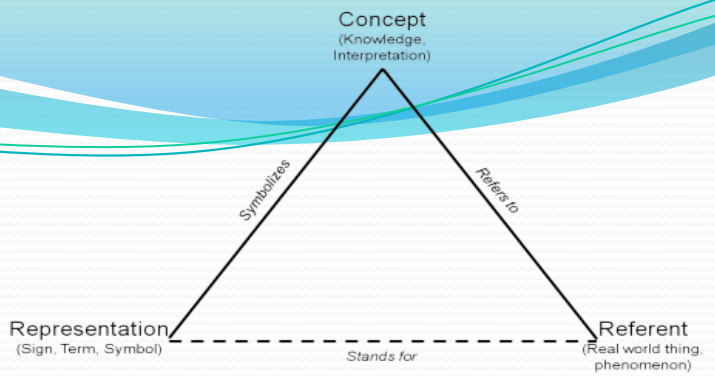
Definitions in Terminology

During the previous theoretical classes we have studied:

- **Concepts** and all their characteristic features and
- **Terminological Unit** (definition, characteristics and Term formation),

But there is another important element which helps us to understand the terminological unit and the concept behind it. This is the representation of the concept via an illustration or a DEFINITION (we, as intermediate users of terminology are interested in definitions, because they represent a **linguistic entity**).

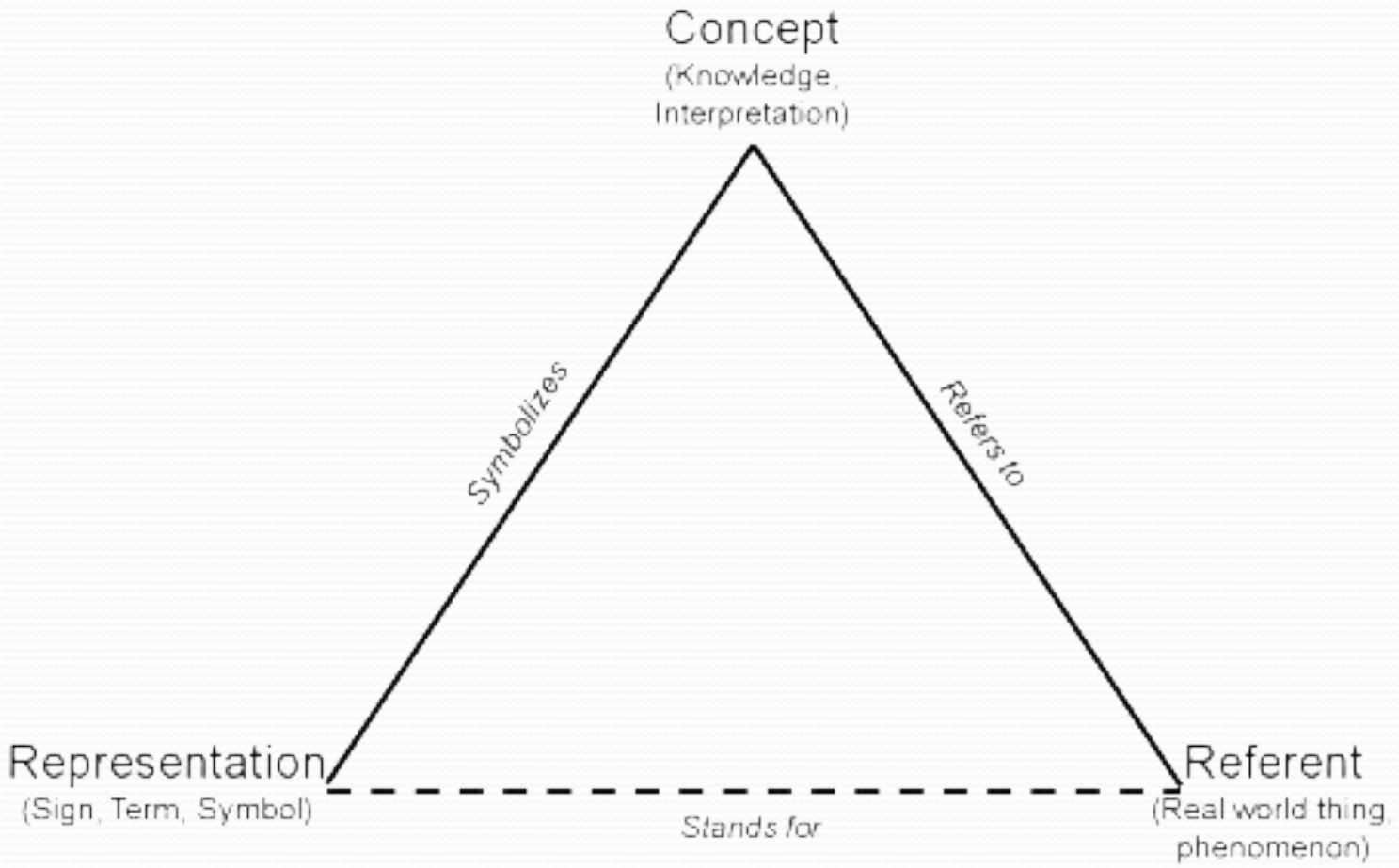


Thus, we have already studied:

- **Concepts** as cognitive entities. Thought, knowledge, and communication.
- **Terms** as communicative entities: simple and complex terms, abbreviations, formulas, symbols.
- **Definitions** as linguistic entities.

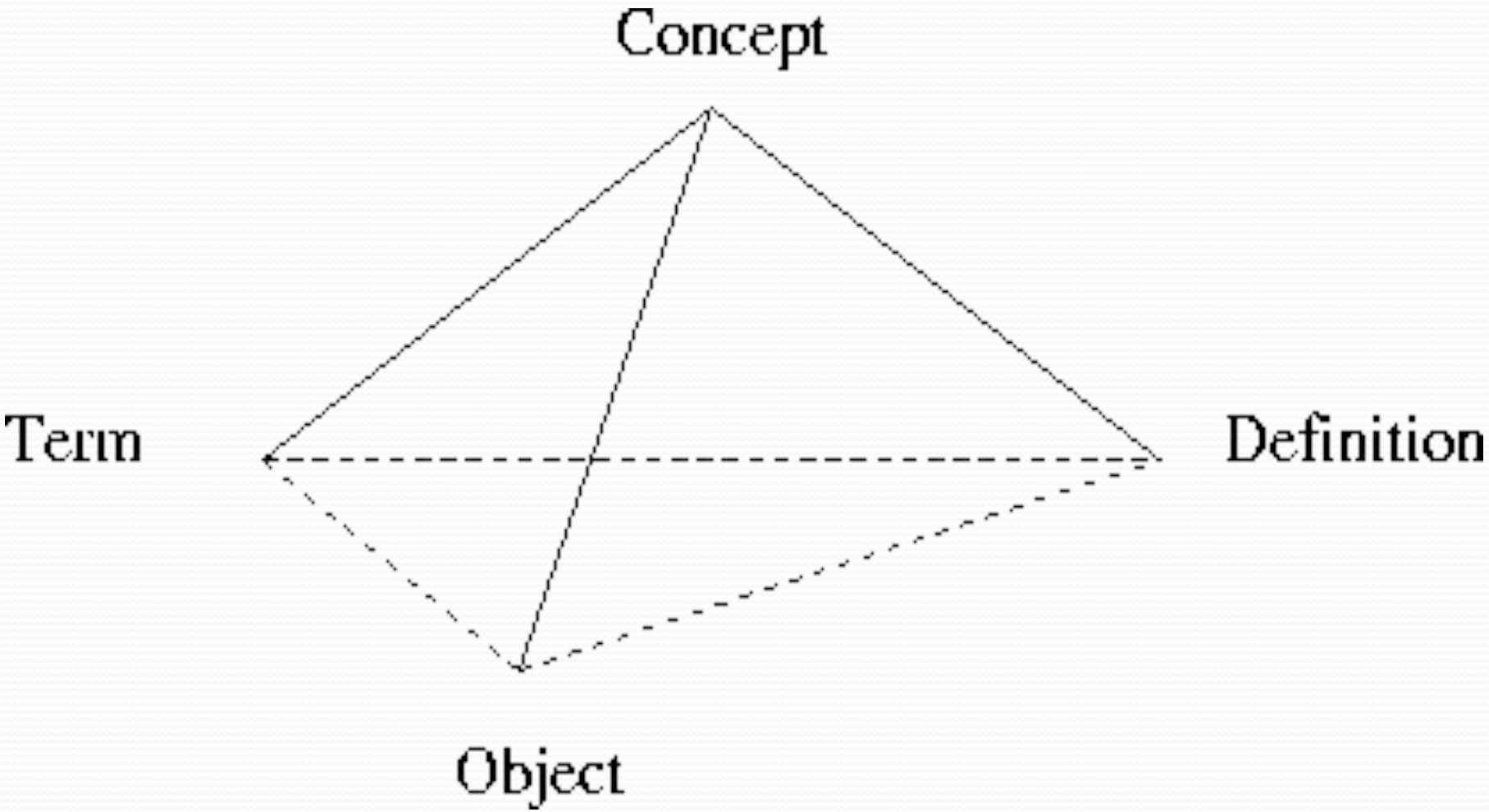
Principles from the General Theory of Terminology	Other Approaches
3rd principle: A concept is ideally defined in an intensional definition.	An intensional definition is often neither possible nor desirable.

Semiotic triangle



The terminologists' additional dimension to the semiotic triangle

the dimension of definition resulting in the four intersections *concept*, *object*, *term* and *definition*.


Concept
Term
Definition
Object

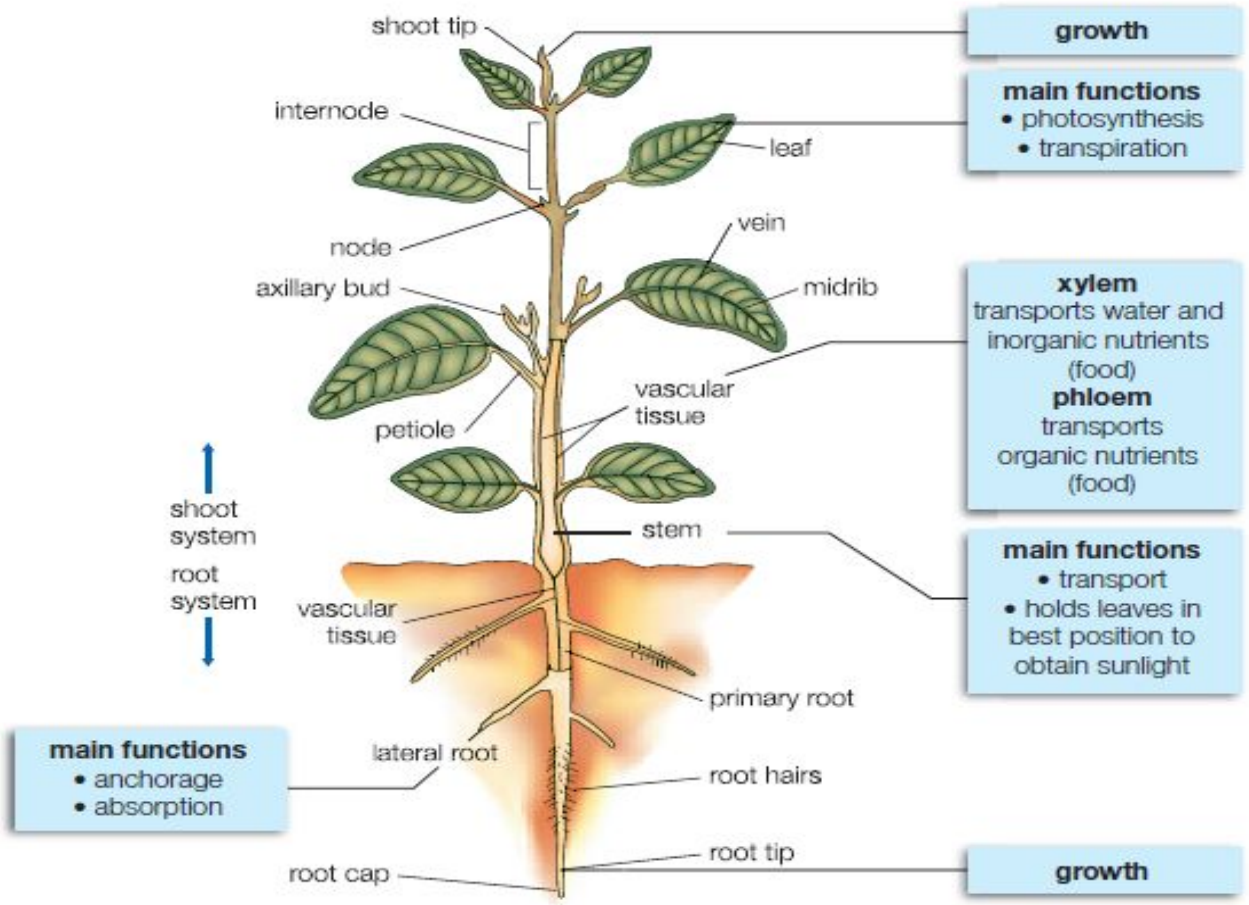
Representation of Concepts

How can concepts be represented?

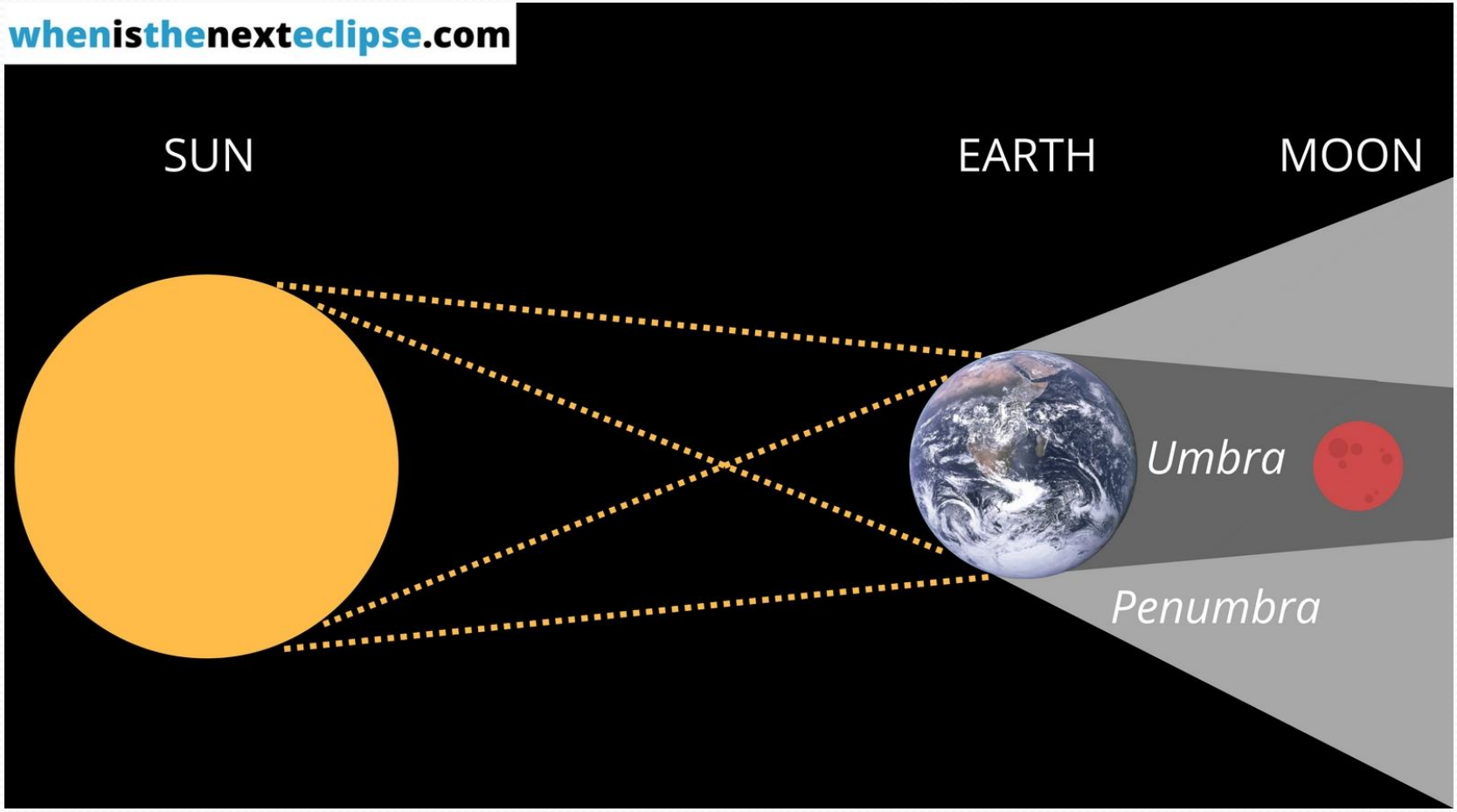
A concept can be represented in dictionaries either by a **definition** or by an **illustration**.

- **Illustrations** are iconic units that reproduce the idea that individuals have of a certain class of objects in the real world.
- Illustrations help us “visualize” the concept.
- They are very helpful for understanding, but not always available.

This is an example of the representation of a concept



Representation of a Lunar Eclipse



That is why we resort to definitions

Definitions are linguistic formulae that are aimed at describing the concept.

Generally, there are **three types of definition**:

Each type of definition refers to the same reality seen from different perspective.

1. **Linguistic definition**

- describe the linguistic sign (word / term);
- found in general language dictionaries (for En: Oxford, Cambridge, Merriam-Webster; for Ro: DEX etc.)

Types of definition

2. **Ontological definition**
   - describes aspects from the real world
   - found in encyclopedias (Britannica, Americana etc.)
3. **Terminological definition**
   - describes concept of a special subject field;
   - found in specialized dictionaries, databases, BUT ALSO in general language dictionaries (it is not cost efficient to by specialized dictionaries for each subject field, that is why the many terms are included in general language dictionaries)

That is why, in many the dictionaries we usually see a mixed process somewhere between a linguistic and a terminological definition to define terms.

Example of mixed definition from Oxford Dictionary:

- **Oxygen**
- **noun**
- [*mass noun*] a colourless, odourless reactive gas, the chemical element of atomic number 8 and the life-supporting component of the air: *if breathing stops , there is no oxygen getting to the brain and the cells begin to diehydrogen and carbon in the fuel combine with the oxygen in the air to form carbon dioxide and water*
- [*as modifier*]: *an oxygen supply*
- (Symbol: O)
- Oxygen is essential to plant and animal life and is a constituent of most organic compounds. It forms about 20 per cent of the earth's atmosphere, and is the most abundant element in the earth's crust, mainly in the form of oxides, silicates, and carbonates

Example of mixed definition from Oxford Dictionary

sugar

noun

1 [*mass noun*] a sweet crystalline substance obtained from various plants, especially sugar cane and sugar beet, consisting essentially of sucrose, and used as a sweetener in food and drink: *a spoonful of sugar*

[*as modifier*] : *a sugar bowl*

[*count noun*] a lump or teaspoonful of sugar, used to sweeten tea or coffee: *I'll have mine black with two sugars*

2 *Biochemistry* any of the class of soluble, crystalline, typically sweet-tasting carbohydrates found in living tissues and exemplified by glucose and sucrose.

3 *informal, chiefly North American* used as a term of endearment: *what's wrong, sugar?*

4 [*as exclamation*] *informal* used as a euphemism for 'shit': *'Oh sugar!' cried Sally*

5 *informal* a narcotic drug, especially heroin or LSD: *bags full of extra-fine Colombian sugar*

Definition of Terminological Definition

A terminological definition *is a descriptive statement that gives the essential characteristics of a concept as well as characteristics that distinguish the concept from all others.*

Its purpose is to provide

a clear **understanding** of what a given concept is, specific to a given **subject field**, and to **position** the concept being defined within its **conceptual system**.

A good terminological definition responds to the **need of subject specialists for identification of a new process,** as well as to the **need of translators for finding the equivalence of a term**.

A number of principles must be followed when defining a term:

- **predictability** - dependent on a *concept system*
- **simplicity** - concise, clear (1 sentence)
- **affirmativeness** - what the concept is
- **noncircularity** - not back to the concept in question
- **absence of *tautology*** - *not a paraphrase of the term, but* rather a description of the *semantic features of the* concept.

There are various methods used for defining concepts in terminology.

Choice of method according to:

- the nature of the concept which has to be defined;
- the particular purpose of the definition.

Intensional definition

brings together ALL the characteristics required for describing a concept; the NECESSARY AND SUFFICIENT conditions for belonging to the set being defined.

It lists all the properties of a concept.

Examples of Intensional Definitions

- ***square number***: *a number that can be expressed as an integer multiplied by itself.*
- ***agriculture*****:** *the science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool, and other products.*

Extensional definition

enumerates ALL the specific objects that a concept represents, that is its extension(every object that falls under the definition of the concept or term in question).

It is usually applied to small sets.

It is a type of enumerative definition.

Example: Extensional definition

- ***continent:*** *Africa, North America, South Americas, Europe, Asia, Antarctica.*
- **gastrointestinal tract (GI tract) or the alimentary canal** *is made up of the oral cavity, pharynx, esophagus, stomach, small intestines, and large intestines.*

Operational definition:

provides a specific MEASUREMENT PROCESS whereby the concept is measured.

is used to define something (e.g. a variable, term, or object) in terms of a process (or set of validation tests) needed to determine its existence, duration, and quantity.

Example of Operational definition

- ***weight:*** *weight is the numbers that appear when that object is placed on a weighing scale.*
- ***Intelligence:*** *a measure of the IQ of a person.*
- ***Temperature:*** *a measure of the average kinetic energy of the particles in a sample of matter.*
- ***kilowatt:*** *a unit for measuring electrical power; 1000 watts.*

Theoretical definition:

provides the meaning in terms of the theories of a specific discipline, implying acceptance of such theories.

They are common in philosophy and science and can be difficult to understand because of their strict, and often conceptual uses.

Theoretical definitions of the same term often contradict each other depending on whose theory is being used as the basis.

Example: Theoretical Definition

- *Meter: the length of the path traveled by light in a vacuum during a time interval of 1/299,792,458 of a second.*
- definition of substances as various configurations of atoms
- definitions of colours as specific wavelengths of reflected light.

Example: Theoretical Definition

- Theoretical definitions of the same term often contradict each other depending on whose theory is being used as the basis.
- E.g. "***overweight***" - based on new theories put forth by the National institute of Health, WHO suggesting greater risks than originally believed ("having a BMI (Body Mass Index) over 25" (rather than 27 for women and 28 for men)).

Partitive definition:

provides the relationship between the whole and its parts.

- ***telephone****: consists of a handset, a call display, a keypad, etc.*
- ***split air conditioner*** *comprises two parts: the outdoor unit and the indoor unit.*
- **gastrointestinal tract (GI tract) or the alimentary canal** *is made up of the oral cavity, pharynx, esophagus, stomach, small intestines, and large intestines.*

Contextual definition

- According to ISO/R 1087 the contextual definition is based on a definition of a term extracted from a particular text.

- According to *Equal Opportunity Act 2010* **discrimination** is treating, or proposing to treat, someone unfavourably because of a personal characteristic protected by law. The act sets out 18 personal characteristics that make discrimination in employment against the law.

The majority of definitions are mixed definitions.

Patterns for creating definitions

Patterns for creating definitions

Definitions follow the same underlying structure as described by J. Sager.

Recommendation for the so-called ideal terminological definition

A definition in terminology states the

(1) GENUS PROXIMUM of the term to be defined and

(2) the CHARACTERISTICS that distinguish this definiendum from coordinates that share the same genus.

Formula for “ideal” terminological definition

DEFINIENDUM = DEFINIENS (GENUS + DIFFERENTIA)

Term to be defined = definition (the concept class of category of the definiendum + characteristics).

- *rubber* – **elastic substance** obtained from the coagulated milky juice of Hevea and Ficus species.

Definiendum	Definiens	
	Genus	**Distinguishing characteristics**

Definiendum	Definiens	
	Genus	**Distinguishing characteristics**
Influenza (flu)	viral infection	causes fever, runny nose, cough, headache, a feeling of illness (malaise), and inflammation of the lining of the nose and airways.

In order to understand all these elements it is important to analyze the definition of Fructose

Definition Fructose

fructose - a yellowish to white, crystalline, water-soluble, levorotatory ketose sugar, $C_6H_{12}O_6$, sweeter than sucrose, occurring in invert sugar, honey, and a great many fruits: used in foodstuffs and in medicine chiefly in solution as an intravenous nutrient.

- Definiendum - fructose
- Genius – sugar
- Concept class - levorotatory ketose sugar
- the relation of the term to the superordinate concept - sweeter than sucrose
- Specific characteristics - a yellowish to white, crystalline, water-soluble, $C_6H_{12}O_6$
- nonessential characteristics

Let's analyze how the definition of the terms *sugar* and *suffixation* is made up

1. DEFINIENDUM

the term that has to be defined;

- *sugar*
- *suffixation*

GENUS

2. - “the concept class of category of the definiendum” (has to be rather broad to avoid the trap of having to define a general classification for concepts)

It gives the type of a concept:

- material entity (a living object, unanimated object, institution, etc.),
- an abstract entity (such as a domain in science), or
- something else.

GENUS

- carbohydrate
- word-formation process

3. the superordinate term according to which the concept is defined.

- *sweet carbohydrate*
- *by which an affix*

4. “the concept class of category of the definiens”.

- *belonging to the class of organic compounds*
- *called a suffix*

5. the relation of the term to the superordinate concept (the definiendum-definiens relation).

6. the differentia specifica - the specific components distinguishing the concept from the superordinate concept and related concepts .

- *with the general formula: CnH2nOn*
- *is attached to the end of a stem*

nonessential characteristics

7. such as information on restrictions of the scope of the definition, limited usage, further information on the usage. This information is not essential to the understanding of the concept but might be helpful to understand individual uses of a term.

- *origin, types: frucose, lactose, etc.*
- *Suffixes usually modify the lexical meaning of the root and transfer words to a different part of speech.*

Possible mistakes in creating definitions

- Circular definition: a concept is defined by a concept that is defined by the first concept.
- Usage of synonyms in definitions: For stylistic reasons authors try to use as many different words as possible not to repeat the same words.

- Definition that is not user oriented: Definitions have to be written for potential users, taking their knowledge and background into account.
- Negative definitions or use of negations in definitions does not give the concept but states what a concept is not.

Negative definitions are suitable for negative terms, such as *undefinable concept* is properly defined as *a concept that cannot be defined*.

Good luck!