VIVEKANANDA COLLEGE
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NAAC ACCREDITED 'A' GRADE

Topic: Singular Proposition

Course Title: Western Logic - II

Paper: PHIA - CC9

Unit:

Semester: 4th Semester

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Quantification theory.

There are many valid arguments which cannot be tested by using logical techniques. For these valid arguments we need a different analytical tools. In twentieth century, Gottlob Frege (1848-1945) a German logician developed logic with quantification. He is the founder of modern logic. His quantification has been called "the deepest single technical advance ever made in logic".

Previous logical techniques is only applicable to those arguments which validity depends entirely on the simple statements that are truth functionally combined into compound statements.

But there are some other kind of arguments which are not built with propositions that are not compound. For this type of argument previous techniques are not adequate. For example,

All humans are mortal Socrates is human. ∴ Socrates is mortal.	→ This argument is valid.

But we can symbolize it as

A → All humans are mortal.
H → Socrates is human.
∴ M → Socrates is mortal.

↓

It is seems invalid because the validity of this argument is intuitively clear. That means the validity depends on the inner logical structure of its premises. But the inner logical structure cannot be revealed by the symbolization.

↓

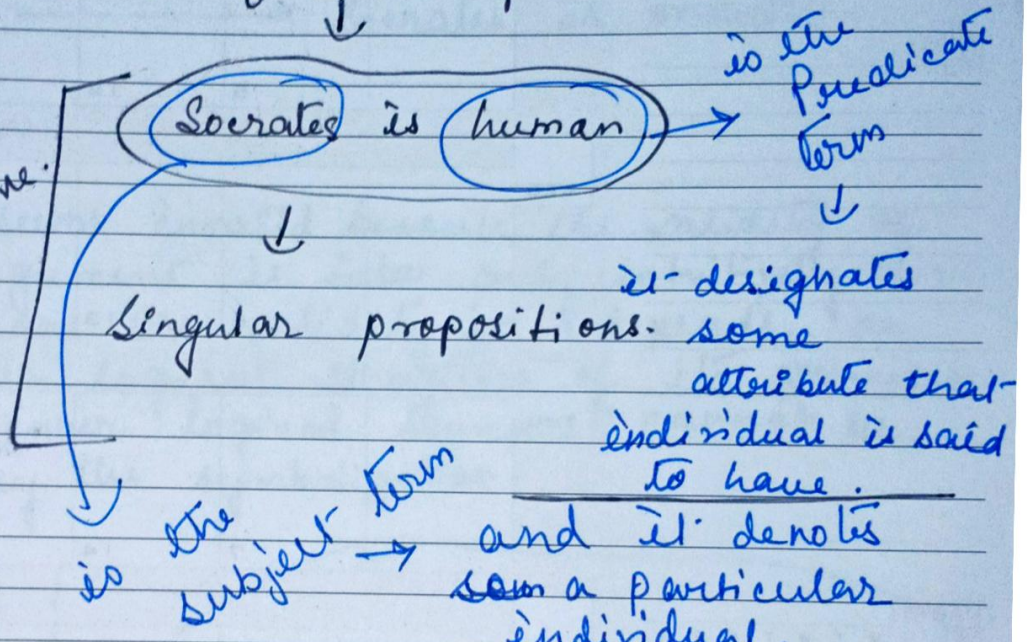
are not compound. → need quantification theory

↓

interpret non-compound statements without loss of meaning.

Singular propositions :-

Simple kind of non-compound statement



asserts that a particular individual has some specific attributes.

There are 2 his types of assertions may true or false.

Socrates is fat / Socrates beautiful.

ets.

Similarly, the same predicate term can occur in different singular propositions.

↓.

Aristotle is human. → True.
Brazil is human → False.

↓.

An individual in this symbolization can refer not only to persons, but to any individual things, such as a country, a book or anything of which an attribute can be predicate.

Such as: human or heavy.

The attribute is not necessary that the attributes always have to be adjective, like mortal or wise, it can be noun also like human.

SUN 3

= Predicates can also be verbs, "~~Aristle~~ 'Aristotle writes'.

↓

It can be used alternatively as. "Aristle is a writer."

ii) To denote ~~a~~ individuals, we use small or lowercase letters from a through w.

↓

~~Hence~~ these symbols are individual constants.

↓

denote by the first letter.

iii) We use capital letters to symbolize attributes ~~that~~ ~~a~~ individuals may have

↓.

First ~~letter~~ letter should be used.

↓.

H ~~a~~ for human, M for mortal, F for fat etc.

To symbolize a singular proposition by writing an attribute symbol immediately to the left of an individual symbol.

Socrates is human.

Hs.

↳ The pattern in common:

If each begins with the same attribute symbol, H and is followed by a symbol for some individual, s or a or b or c.

We could write the pattern as 'H_'

↓

the dash to the right of the predicate symbol is a place marker for some individual symbol.

This pattern we symbolize as Hx.

↓

x is called individual variable.

use the pattern to symbolize the common pattern of all singular propositions that attribute 'being human' to some individual.

H(x) → individual variable.

↓

place marker → indicating where the various individual letters may be written.

called a propositional function. → it is an expression.

↓

i) it contains an individual variable
ii) becomes a statement when an individual constant is substituted for the individuals variable.

There are an unlimited number of such propositional functions.

We call these propositional functions simple predicates

↓

it is used to distinguish more complex propositional functions.

A simple predicate is a propositional function that has some true and some false instances, each of which is an existential singular proposition.