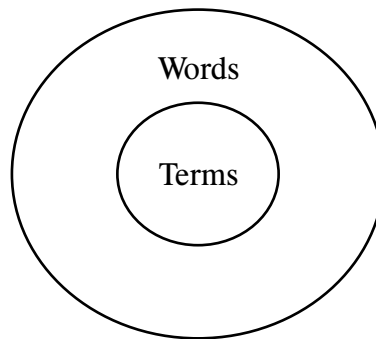# Terms

What is a Term?

A term is a word or group of words which is either a subject or a predicate of a proposition. If a word or a group of words is neither a subject nor a predicate of a proposition, then it is not a term. In the proposition, "All logicians are mathematicians", 'logicians' and 'mathematicians' are terms but 'all' and 'are' are not terms. For they can neither be subject nor predicate of the proposition. Thus, whereas all terms are words, all words are not terms. This is because all terms are classes for the traditional thinkers.

Words

Terms

(Table - 1)

A term is a word or group of words which has the following characteristics:

i.   it is either a subject or a predicate of a proposition, and

ii.   it must have a definite meaning of its own.

The word 'term' comes from the Latin word terminus, a limit or boundary. Terms limit the movement of the thought. Proposition is a unit of reasoning and terms are its constituents. In each categorical proposition (A, E, I, O) there are two terms, a subject and a predicate.

Two important aspects of a term are:

　　　1.   Denotation and Connotation

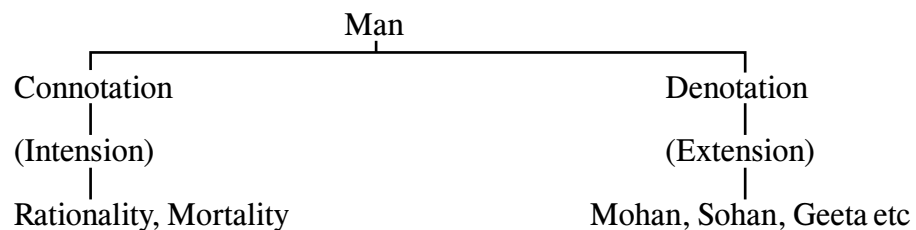　　　2.   Distribution

Denotation and Connotation

The aim of logicians is to differentiate good reasoning from bad, and since arguments are expressed through language, our use of language should be correct. The wrong use of language while making

reasoning will make it only fallacious. In order that our reasoning remains straight and correct the meaning of the terms used in the reasoning should also be absolutely clear. The terms whose meaning is not clear or is partially known must not be used in the arguments. The logicians have suggested two different techniques, viz., denotation and connotation for knowing the meanings of terms.

Denotation of a term consists of the thing or object to which it applies and its connotation consists of the attributes which it implies. So a term denotes class membership and it connotes essential attributes. The term 'man' denotes all human beings to which it is applicable, that is, Ram, Sohan, Sita, Meera and in fact all of us. Rationality and mortality are essential attributes possessed by all men. Nothing can be called a man, if it does not possess these two characteristics and anything possessing these two characteristics must be called a man.

A term in a categorical proposition represents a class. A class is a collection of all objects that have some specified characteristics in common. The meaning of a class (i.e., a term) can be known in two ways. Firstly, by the members belonging to that particular class; and secondly, by knowing all the essential qualities possessed by the members of that class. For example, in the class of 'man' we refer to all 'human beings' as members, and 'rationality' and 'mortality' as the essential characteristics possessed by them.

The connotation of a term is the characteristic or set of characteristics which are such that these characteristics determine the object(s) to which the term intends and which are therefore sufficient to distinguish that object(s) from other objects. The denotation of a term refers to the extension to which it can be referred. The connotation, on the other hand, refers to the intension which a term intends. The extension of a term is given by specifying the class members what the term denotes (the objects, the things, it refers to). The intension of a term is specified by listing the characteristics, properties, that the term connotes. For example, to specify the extension and intension of the term 'man' you might provide the following illustration:

```
                              Man
            ┌──────────────────┴──────────────────┐
       Connotation                           Denotation
            │                                     │
       (Intension)                           (Extension)
            │                                     │
   Rationality, Mortality                 Mohan, Sohan, Geeta etc
```

(Table - 2)

The characteristics or qualities referred by the term do not always refer to all qualities, essential or accidental. Connotation indicates only essential qualities. For example, the essential characteristics of term 'man' are only 'rationality' and 'mortality'. Essential characteristics are those bare minimum qualities without which the existence of a thing, person or an object is not possible. The accidental characteristics of 'man' are many like a man has two hands, two legs, two ears etc. There are men who do not have hand or leg. Man can exist without these accidental characteristics. But we will not call living being a man if he is immortal or if he is irrational. Rationality differentiates a man from 'animals', 'mortality' differentiates a 'man' from 'super human beings'.

Not all terms, however, have both denotation and connotation. Only the general terms (which are classes) have both connotation and denotation. The proper names like Ram, Sita, Mohan etc. do not have proper connotation. 'Ram' for example can refer to the student of standard X in the Y school or it can refer to a boy working in a factory or to a mythical character of Ramayana. The imaginary objects also do not have proper denotation. For example, 'centaur' has no reference, and thus has no extension. At the same time there are things which can be only known through extension and not through intension. For example, we can know the colors, red, yellow etc. only by looking at them. A blind man can never know the colours by stating or describing their characteristics. It is also true that children learn meanings of terms quickly and correctly by looking at the objects and things. From the view point of logicians, however, connotation of a term is more basic and fundamental than denotation. There are classes which are empty like class of the 'square round objects'. Neither any example of this class is there nor can it be found. Yet the class is meaningful because of its connotation.

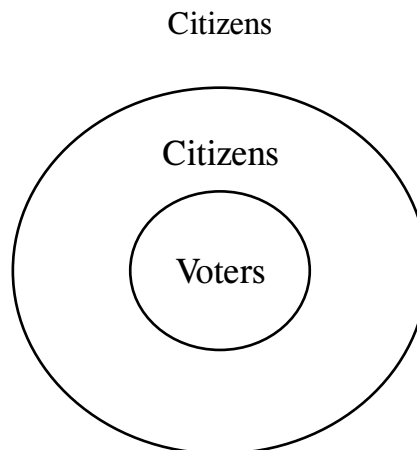## Relation between Connotation and Denotation

Connotation and denotation are related to each other by inverse variable relation. This means if connotation increases denotation decreases. Similarly, if connotation decreases, then denotation increases. More qualities in a class means less members who possess them. For instance, suppose there is class of 'automobiles', then all the vehicles are its members. The class of 'four wheeler automobiles' has lesser members than the previous class. The class of 'Indian made four wheeler automobiles' will have even lesser members. Further, the class of 'Indian made four wheeler heavy vehicle automobiles' will have still lesser members. This way increase in number of qualities will reduce the number of members.

However, increase and decrease of denotation (members of class) does not guarantee decrease or increase in connotation. For instance, with the increase of human population the connotation of the term 'man' like 'mortality' and 'rationality' does not decrease. But certainly both denotation and connotation do not increase or decrease together. Out of these two it is connotation and not denotation which is more fundamental and it determines the denotation very satisfactorily.
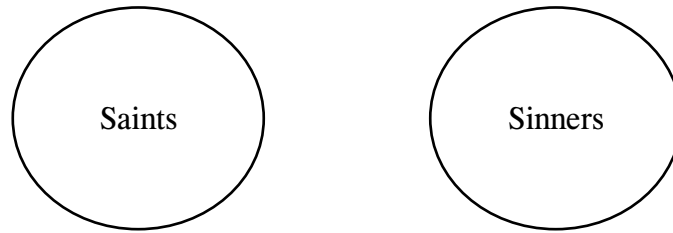
Distribution of terms

A term is said to be distributed if it refers to all the members of its class. For example, in the proposition, "All men are mortal", the term 'man' is distributed for it refers to all the members of the class man. Likewise, in the proposition, "No men are immortal" the term 'men' is distributed for it excludes 'all men' from the class of 'immortal'. If, on the other hand, a term refers to some or few members of a class, then it is called undistributed term. In the proposition, "Some men are tall", the term 'man' is undistributed for it refers to only some members of the class 'men'. In other words, a term is distributed when it includes or excludes all the members of a class, and if a term includes or excludes only some members of a class, then it is undistributed.

In a universal affirmative A proposition, "All S is P", subject term 'S' is always distributed but predicate term 'P' is undistributed. In the proposition "All voters are citizens", the term 'voters' refers to 'all voters' but the predicate term 'citizens' does not refer to all citizens (it refers to only some citizens, that is, only those citizens who are voters), hence it is undistributed. Look at the following diagram: here a class is represented by a diagram
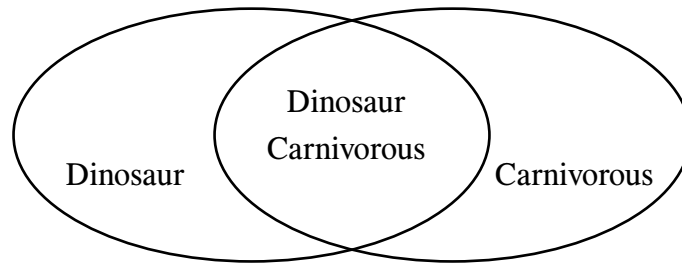
Citizens

(Table - 3)

In a universal negative E proposition, "No S is P", both subject and predicate terms are distributed. In the proposition, "No saints are sinners", all members of the class 'sinners' are excluded from all members of the class of 'saints'. Hence both subject and predicate terms are distributed in E proposition.
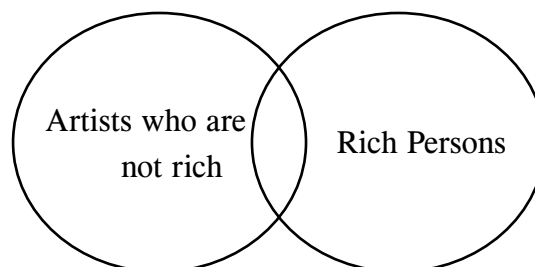
(Table - 4)

In a particular affirmative I proposition, "Some S is P", none of the terms is distributed. In the proposition, "Some dinosaurs are carnivorous", the subject term 'dinosaurs' is undistributed. The predicate term 'carnivorous' also does not refer to all the members of the class of the carnivorous animals (there are carnivorous animals who are not dinosaurs). Thus, both subject and predicate terms are undistributed in I proposition.

(Table - 5)

In a particular negative, O proposition, "Some S is not P", subject term is undistributed but predicate term is distributed. "Some artists are not rich persons" distributes its predicate term 'rich persons' but not the subject term 'artists'. The subject term 'artists' here refers only to some artists, so the subject term in O proposition is undistributed but the predicate term 'rich persons' is distributed. According to this proposition the entire class of 'rich persons' is excluded from the class of some 'artists'. Hence, the predicate term is distributed in the O proposition.

(Table - 6)

The position of terms (as distributed or undistributed) in the four categorical propositions A, E, I, O is as follows:

Proposition	Subject	Predicate
A	Distributed	Undistributed
E	Distributed	Distributed
I	Undistributed	Undistributed
O	Undistributed	Distributed

(Table-7)

The quantity of a proposition determines whether a subject term is distributed or not. If quantity of the proposition is universal as in A and E propositions, then subject term is distributed. If quantity of the proposition is particular as in I and O proposition, then the subject term is undistributed.

Quantity of a proposition :

Universal   Subject term distributed

Particular   Subject term undistributed

To determine whether predicate term is distributed or not, one looks to the quality of a proposition. In affirmative propositions A and I predicate term is always undistributed, whereas in negative propositions E and O predicate term is always distributed.

Quality of a proposition :

Affirmative   Predicate term undistributed

Negative   Predicate term distributed

Distribution of terms partially determines validity / invalidity of syllogistic arguments.

Questions

1. Determine distributed and undistributed terms in the following propositions:
   a. All computers are helpful devices.
   b. No bats are vegetarians.
   c. Some movies are comedies.
   d. Some cars are not expensive things.
   e. No politicians are honest persons.
   f. Some auto mechanics are trustworthy people.
   g. Some football players are not tall persons.
   h. All cats are mammals.
   i. Some politicians are not socialists.
   j. No soldier is coward person.

2. Explain the notion of a term. Is every term a word? Or is every word a term? Support your answer with suitable examples.

3. Explain distribution of terms. Which terms are distributed in four types of categorical propositions? Give examples.

4. Quality of a proposition determines whether the predicate term of the proposition is distributed or not. Do you agree? If yes, explain.

5. Quantity of a proposition determines whether subject term of the proposition is distributed or not. Do you agree? If yes, explain.

6. Explain denotation and connotation of term by giving suitable examples.

7. Explain and illustrate relation between connotation and denotation of terms.

8. Terms which represent proper names do not have proper connotation. Explain citing examples.