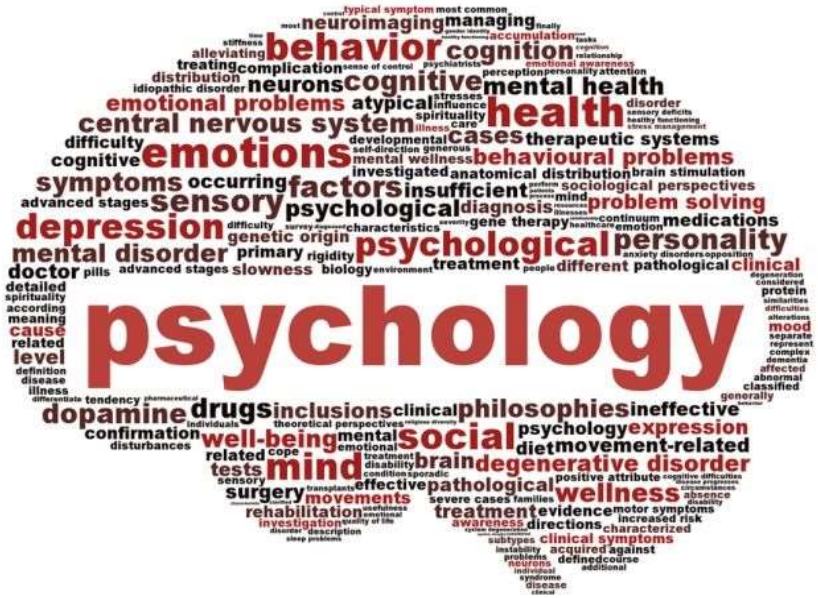
Introduction to Psychology

Chapter-1

Definition of Psychology

- Psychology is the scientific study of mental processes, experiences and behaviour in different contexts.



Different Approaches of Psychology

- An approach or perspective in psychology is a specific view which explain why and how we feel, think and behave as we do.

Structuralism

- This school of thought was founded by Wilhelm Wundt and E.B. Tichener.
- It is the study of basic elements of conscious experience and structure of mind.
- Structure of mind can be understood as mental processes, activities and experiences since birth.
- Structuralists use *Introspection* method to understand the structure of mind.
- Introspection is to observe analyse one's own thoughts and experiences.

Functionalism

- Developed by William James.
- It investigates the function of consciousness rather than its structure.
- Focuses on how consciousness help human being to cope with the challenges.

Gestalt Psychology

- It focuses on the holistic aspect of mental processing.
- Emphasizes that whole of anything is different than its parts.
- It plays a major role to understand human perception.

Biological Perspective

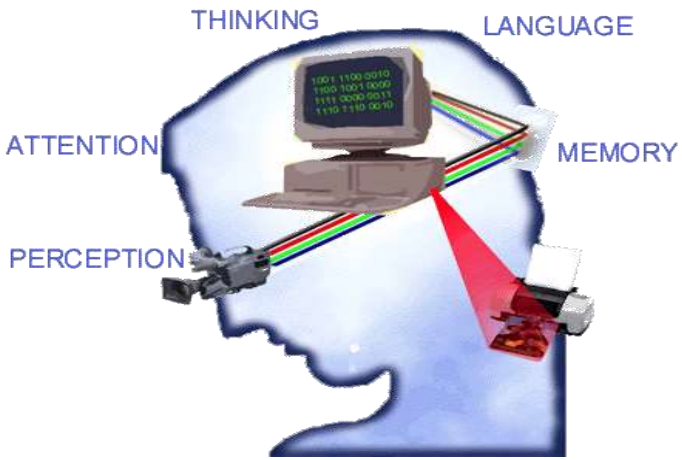
- This approach attempts to understand behaviors and experiences in terms of biological structure and function.
- It studies brain processes, nervous system, function of glands, biochemical and neural processes, role of instincts and the influence of heredity.
- Many biological psychologist have tried to explain abnormal behaviour. For ex-schizophrenia is affected by the levels of dopamine.

Psychodynamic Perspective

- The psychodynamic or psychoanalytic school was developed by Sigmund Freud.
- It emphasizes on the role of unconscious mind, early childhood experiences and interpersonal relationships to explain human behaviour, personality and to treat people suffering from mental illnesses.
- Structures of mind (Topographical aspects)-
  - conscious, subconscious/preconscious, and unconscious
- Components of personality (Dynamic aspects)-
  - id , ego and superego

Cognitive Perspective

- It is the scientific study of mind as an information processor.
- Studies mental processes including how people perceive, think, remember and learn.
- Human mind = Computer(information processing)
  - Encoding
  - Storage
  - Retrieval



Behavioural Perspective

- It is concerned with observable stimulus-response behaviours.
- Focuses on how we learn through reward, punishment and observation.
- Emphasizes more on the environmental factors than heredity or genetic factors.

Humanistic Perspective

- Based on the positive aspects of human nature.
- Believes that people are basically good.
- Focuses on how people strive to reach their full potential.
- Behavior is explained as being motivated by satisfying needs with the goal of reaching one's full potential (Maslow).
- People make free and conscious choices based on their unique experiences (Roger).

Issues in Psychology

- **Nature Vs Nurture**
  - To what extent to which various aspects of our behaviour are inherited or learned?
  - Nature is that which is inherited or biologically determined characteristics. Ex- colour of eyes, skin etc.
  - Nurture refers to environmental influences. Ex- our experiences, social relationships etc.

- **Conscious Vs Unconscious**

- How much of our behavior is due to forces that we are fully aware of AND

- How much is due to unconscious activity- mental process that is not accessible to the conscious mind?

- Rationality Vs Irrationality

- We may not be as rational as we think ourselves to be. We are not always perfectly logical.
- Our reasoning is at times overridden by our emotions, gut feeling.

Methods of Studying Psychology

- **Experimental method**
  - The researcher systematically manipulates one or more variables to study their effect on the other variables in a controlled condition.

Three characteristics of experimental method are,

- Random assignment of subjects to the experimental and control group.
- Independent variable must be manipulated.
- There must be at least one independent control group.

Advantages

- Information collected through experimental method are empirical, systematic, verifiable and reliable.
- Greater control over the independent variable.
- Less chance of experimenter's bias and personal opinions to affect the results.

Limitations

- It is difficult to generalize the findings because of the controlled condition or artificial settings.
- Social desirability effect may affect the findings because participants are aware of the experiment.

Correlational Research

- Correlational research is used to determine whether and to what extent a relationship exists between two or more variables.

- correlation is of three types
  - Positive correlation
  - Negative correlation
  - No correlation or zero correlation

Example-Relationship between unemployment and rate of suicide.

Advantages

- Easier to collect more data.

Disadvantages

- It can not establish cause and effect relationship between variables.

Naturalistic Observation

- It involves observing spontaneous behaviour of the subjects in their natural environment.

- Example-studying animal behaviour in a forest.

Advantages

- It can be used when lab study is not possible.
- Allows the researcher to get genuine data without any manipulation.

Disadvantages

- Less control over the factors of interest.
- If people know that they are watched they may change their behaviour.
- Observer’s bias in interpreting the situation.

Case Study

- It refers to in-depth study of an individual or a small group of individuals.
- It is qualitative in nature.
- Data are collected through various sources (family, teachers, medical history etc.) and using different methods (observation or interview etc.).

Advantages

- Provides rich qualitative data.
- More flexible than other types of research**.**

Disadvantages

- Difficult to conduct on large sample.
- It is time consuming.
- There are concern about the reliability, validity and generalizability of the results.

Survey

- This method is a method of scientific investigation in which a large sample of people answer questions about their attitudes and behaviour.
- It can be used in both quantitative and qualitative study.
- Questionnaires, interview and observation can be used in survey method.

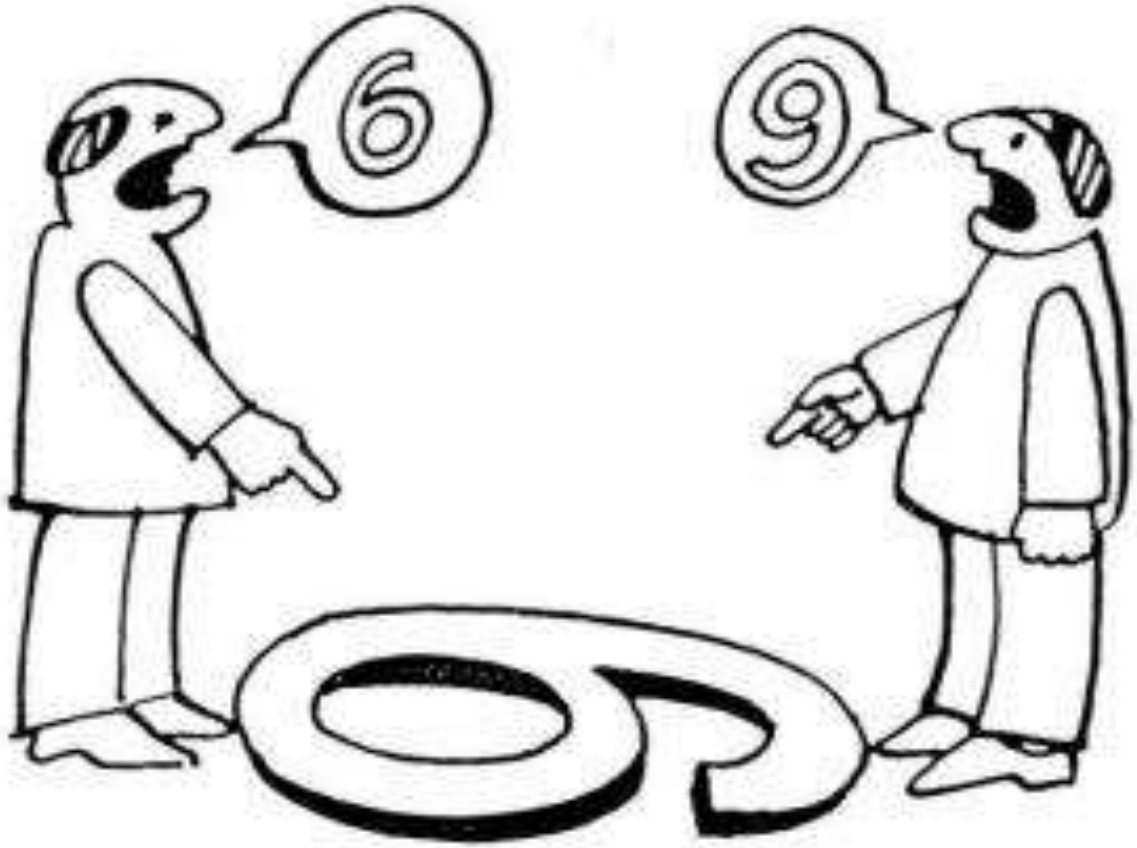
Advantages

- Faster and easy method of data collection.
- Data can be collected from a large sample.
- Inexpensive compared to other methods.
- Data are relatively easy to analyse.
- It can be administered by online, telephone, mail etc.

Disadvantages

- Social desirability effect can be there.
- Respondents may be not cooperative.

Perception



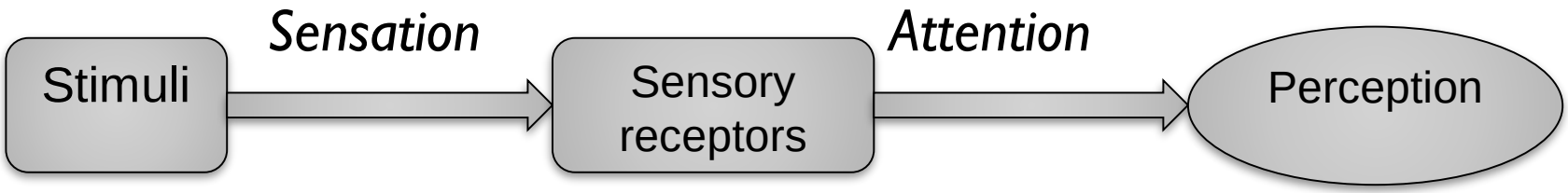
Definition of perception

- Perception is the process through which we organize our sensations to meaningfully interpret them.
- Sensation is the information we receive through our sense organ. Ex- touch, smell, taste, sight, sound.
- It is the initial contact between individual and the environment.
- Attention is the process of selecting a stimulus from a large pool of stimuli.

How Perception is different from sensation and attention

- Sensation is a mechanical process; attention is the filtering process and perception is the interpretative process for forming mental representations.

Process of Perception



Factors influencing perception

Objective factors	Subjective factors	Situational factors
• Novelty • Sound • Motion • Size • Background • Proximity • Similarity	• Attitudes • Motives • Interests • Experience • Expectation	• Time • Culture • Location

Objective Factors

- Physical appearance plays an important role in our perception.
- Extremely attractive or unattractive individuals are more likely to be noticed in a group than ordinary looking individuals.
- A moving object is more likely to grab attention than a static one.
- Similarly size, sound and other attributes of target shape always have a big role of our perception.

Subjective/ Internal factors

- Perception is influenced by personal characteristics of the perceiver.
- Attitudes, motive, interest etc. of an individual heavily influence on how he/she perceive things.
- Ex- a hungry man will notice the smell of food while a satiated man may not notice the tasteful dish.

We don't perceive things as they are; we perceive as we are

Situational Factor

- The situation or context in which the interaction between the perceiver and the target takes place also affect perception.
- Elements of the environment surrounding an individual like time, light, heat etc. influence perception.
- Person's ethics, values and his cultural upbringing also play an important role in his perception.

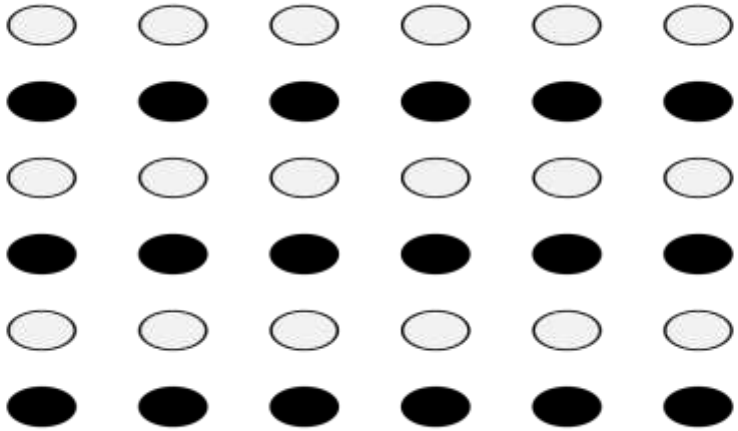
Perceptual organization (gestalt laws)

According to Gestalt psychology, the whole is different from the sum of its parts. Based upon this belief, Gestalt psychologists developed a set of principles to explain perceptual organization, or how smaller objects are grouped to form larger one. These principles are often referred to as the "laws of perceptual organization”.

Laws of perceptual organization.

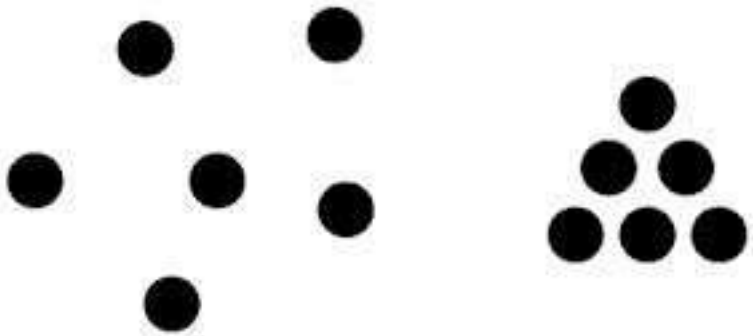
- **Law of Similarity**

  The law of similarity suggests that similar things tend to appear grouped together.



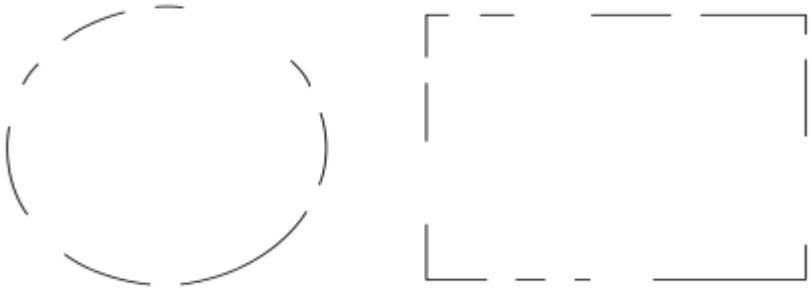
- **Law of Proximity**

  According to the law of proximity, things that are near each other seem to be grouped together.



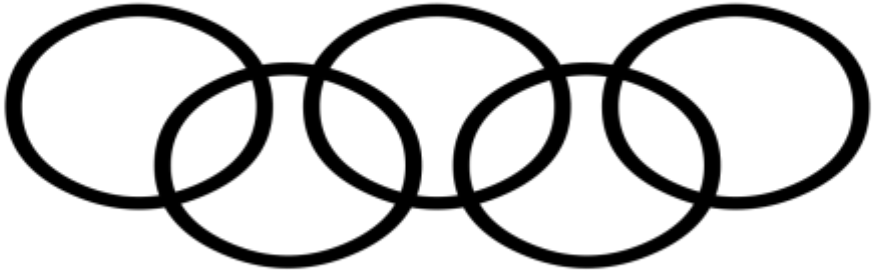
- **Law of Closure**

  It proposes that within limits, physically incomplete figures tend to be perceived as complete figure.



- **Law of good figure**

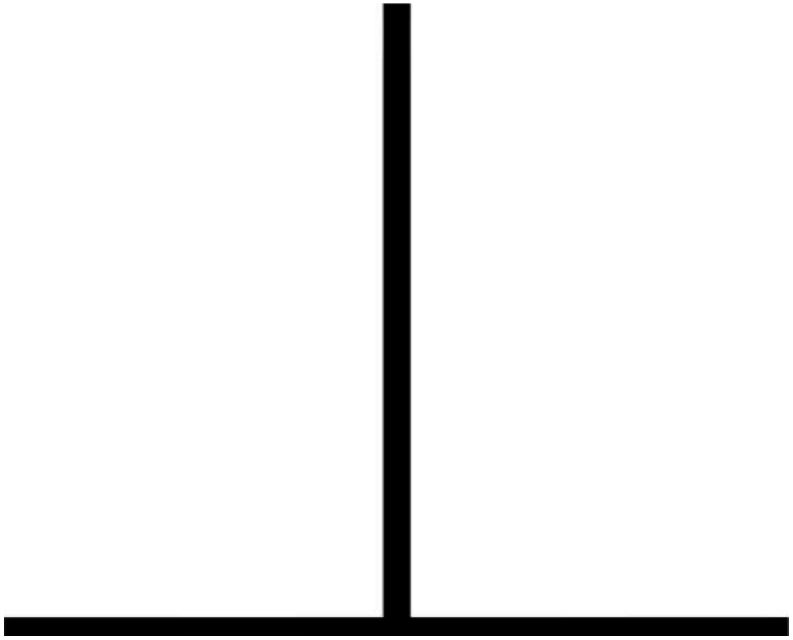
  The law of Pragnanz is sometimes referred to as the law of good figure or the law of simplicity. This law holds that objects in the environment are seen in a way that makes them appear as simple as possible. You see the image below as a series of overlapping circles rather than an assortment of curved.



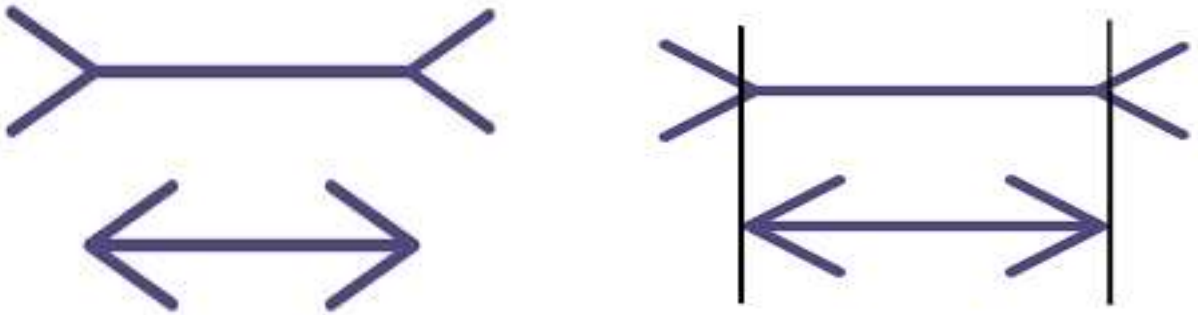
Errors in perception

- There are two types of errors in perception; illusion and hallucination.
- Hallucination is the false interpretation of sensory information. Ex- ghost.
- Illusion is the wrong interpretation of sensory information. Ex- perceived a rope as a snake.
- Illusion may concern most of the features of physical world, such as distance, motion, shape, size and direction.

- Horizontal- vertical illusion:
  - Vertical line looks longer than the horizontal line.

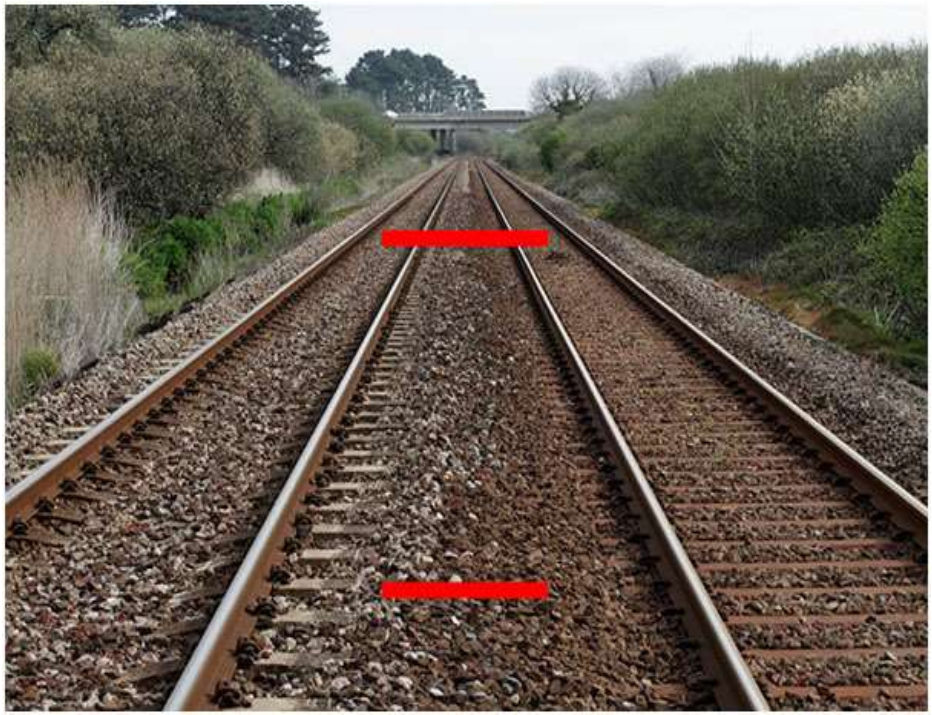


- The Muller-Lyer illusion:
  - The feather headed line looks longer than the arrow headed line.

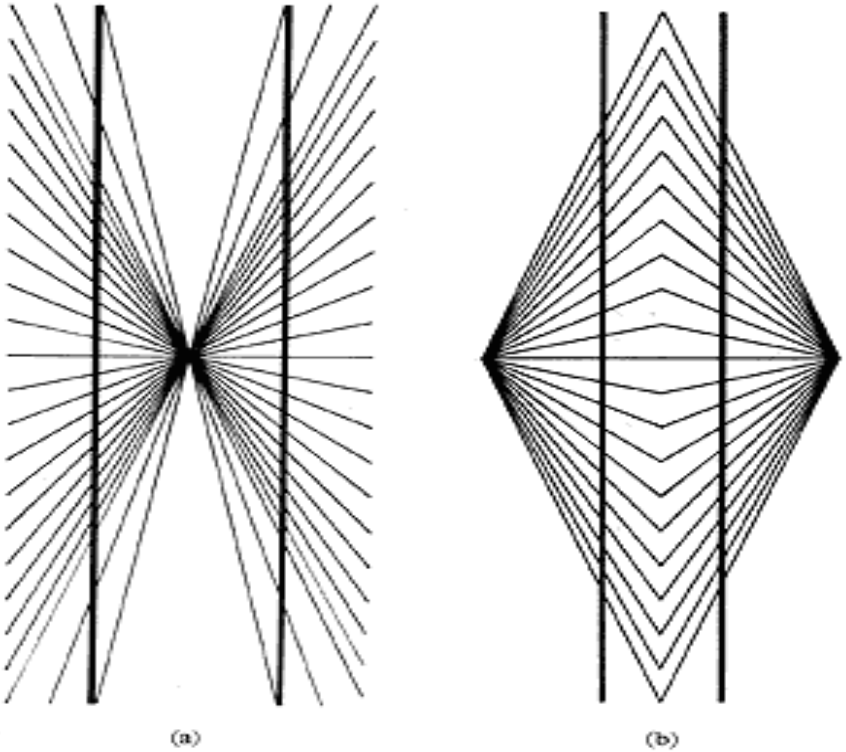


- Moon illusion:
  - Moon looks bigger near the horizon than the zenith.

- Ponzo illusion:
  - Two horizontal lines are of same length.



- Poggenderff illusion:



Learning

Definition…

Learning is the acquisition of knowledge, habit and attitudes.

A relatively permanent change in behavior as a result of practice and experience.

Natures

- It brings about a relatively permanent change in behavior.
- The change can be both positive and negative
- It is produced by experience

Classical conditioning

- Discovered by I.P. Pavlov (1849-1936).
- It involves establishing a connection between a stimulus and a response, which are not naturally linked.

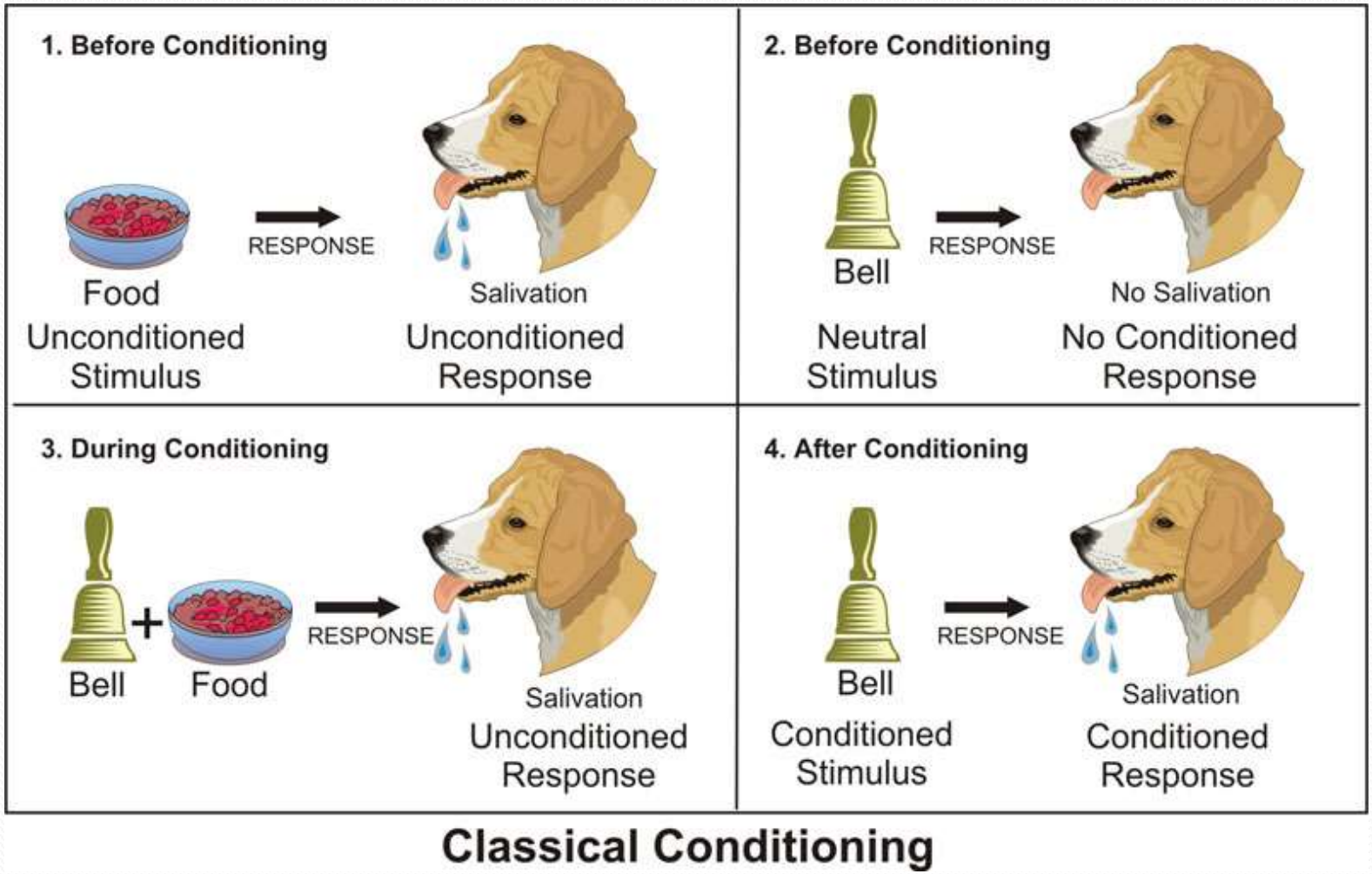
Components of classical conditioning;

- **Unconditioned stimulus (UCS)**-a stimulus that naturally evokes a response. Ex- food
- **Unconditioned response (UCR)**- a response which is natural and produced by UCS without any training. Ex- salivation

- **Conditioned stimulus(CS)**- a neutral stimulus when paired with an UCS evoke a conditioned response. Ex- bell

- **Conditioned response (CS)**- a response that is produced by CS after conditioning. Ex- salivation to bell

Classical conditioning procedure



Classical Conditioning

Principles of classical conditioning

- Acquisition
- Extinction
- Spontaneous recovery
- Stimulus generalization
- discrimination

Application of conditioning principle to human behaviour

- Implosive therapy
- Flooding
- Systematic desensitization
- Aversion therapy

Operant conditioning

- Founded by B.F. Skinner, known as **instrumental learning.**
- Learning occurs through reinforcements and punishment.
- We learn to perform certain behaviour because they result in reward, similarly we learn to avoid certain behaviour because they result in punishment .
- Reinforcement is a stimulus that strengthens the occurrence of behaviour.
- Punishment is a stimulus event that weakens the occurrence of behaviour.

Types of reinforcements:

- **Positive reinforcement**- probability of a behaviour increases because it is followed by a pleasant stimulus.
- **Negative reinforcement**-response probability increases by avoiding unpleasant stimulus. Ex- when you clean your room to avoid mother's nagging.

- **Punishment** – punishers are unpleasant stimulus, followed by a behaviour to weaken that behaviour.

Schedules of reinforcement

It refers to how often a behaviour should be reinforced.

- **Continuous reinforcement**

A desired behaviour is reinforced every single time it occurs.

- **Partial reinforcement**

The behaviour is reinforced only part of the time.

Four types of partial reinforcement;

- Fixed ratio
- Variable ratio
- Fixed interval
- Variable interval

-Ratio schedules are based on the number of responses.

-Interval is related to time interval.

Observational learning

- Founded by Albert Bandura.
- People learn by observing and imitating behaviours of others, called a model.
- **Process of Modelling-**
- Attention
- Retention
- Production
- Motivation

Factors affecting learning

- Feedback
- Distribution of practice
- Contents of learning (whole Vs part)
- Meaningfulness materials
- Interest
- Attitude
- Motivation

MEMORY

Definitions

- Memory is the retention of information over time.
- It has been derived from the Latin word ‘memoria’, which means historical accounts or long remembrance.
- It is the process by which we encode, store and retrieve information.

Process of memory

Encoding

It is the process of converting information into a form that can be entered into memory system.

Storage

It refers to retaining/holding the encoded information in memory over a period of time.

Retrieval

It is the process of recovering the stored information from memory.

Atkinson and Shiffrin model

- This model is also known as modal model of memory.
- According to this model there are three types of memory system: sensory memory, short-term memory (STM) and long-term memory(LTM).

Sensory memory

- Known as sensory buffer or sensory register.
- Hold the sensations/ sensory information for a brief period of time.
- Capacity of holding information is high and it lasts less than 2-3 seconds.
- Two types of sensory memory; iconic (visual) and echoic (auditory).

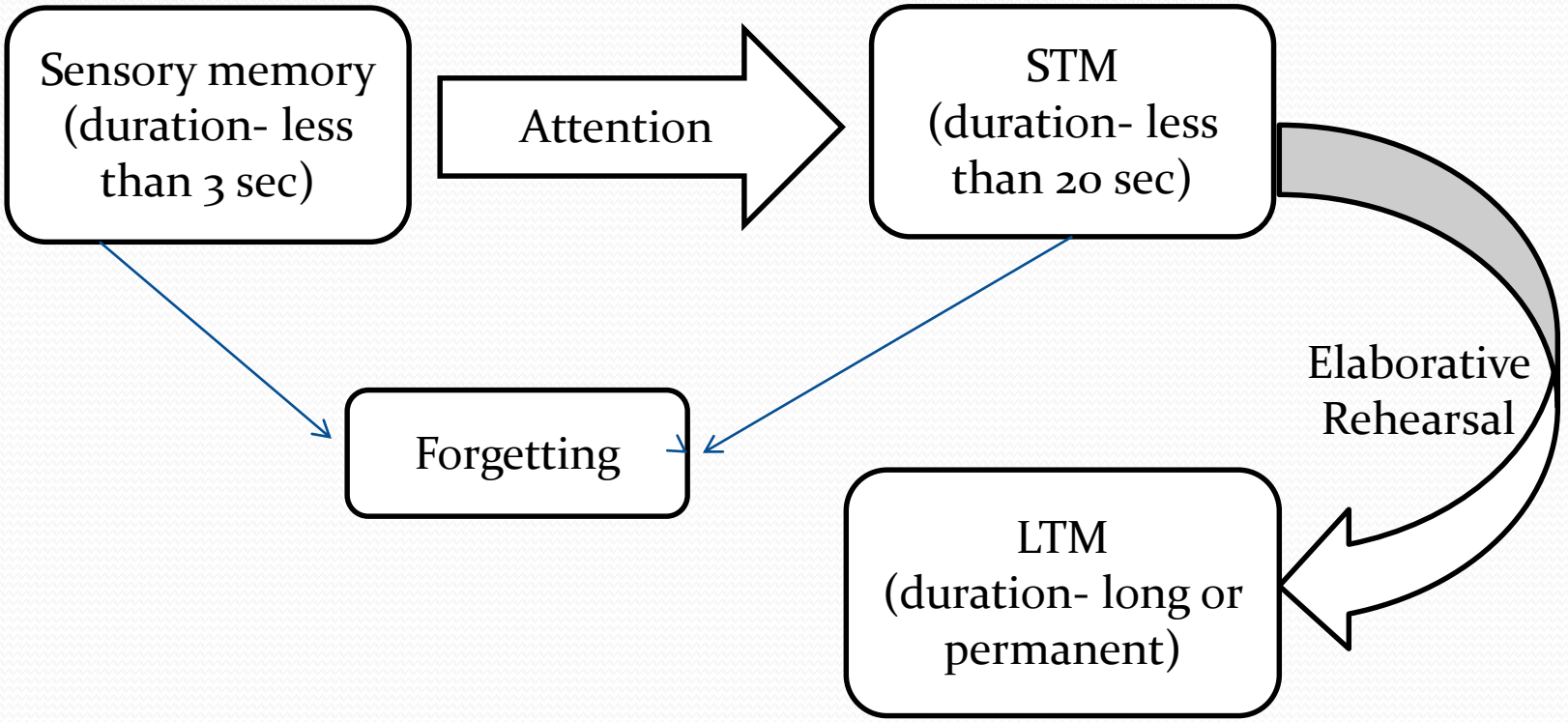
STM (working memory)

- After sensory memory information passes to STM.
- Also known as working memory.
- Holds limited information for a short period of time.
- Duration lasts less than 15-20 seconds.

LTM

- It stores large amount of information over a longer period of time.
- This is relatively permanent.
- Capacity of holding information is unlimited.

How information stored in LTM



Kinds of long-term memory

Episodic memory

- It is the memory for factual information.
- Holds information acquired at a specific time and place.
- Known as autobiographical memory, since it stores biographical details of our life.
- Ex- first day at new job.

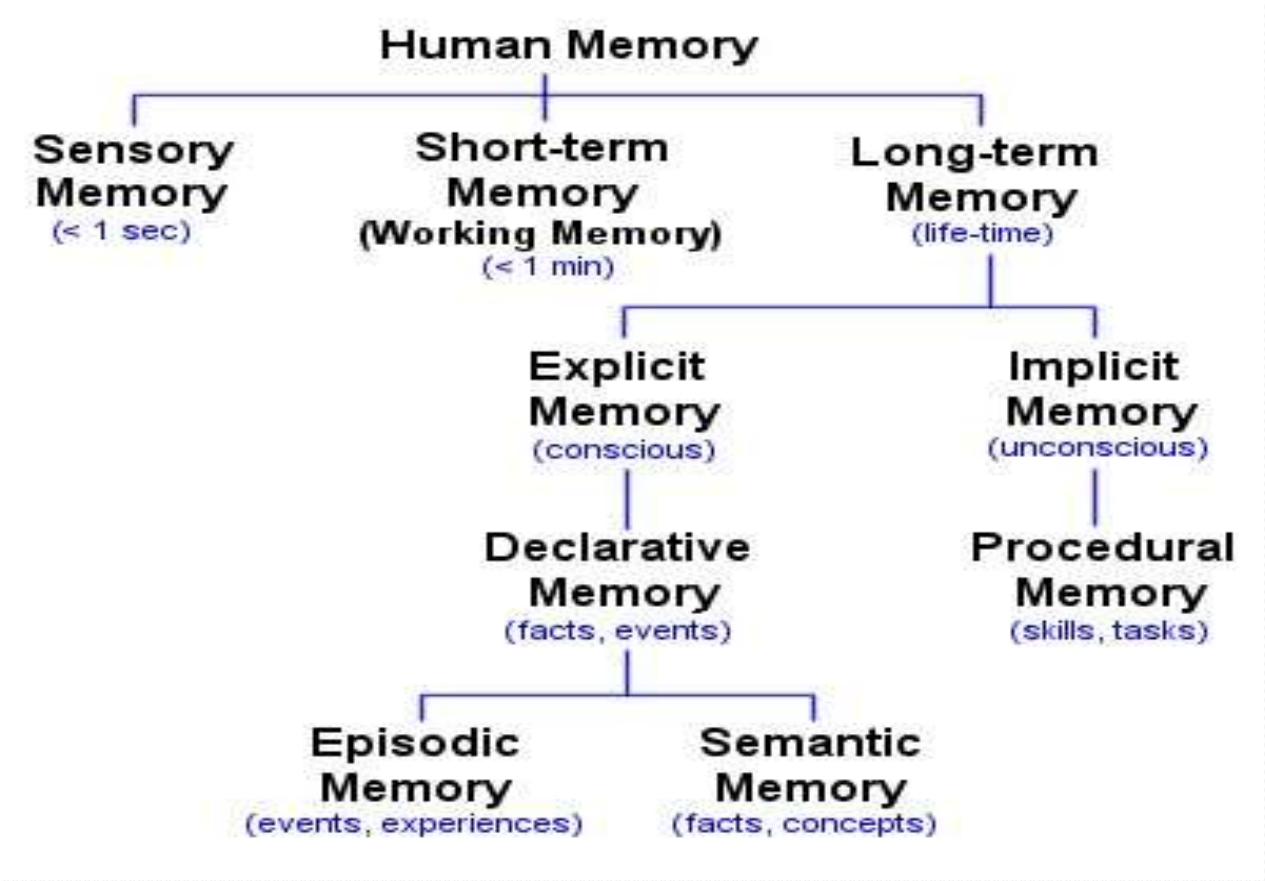
Semantic memory

- Usually stores information by its meaning.
- Information generally organised in semantic memory by using concepts.
- Concepts are the mental categories for objects or events that are similar to one another in certain ways.

  ex-bicycle, train, car = vehicle
- Semantic and episodic memory are two types of declarative memory.

Procedural memory

- It is not declarative memory because it can not be expressed verbally.
- It stores information regarding how things are done.
- It refers to memories for skills and habits.
- Ex- riding bicycle.



http://www.human-memory.net/types.html

Forgetting

- Forgetting occurs due to interference.
- Two types of interferences;

  (i) Retroactive interference, (ii) Proactive interference
- **Retroactive interference**- when new information interfere with previously learned information.

- **Proactive interference**

It occurs when previously learned information interfere with new information.

Decay theory

- Suggests that forgetting occurs due to the decay of memory traces.
- Traces are the form of chemical and physical change in the nervous system that store memories.

Memory dysfunctions

Alzheimer's disease

- It affects people over the age group of 65.
- Begins with mild mental problems and gradually become worse.
- People with this disease face wide range of memory impairment including their episodic, semantic and procedural memory.
- An Alzheimer patient's brain contain amyloid beta protein which damage the neurons.

Amnesia (memory loss)

- Amnesia is the inability to lay down new memories or recall old memories.
- There are two types of amnesia.
- **Retrograde amnesia:** the person can't remember events that occurred before the trauma or amnesia inducing events, but they remember what happened after it.
- **Anterograde amnesia:** in this type of amnesia person can't remember new information after the trauma.

Korsakoff's syndrome

- It caused by long term alcohol consumption and substance abuse.
- Symptoms includes sensory and memory problem as well as heart, liver and gastrointestinal disorder.
- It involves severe retrograde and anterograde amnesia.