signify those concepts or effects of mind. So we have created words and by combining them we form sentences and the collection of these sentences may loosely be regarded as languages. But due to certain circumstances languages sometimes create vagueness and meaninglessness and we can find that our everyday life is filled with such kinds

ISSN Online : 2709-4030
ISSN Print : 2709-4022
Vol.6 No.2 2022

of speeches and writings. Though some people lose a lot due to improper use of language but there are also others who benefit from the use of vagueness or fallacies.

This problem of ambiguity or vagueness and its consequent dose not belongs to only modern age but in fact its inception is since the development of language and it is the legacy of the ancient age that is why even two and a half thousand years before, the Greeks felt the problem and tried to develop a science which could help human beings to clear the meaning of words and remove ambiguity in sentences and make language to provide clear judgments so that we might be able to communicate our ideas, assertions and arguments in true sense and reach valid conclusions. In all this process we express our concepts in the form of words and words make sentences so it is reported that the sophists classified sentences. According to Antisthenes a sentence is "that which indicates what a thing was or is" and he also stated that "someone who says what is, speaks truly"[1]. So question, command, wish, answer were included by Protaghorasa and (phasis) assertion, (apophsis) denial, appellation and question were distinguished by Alcidamas.[2] But in the known records of history it was Aristotle who for the clarity of thought and for drawing valid results from common sentences, developed it into an organized science afterwards named LOGIC. Logic[3] being the study of the principles and methods used to distinguished incorrect reasoning from the correct one and provides us the laws according to which we can reach the truth, validity or invalidity of thought. Following these rules we can keep us away from vagueness and meaninglessness. And it was the basis for making a tool to measure validity of thought. Logical rules are not about the 'process of thought' which psychology deals, but they are about the 'product of thought' i.e. how our thought 'ought to be'. In other words we apply logical rules to determine the validity of thought, and validity or truth is the freedom from self-contradiction, and in agreement with actual facts.

The content of our thought can be expressed in the form of sentences and for the aim to achieve clarity and validity in our expressions, assertions or judgments the laws of logic provides criterion. So Aristotle differentiates between a sentence and a proposition.[4] A sentence may be in any tense i.e. past, present and future or it may expressing wishes, assertions, denials, prayers, happiness exclamations, joys, grieves etc. so Aristotle like Sophists also categorized the sentence in detail e.g. Affirmation and Negation Type, Particular and Universal Type, Simple and Compound Type, Hypothetical, Categorical and Disjunctive Type, Synthetic or analytical Type.

Aristotle takes only Affirmative or Negative Type (Quality expressing Propositions) and the Particular[5] or Universal[6] Type of propositions (Quantity describing propositions) to construct the arguments and the science of logic. And he formulate the following four types of Propositions

[1] Borchert, Donald M. (2006) Encyclopedia of Philosophy, 2nd ed. Thomson Gale, Macmillan Reference USA

[2] Borchert, Donald M. (2006)

[3] Copi, Irving M. (2003). Introduction to Logic, Pearson Education Singapur, 11th ed.

[4] Copi, Irving M. (2003).

[5] Ross,W. D. (ed) Aristotle - Works Organon, Organon III - Prior Analytics (digital edition)

[6] Ross,W. D. (ed)

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ISSN Print : 2709-4022
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1= Proposition of	Universally	Affirmative	Type
2= Proposition of	Universally	Negative	Type
3= Proposition of	Particular	Affirmative	Type
4= Proposition of	Particular	Negative	Type

Due to certain objectives e.g. he gives them special signifying symbols (A.E.I.O)

"A" signifies	Universal	Affirmative	Proposition
"E" signifies	Universal	Negative	Proposition
"I" signifies	Particular	Affirmative	Proposition
"O" signifies	Particular	Negative	Proposition

These four propositions[7] are the building blocks of argument

According to Aristotle a proposition involves two terms, a subject[8] and a predicate, each of which is grammatically represented with a noun. These nouns are the concepts (of classes or the categories) and their combination and separation determine the truth value of a proposition i.e. when their combination and separation corresponds to the combination and the separation of the thing they represent. Every such sentence must have the same structure: it must contain a subject and a predicate and must either affirm or deny the predicate of the subject. Thus every assertion is either the affirmation or the denial of a single predicate of a single subject.1 There is a connecting and linking thing that is called Copula and it is the very link that establishes relation between the subject and the predicate term.

So in Aristotelian logic there are three components of a proposition namely the subject, the predicate and the copula. Each one of them is called a Term and each term expresses a concept of mind in the form of a word e.g. "CAT" or "DOG" or "TABLE" or "MAN". When we use words and the proper arrangement of the words form a sentence or a proposition. Aristotle holds the view that a proposition is a sentence which only affirms or denies something of something, and this is only universal or particular. It is only in the present tense, in universal or particular in quantity and affirmative or negative in quality, and only in present. The subject predicate form of proposition in Aristotle's logic is so restricted that he regarded it as his first task to formulate standard form categorical proposition. It seemed then that the important difference between propositions were those marked by the occurrence and non-occurrence of the negative particle and by the quantifiers, 'all' and 'some'.

[7] Ross,W. D. (ed)

[8] Ross,W. D. (ed)

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ISSN Print : 2709-4022
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So the Aristotelain Proposition by qualifying the conditions of having "subject", "predicate", "copula" and having Quality[9] and quantity[10] signified by "All" "Some" "None" takes the following form e.g.

Components	**Subject**	**Copula**	**Predicate**
Proposition	**Man**	**is**	**mortal**

In the above formation each word in Aristotle's sense is a "Terms" instead of words. He explains that a proposition is a combination of the "Terms".

A-1. The Subject (loosely, It is the doer of an action)

A-2. The Predicate (on it the action is to be done)

A-3. The Copula (It is the liking term)

So by dint of the above rules Aristotle made only four standard categorical forms of proposition.

Quantifier	**Subject**	**Copula**	**Predicate**

(Quality + Quantity Prop.)

Universal Affirmative
A = All Dogs are Chairs

Universal Negative
E = No Dogs are Chairs

Particular Affirmative
I = Some Dogs are Chairs

Particular Negative
O = Some Dogs are-not Chairs

The above four propositions are the Standard Form of a Categorical Propositions and they as determined by the quantity (universal and particular) and by the quality (affirmative and negative). So both terms in a proposition are classes which can be so related in at least three ways:

[9] Emmens, S. H. A, (1865) Treatise on Logic Pure and Applied, Virtue Brrothersand Co. London,

[10] Emmens, S. H. A, (1865).

ISSN Online : 2709-4030
ISSN Print : 2709-4022
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1- All members of one class may be included as a whole into another class. Thus the class of all cats is wholly included (or wholly contained) in the class of all mammals.
2- Some members, not all may be included in another class. Thus the class of all students is partially included (or partially contained) in the class of all females.
3- Two classes may have no members in common. Thus the class of all triangles and the class of all circles may be said to exclude one another.

Since the terms (subject and predicate) in a proposition are exponents of classes or members of classes and the Copula shows their affirmation or denial of participation of one class members into the other so there arise the concept of whole class or partial class this is termed in logic as Distribution of Terms in proposition.

"Distribution is an attribute of the terms (subject and predicate) of propositions".

"A term is said to be distributed if the proposition makes an assertion about every member of the class denoted by the term; otherwise, it is undistributed"[11]

So the distribution of terms in all the four propositions are as follows:
In the universal affirmative proposition

Quintifier Subject Copula Predicate

Universal Affirmative
A = All Dogs are Chairs

The subject is taken as a whole so here Subject term is the distributed term

Universal Negative
E = No Dogs are Chairs

Here both classes e.g the Subject class and the predicate (the attribute of subject) have no participation and excluded from one another so in E Proposition both terms are distributed terms

Particular Affirmative
I = Some Dogs are Chairs

In this "I" (particular affirmative) proposition both classes e.g. the subject and the predicate have not been taken as a whole but as a part so both terms are undistributed

Particular Negative
O = Some Dogs are-not Chairs

[11] Hurley, Patrick J. A (2010) Concise Introduction to Logic, Wadsworth USA,11th ed.

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ISSN Print : 2709-4022
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In this "O" (particular negative) proposition the subject class has been taken as a part but the object class signifies the whole class so the predicate class is distributed one.

Due to these propositions Aristotle developed the whole Science of Logic which aims at *"the study of the principles and methods used to distinguished incorrect reasoning from the correct one and provides us the laws according to which we can reach the truth, validity or invalidity of thought".*[12] The above propositions are not the whole system rather they are only the building blocks of the whole system of logical argumentation. By these building blocks Aristotle developed two types of reasoning and argumentation namely The Inductive type of argumentation which is called The Inductive Logic and the other is deductive type of argument which is called Deductive Logic.

Logic

Inductive Logic **Deductive Logic**

1= First The Inductive Logic is arriving at the Universal Propositions by observing the Particular facts from common life. It starts from individual or particular facts to general Principles. It generalizes the particular instances e.g. if one has seen crows in black colour throughout life the one conclude that

.: all crows are black .

It is generalization of particular instances. in simple words it moves from "Some" to "All" propositions. This process of moving from "Some" to "All' or from Particular to Universal is called "Generalization" and includes "Inductive Leap". This means move from observed facts to unobserved facts. It is concerned with Matter of Thought so it also is called Material Logic.

Induction through observed facts establishes general propositions and its generalization provides us the Universal Propositions which the deductive logic takes for granted.

2= The Deductive Logic. The function of deductive logic is to show whether the premises provide ground for the truth of the conclusion. In a valid argument it clarifies the relationship among premises and conclusion and enables us to distinguish the valid and invalid argument. Only the deductive argument can claims that its propositions can provide conclusive grounds for its conclusion. It is important to note that *"if deductive argument is not valid than it must be valid and if it is not invalid it must be valid."* But in inductive argument this certainty cannot be found its results are only probabilities. Only a single instance can refute the generalization of the conclusion. The deductive argument moves from general to particular so we can find certainty in this type of argument. In the propositions the placement of terms in an standard form is most important and due to these placement we found Four figures and Moods in Syllogism

In constructing the syllogistic argument, according to Aristotelian Rules only three propositions are allowed in which only three terms each being used twice form the syllogistic argument. The common term which is called middle term which can be found in the major and minor premises plays vital role in forming the structure of syllogistic argument. Analysis shows that the middle term can take the

[12] Copi, Irving M. (2003).

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ISSN Print : 2709-4022
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following possible places in the syllogistic argument. This formation is called the Figures of Syllogism.[13]

Figure 1	Figure 2	Figure 3	Figure 4
M P	P M	M P	P M
S M	S M	M S	M S
S P	S P	S P	S P

It must not be ignored that Aristotle presented only three Figures.[14] The remaining fourth figure is latter addition by Galen. But now all the four figures are mentioned in the books regarding the subject.[15] In syllogism the conclusion is drawn on the bases of major and minor premies and the conclusion is the third one so an argument in syllogism comprises on three premises. We may form it e.g. AAA, AEE, EAE, AOO, etc. each one is premise of a syllogistic argument. Each one among the three shows a premises. These groups are called the Moods of Syllogism. We, by multiplying all the four proposition with the Figures and moods can get 256 propositions out of which on sixteen are valid and the remaining all are invalid. So in Aristotelian logic the propositions play the main role.

Conclusion

Aristotle laid the foundation of logic from defining the concept which we express in words and he gave them the name of "Terms" so according to him all concepts are terms. Then by these terms we form sentences he classified all sentences and and picked up only two types of sentences based on quantity or qualities and by these sentences he formed specially used sentences called propositions .i.e.

A =	Universal	affirmative	proposition
E =	Universal	negative	proposition
I =	Particular	affirmative	proposition
O =	Particular	negative	proposition

These special sentences (proposition) being a combination of two terms namely the subject and the predicate and having a linking term called copula make a complete proposition to be used in the logic to form an argument.

[13] Hurley, Patrick J. (2010)

[14] Jenkinson A.J.,(trans) Aristotle, Organon, Prior Analytic (ebook)

[15] Copi, Irving M, (2003)

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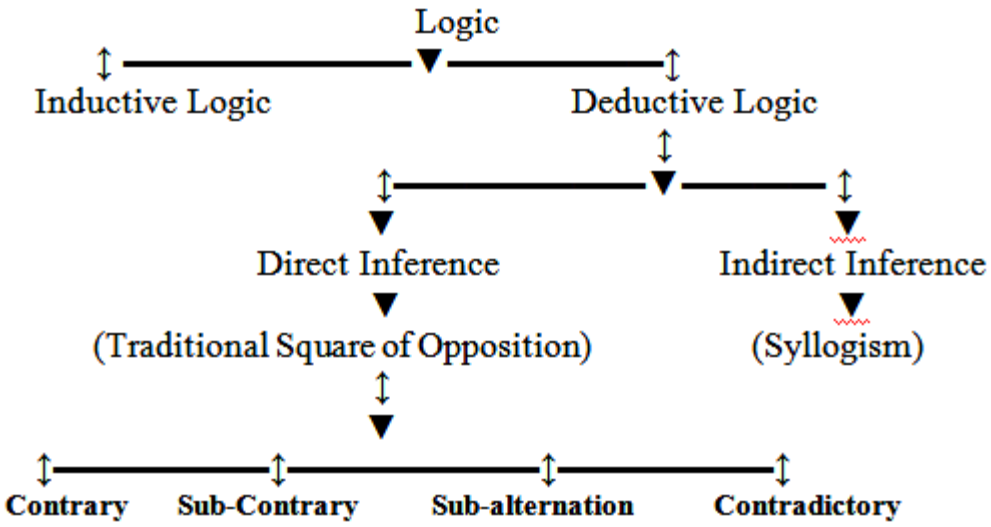
At least one or two propositions and a conclusion make an argument. In forming argument the placement of terms (Major, Minor, Middle) plays an important role. The term which make a link between two propositions is called the middle term and is used in the major as well as in minor premise. And the subject of the conclusion makes its place in the minor premise and recognized as minor term but the predicate of the conclusion goes to the major premise and is called major term, through this placement of terms and arrangement of prepositions we form an argument in the deductive logic. There are also two branches of Logic namely The Inductive and the Deductive. But Aristotle manly focused on the later. This later one has also two types, first is direct inference which can be shown as the Traditional Square of Opposition and we deduce result from one preposition with the other conclusion and by only two prepositions we get four relationships (Contrary, Sub-Contrary, Sub-alternation, Contradictory)and the second is indirect inference which comprises three propositions and is called syllogism.



Criticism

Though, before Aristotle many philosophers had thrown light on the principles of thinking but he was the first philosophers who provided the laws of thought in the form of an organized Science (which suits to only him) and made a great systematic knowledge of distinguishing valid thought from invalid one. And Aristotle's logic ruled over two thousand years but some criticisms have been made by medieval and post-medieval logicians on it. The critics say that Aristotle's logic is basically a term logic i.e. Terms are the building bricks of proposition and propositions are the building blocks of syllogism.

But modern logic is not term logic, in modern logic; whole proposition may be taken just as a variable. But Aristotle's logic is the evaluation of terms and terms designate classes, so that is why, traditional square of opposition is opposed chiefly in modern logic. George Boole points out the imperfection in the square of opposition. If we take 'I' proposition 'some unicorns have horns', which could be inferred by its correspondent 'A' proposition 'all unicorns have horns'. Here problem arises that in 'I' proposition, we have to take at least one instance, whose existence we have to assert. So 'I' proposition has

existential import. If 'I' proposition has existential import than its correspondent 'A' must have too. This problem led the square of opposition in doubtful condition. But to secure its previous position Boole suggested the concept of 'pre-supposition' that we must assume or presuppose that the corresponding universal proposition never refers to any empty class. But the resolution of the 'blanket existential presupposition' imposed many intellectual errors and Boolean interpretation doesn't have to assume that there are any members in any class. Modern theory abandoned Aristotelian concept of empty class. Modern logic takes universal proposition as having no existential import. 'All unicorns have horns 'and 'no unicorns have wings' may both be true in modern logic even if there are no unicorns. But if there are unicorns then 'I' proposition 'some unicorns have horns' is false and also the 'O' proposition 'some unicorns don't have wings'. In modern logic, variables are used instead of terms and propositions, and modern logicians mathematically deduct the conclusion from given variables. So the structure of proposition in modern logic is not restricted to subject, predicate and copula, as it was in the Aristotelian logic. But we may conclude that the Aristotelian logic is not a failure but it is the base and all the modern criticism and new branches of logic are due to the traditional logics new dimensions or the reacting on the old logic.

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