# CHAPTER THREE: LOGIC AND LANGUAGE

- Language is a body of standard meanings of words and the form of speech used as a means of expressing the feeling, emotion, desire, thought in a consistent pattern of communication
- Language requires symbol such as words, sounds, gestures, signs for the purpose of communicating meanings
- It is the tool of communication and the means of expressing ideas.
- It is the way of conveying information and evoking feelings.

# The Functions of Language: Cognitive and Emotive Meanings

- There are, two functions of language

1. Cognitive meaning:- helps to convey information and communicate the meaning of contents

- ✓ Thus it is informative function b/c it provide information about something
- ✓ It can be judged as true or false

2. Emotive meaning helps to express or evoke feelings.

- ✓ Used to express negative or positive feeling, liking or disliking
- ✓ They cannot be evaluated as true or false

## Examples

1. *The first written constitution of Ethiopia was formulated in 1931. However the first federal constitution is effected since 1995.*
2. *Death Penalty is the final, cruel and inhuman form of all punishments, where hopeless prisoners are taken from their cells and terribly slaughtered.*

# Cont…

- Emotively charged statements usually have both cognitive and emotive meanings
- emotively charged statements have to do with **value claims**
- But, since logic is mainly concerned with right reasoning emotively charged statements are not important in logic
- ***Value claim*** is a claim that something is good, bad, right, wrong, or better, worse, more important or less important than some other thing.
- Hence, it is important to separate value claims from emotive meanings of emotively charged statements to secure the purpose of logic

# Cont..

- Emotive meanings in **advertising industries-** though to convey information about products, most of the time elicits favorable emotions or reacted by emotional responses.
- **For example**: "*Coca cola is the best cheerful soft drink. Whose taste is so unbelievably remarkable that you won't stop drinking it all day along! And best is for you and not for anyone else!*

- **Intentional and extensional meaning of terms**
  - **Terms made up of words - serve as a subject of a statement**
  - **Terms includes:**
    - ✓ **proper names,**
    - ✓ **common names**
    - ✓ **descriptive phrases**
  - **Words - symbols and the entity they symbolize- meaning.**
  - **terms have two kind of meaning :**
    - ✓ **Intensional meaning**
    - ✓ **Extensional meanings**

# Cont..

## ❑ Intentional meaning of terms

- **Attribute of the term being connoted**
- **subjective : vary from person to person.**
- **To avoid subjective meaning - conventional connotation**
- **can be expressed in terms of increasing and decreasing intentions**
  - **Increasing intention:**
    - ✓ **each term in the series connotes more attribute than the one preceding it.**

    **Decreasing intention:**

    ✓ **each term in the series connotes less attribute than the one preceding it.**

# Cont…

- **Extensional [denotative] meaning of terms**

- **Refers to the members that the term denotes**
- **remains the same to all but**
- **may be changed with the passage of time – Empty extension.**

- **can be expressed in terms of increasing /decreasing extension.**
  - **Increasing extension: each term in the series denotes more members than the one preceding it**
  - **Decreasing extension: each term in the series denotes less members than the one preceding it**
- **Intentional meaning determines extensional meaning of terms**

**Example**

***Increasing intension****: animal, mammal, feline, tiger*

***Increasing extension****: tiger, feline, mammal, animal*

***Decreasing intension****: tiger, feline, mammal, animal*

***Decreasing extension****:animal, mammal, feline, tiger*

# Cont..

- The order of increasing intension is usually the same as that of decreasing extension.
- Conversely, the order of decreasing intension is usually the same as that of increasing extension.
- There are, however, some exceptions. Consider the following series:
- *Unicorn; unicorn with blue eyes; unicorn with blue eyes and green horn; unicorn with blue eyes, green horn, and a weight of over 400 pounds*
- Each term in this series has empty extension; so, while the series exhibits the order of increasing intension,
- it does not exhibit the order of decreasing extension.

# Cont..

- **Intensional definition of a given term usually determines its extensional definition**
- in the sense that when someone gives us clues about the attributes or qualities of a given term,
- we can easily identify the class or categories, which satisfy the above attributes
- Another important point is **empty extension:**
- **Which is t**erms have no classes, members or categories **or**
- Things that don’t have current objective reference which includes myth , spiritual realities, extinct creatures don’t have extension or class
- Eg **‘Satan’, ‘Unicorn’, ‘God’ , ‘dinosaur’**

- Definition is a technical and structural organization of words in explaining the meaning of a given term.
- every definition consists of two parts: the *definiendum* and the *definiens*.
- The ***definiendum (Dfd)*** is the word or group of words that is supposed to be defined
- the ***definiens (Dfs)*** is the word or group of words that does the defining.
- Eg man means all human beings
- ***In this case*** *Man is Dfd and* ***all human beings is Dfs***

# The Types and Purposes of Definitions

## *1) Stipulative Definitions*

- A stipulative definition assigns a meaning to a word for the first time
- This may involve either coining a new word or giving a new meaning to an old word.
- The purpose of a stipulative definition is usually to replace a more complex expression with a simpler one
- It is purely arbitrary assignment of meaning to the term

# Cont..

- For example if archeologist found a new fossil which dates back million years, they assign name for the new discoveries
- Eg the name lucy or dinknesh is given through stipulative definition
- If cross breeder cross breed d/f species and find new species the need to give new name
- Eg male tiger and female lion=TIGON
- male lion and female tiger‘‘= LIGER
- Again it is widely used in military to set secret code
- Stipulative definition cant be judged as true or false

## *2) Lexical Definitions*

- Dictionary definitions are all instances of lexical definitions
- It is used to report the meaning that a word already has in a language
- It can be judged as true or false
- It is use to avoid ambiguity of words
- A word is ambiguous when it can be interpreted as having more than two or more distinct meaning in a given context.
- Eg right, race, bank, light are ambiguous
- Eg bank means either financial organization or slope bordering river

- The purpose of a précising definition is to reduce the vagueness of a word.
- an expression is vague if there are borderline cases or unclear or if it difficult to draw a line between the things
- Eg rich, poor, short, tall are vague words
- Can you draw a boundary or a line b/n rich and poor. Impossible
- Poor‘ means having an annual income of less than $4,000 is an example of précising definition
- Tall means a person having a height of >= 1.8 m

### *4) Theoretical Definitions*

- A theoretical definition assigns a meaning to a word by suggesting a theory that gives a certain characterization to the entities that the term denotes
- Like stipulative definition theoretical definition cant be judged as true or false
- b/c theoretical definitions function as proposals to see or interpret some phenomenon in a certain way.
- Thus proposals have no truth value
- Eg. 1. According to Kinetic theory of heat :- heat‘ means the energy associated with the random motion of the molecules of a substance.“
- 2. force equals mass times acceleration

## *5) Persuasive Definitions*

- The primary purpose of persuasive definition to produce a favorable or unfavorable attitude toward what is denoted by the definiendum.
- Value laden words are emotively charged words which are important in persuasive definition
- They cant be evaluated as true or false. Persuasive is not really concerned with revealing the true nature of the concept defined but of influencing attitude by using phrases that appeal to one's emotion.
- E.g. Abortion means ruthless murdering of innocent human beings
- For Marx religion means opium of the people
- Democracy is a government of the weak, inferior race.

# The Extensional (Denotative) Definitional Techniques

- An ***extensional definition*** is one that assigns a meaning to a term by indicating the members of the class
- There are at least three ways of indicating the members of a class:

➢ **demonstrative or ostensive definitions**

➢ **enumerative definitions and**

➢ **definitions by subclass**

- *Demonstrative (Ostensive) Definitions* are probably the most primitive form of definition.
- such a definition is called definition by **pointing**.
- Here are some examples: *"Chair"" means this and this and this- as you point to a number of chairs, one after the other.*
- Demonstrative definitions are limited in **space** and **time**
- It is appropriate to use this definition if we want teach foreigner who don't understand our language

- *Enumerative Definitions* assign a meaning to a term by **naming the members of the class** the term denotes.
- In this case we name individually

*Eg. "Actor"" means a person such as Abebe Balicha, Samsom Taddesse, or Mahder Assefa*

- *Atlet means a person such as haile g/sillassie , kenenisa bekele, meseret defar , tirunesh dibaba ……..*

## *Definition by Subclass*

- It assigns a meaning to a term by naming subclasses of the class denoted by the term.
- ***In this case we name in group***
- ***Eg*** *"Fictional work"" means a poem, a play, a novel, or a short story*.
- Professional person means person such as doctor, lawyer, teacher, architect …..

## The Intensional (Connotative) Definitional Techniques

- An *intensional definition* one that assigns a meaning to a word by indicating the qualities or attributes that the word connotes.
- There are at least four strategies that may be used to indicate the attributes/qualities that a word connotes.
- These are: **synonymous** definitions, **etymological** definitions, **operational** definitions, definitions by genus and difference

## *Synonymous Definition*

- Synonymous Definition is one in which the definiens is a single word that connotes the same attributes as the definiendum-
- that the definiens is a synonym of the word being defined.

**Examples:**

“Physician” means doctor.

- “Observe “means see
- Skinny means thin
- Intentional means wilfull

# *Etymological Definition*

- Etymological Definition assigns a meaning to a word by disclosing the word‘s ancestry or root words
- Eg. the word —philosophy comes from two Greek words: —philo and —sophia, which mean —love and —wisdom respectively

**Operational Definition**

- Operational Definition assigns a meaning to a word by specifying certain experimental procedures
- It carried out by performing action, operation, activities and procedure that thee word applies
- Thus without operation no operational definition

Eg One substance is „„harder than“ another if and only if one scratches the other when the two are rubbed together.

A solution is an „„acid“ if and only if litmus paper turns red when dipped into it.

## *Definition by Genus and Difference*

- Assign meaning by to the term by identifying genus term and one or more difference words
- Species term + specific difference + genus term = definition by genus and difference
- Genus = is a relatively larger classes
- Species = is relatively smaller sub-class or smaller of the genus
- Difference or specific difference is = the qualities or attribute that distinguish varies species within the genus
- For example, we may speak of the genus animal and the species mammal,
- If the genus is mammal and the species may feline,
- if the genus is feline and the species may be tiger.

# Cont…

Example;- 1. Man is a *rational animal*. (“Animal” is the genus because it is the larger class to which the concept “man” belongs. “Rational” is the difference because it is what differs man from all other animals.

2. Girl means a female person

3. mother means female parent