

# **I B.SC PSYCHOLOGY**

## **21CPS1A- Basic psychology-I**

### **INTRODUCTION**

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***Definition of Psychology-Historical Origin of Psychology- Psychology as Science- Methods of Psychology-Schools of Psychology-Branches of Psychology- Scope of Psychology***

#### **DEFINITION OF PSYCHOLOGY**

Psychology can be defined as the scientific study of human behavior and cognitive process (mind)

**Mind:** the contents of subjective experience, sensations, thoughts, and emotions

**Behavior** Observable actions, thought and feelings, activities of cell

#### **MEANING:**

This definition can be divided in two parts

1. It is scientifically proved
2. Its concerned with everything we do, we feel, think or experience

#### **HISTORICAL ORIGIN OF PSYCHOLOGY**

The word psychology was coined in 16<sup>th</sup> century from Greek terms

1. Psyche – soul
2. Logos – the study of a subject

1. The meaning of psychology was the study of soul in the earlier days. Later in 19<sup>th</sup> century when psychology emerged as science it had become **“the study of mind”**
2. Beginning in the 2<sup>nd</sup> decade of the 20<sup>th</sup> century, many psychologist abandoned the study of the mind in favor of the study of behavior consequently by 1920's psychology was defined as **“the study of behavior.”**
3. As a result, psychology is now more broadly defined as **“the science of behavior and mental process”**

## **THE PHILOSOPHICAL ROOTS OF PSYCHOLOGY:**

In 5<sup>th</sup> and 6<sup>th</sup> century B.C Greek like Socrates, and Aristotle who were asking questions on mental life made an opening for Psychology. Much later 17<sup>th</sup> century philosopher has introduced the idea of dualism,

i.e: the world is divided into two elements:

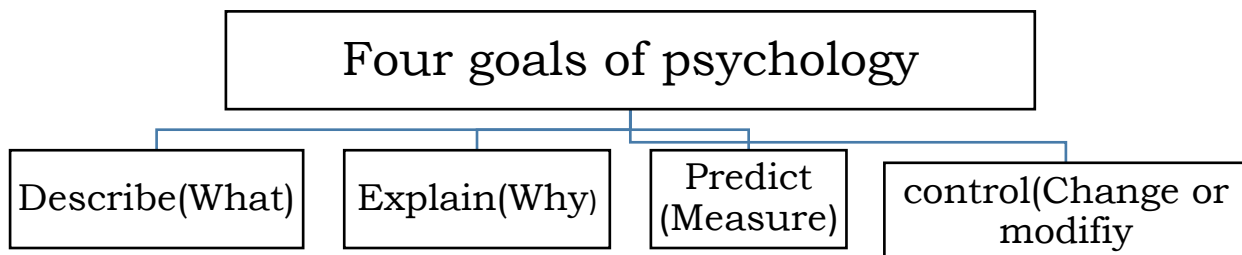
1. Mind- thoughts and feelings
  2. Matter - physical being or our bodies
- The French Philosopher Rene Descartes helped mold current psychological study when he wrote that there was a link between mind, body and perception.
  - Towards the end of the 17<sup>th</sup> century, the British philosopher John Locke contributed another important concept to the foundation for modern psychology.
  - Locke believed in the concept of empiricism that all knowledge is obtained.
  - Through observation and experiences he said that infants come into this world with blank minds with no experiences.
  - The term he used to describe the mind of the human infant was tabula rasa [Latin for blank tablet].
  - Whatever experiences a person has in life are written into their blank tablet.
  - Knowledge then is the result of a buildup of experiences. Locke's ideas have influenced education as well as psychology.

## **THE SCIENTIFIC ROOTS OF PSYCHOLOGY:**

- By 19<sup>th</sup> century scientist was making progress in answering questions about the nature of psychological processes that philosophers were having difficulty in explaining.
- Johannes Müller described how electrical signals were conducted by nerves within the body
- Herman Von Helmholtz showed how receptors in the eyes and ears receive and interpret sensations from outside world.

- Gustav Fechner demonstrated that our perceptions of physical stimuli, for instance the loudness of a sound or brightness of a light are related in lawful, predictable ways to the physical energies of these stimuli.
- These findings helped to study psychology as science.
- By 1879, in fact Wilhelm Wundt had founded the first formal laboratory for research in psychology at the University of Leipzig. Wundt is often described as founder of experimental Psychology.
- American Psychological Association in 1892, G. Stanley Hall (1844-1924) was influential in bringing Psychology to the United States. He founded the first laboratory of Psychology at Johns Hopkins in 1883.
- He stated the American Psychological Association in 1892 and then became its first president.

### GOALS OF PSYCHOLOGY



### Describing and measuring behavior:

As all science has measuring events, psychology also measures and describes the behavior.

All the psychological concepts like anxiety, learning, attitude, depression, personality, major goal, therefore is to develop techniques for measuring.

Each measuring device must possess two characteristics

1. Reliability
2. Validity

### Reliability

Reliability means that a person's score should not change with repeated testing. A scale that registered a different weight each time you got on it would be unreliable and therefore not useful. Likewise, a test of intelligence that give you different score each time you took it would be worthless.

### Validity:

It means that it must measure what it is supposed to measure. If we measure your intelligence by applying a tape measure to the circumference of your head, we might get the same score time, but the measuring techniques have little to do with intelligence.

### **Predicting behavior:**

- The second goal of psychology is to be able to predict behavior. The success in this effort relies heavily on measurement.
- Psychologist commonly uses part measurement of behavior as a primary basis for predicting what a person will do in the future.
- We can predict a student's performance in school more accurately if we know the individual level of intelligence.
- From the factory worker's score on a mechanical aptitude test, we should be able to predict his success on an assembly line.

### **Controlling and measuring behavior:**

- Prediction goes hand in hand with behavior modification and controlling let us assume that we have the knowledge necessary to predict mental illness we certainly would not want to stop there good prediction alone would not enough.
- The Psychologist would also want to try or modify the behavior of the mentally ill person, in a way that would help that person.
- Indeed behavior change is often the primary aim of practicing psychology.
- The Psycho therapist tries to change a patient's behavior, the industrial psychologist tries to modify the behavior of the employees and the marriage counsellor attempts to modify the behavior of husband and wife.

**Explaining behavior:**

- Psychologists seek to understand the most complex part of the world human behavior.
- Some people have argued that explanation is really what psychology is.
- A psychologist may be able to explain and measure anxiety, predict from these measurements the likelihood of a person's suffering mental illness and intervene to help individual to change his behavior.

**SCIENTIFIC METHODS OF PSYCHOLOGY**

1. Introspection
2. Descriptive research [naturalistic observation, case study, survey]
3. Experimental methods
4. Developmental method

**INTROSPECTION:**

1. It is the method of self-analysis.
2. Introspection means "looking into oneself or self-observation or self-analysis".
3. Introspection involves carefully examining and reporting one's own thoughts, action, sensation, emotions, mental notes

**Nature:**

In the method of introspection one relies on his memory, draws on his past experience of analysis his current behavior, "introspection is common in one's daily life".

**Example:** I am feeling well now

Thus in the method of introspection the individual examines and reports his own psychological process.

**Merits:**

1. One could do the self-observation without depending upon time, place and the nature of situation.
2. No device is required to gather information
3. The individual is able to know his own feelings and experiences.

**Demerits:**

1. This subjective and selective
2. They cannot be verified objectively
3. They cannot be confirmed by others
4. It can't be measured
5. The method of introspection provides little information about the experience of infants, mentally ill, animals which are of great importance.

**DESCRIPTIVE RESEARCH:**

1. It is systematic recording of observation

Descriptive research is descriptive because the

Research simply records what he has systematically observed.

1. Descriptive research method
  1. Naturalistic observation
  2. Case study
  3. Survey

**(I).Naturalistic observation :( making observation in the natural world)**

1. Naturalistic observation is a research method for systematically observing and recording events as they occur naturally in the real world.
2. Subject individuals and animals are observed in their natural environment.
3. To make sure that their observations represent natural behavior, observers refrain as much as possible from influencing the subjects they are observing.
4. If you want to study the eating behavior of students in the canteen, you should not announce your intention otherwise your subjects may behave unnaturally.

**(ii)Case study (studying individual in depth)**

1. The case study or case history method perhaps the simplest and most direct form of Psychology investigation. One individual is examined intensively to find out as much as possible about a certain problem or issue as it relates to that person.
2. A combination of measures may be used, including biographical data of the individual scores on psychological tests and information obtained in extensive interview.

**(iii).Survey: (asking for responses to interview and questionnaire)**

1. A survey asks subjects a series of questions about the topic of interest.
2. When psychologists wish to collect information about behavior, opinion, attitudes, life experiences or personal characteristics of many people they use the descriptive research method called the survey.
3. A survey asks subjects a series of questions about the topic of interest. Such as product preferences or religious opinions. Surveys are commonly in the form of personal interviews or questionnaires.

## **EXPERIMENTAL METHOD**

### **(ESTABLISHING CAUSES AND EFFECTS OF RELATIONSHIP)**

1. The causes – effect relationship can be established only by experimental method because the research will be done carefully in controlled conditions often in a laboratory and takes measurement in order to discover relations among variables.

### **DEVELOPMENTAL METHOD: [OBSERVING THE PERIOD OF GROWTH]**

In this method the technique of observation is used in the field of developmental psychology.

1. The physical, social, language, moral and emotional development of the children is observed.

Egg: The result is the running picture of the growing child and his behavior.

Developmental method makes use of the following techniques

1. Normative investigation (developmental of norms)
2. Longitudinal study (studying development over time)
3. Cross sectional study (comparing different age group)

## **SCHOOLS OF PSYCHOLOGY**

### **Early perspective:**

#### **Structuralism:**

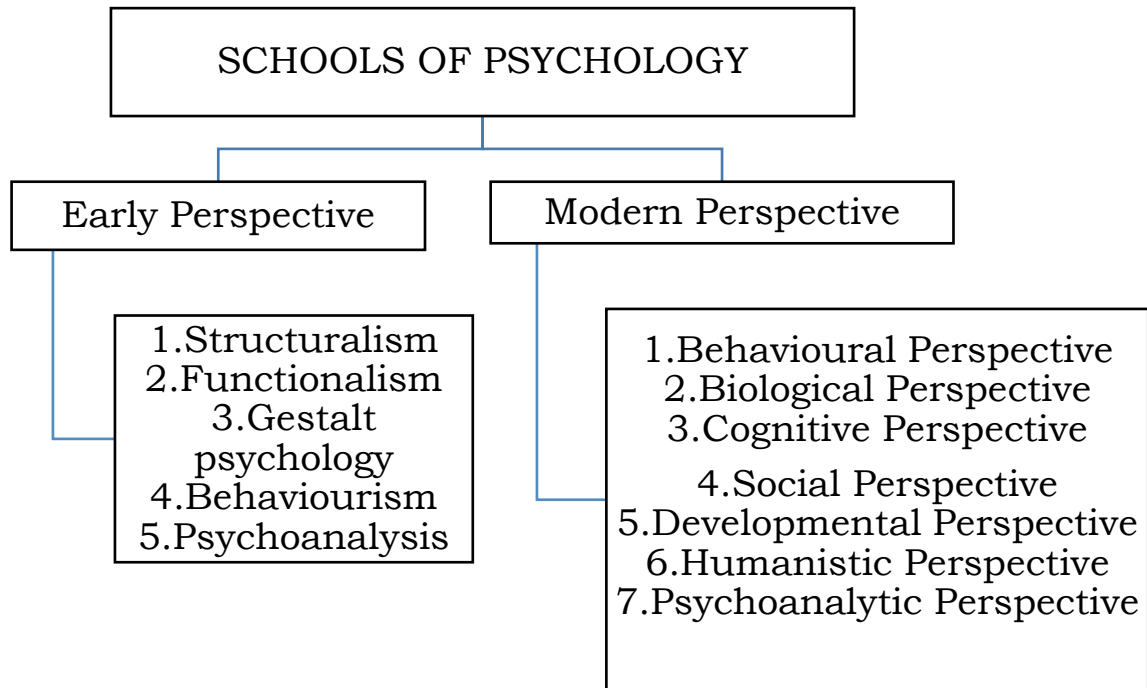
- Structuralism is widely regarded as the first school of thought in psychology. This outlook focused on breaking down mental processes into the most basic components.
- Founder of Structuralism: **Wilhelm Wundt and Edward Titchener.**
- The focus of structuralism was on reducing mental processes down into their most basic elements.
- The structuralisms used techniques such as introspection to analyze the inner processes of the human mind.

#### **BASIC PRINCIPLES:**

- To make psychology as a science
- Psychology must analyze the structure of mind.



## SCHOOLS OF PSYCHOLOGY



### Structure of mind:

- Study the elements of the mind.
- Psychology study about the mind and its elements
- The mind is our conscious.

Mind and conscious are three elements they are:

**1. Sensation:** That immediate experience produced by the stimulus on the sense organ.

**2. Image:** sensation-like experience not produced by the stimulus but by the mind.

**3. Feeling:** the pleasantness or unpleasantness of the mind.

### METHOD:

Structuralism proposed that psychology must use "introspection" [looking inward/self-analysis]

### CRITICISM:

Structuralism was criticized because it studies only the structure of mind and not the function of the mind

**FUNCTIONALISM:** Studying how the mind functions. Functionalism school was proposed because of the criticism of structuralism.

**FOUNDER:** Functionalism school was proposed by William James to establish the first laboratory at the Harvard University to USA almost at same time.

**BASIC PRINCIPLES:**

- Psychology must study the mind
- Mind is consciousness not static but kindly dynamic
- Like the stream of water consciousness calling as stream of consciousness
- The functionalist argue the consciousness function and are apply the consciousness and it becomes the beginning of applied psychology.

**METHOD:**

Functionalism school use the method of introspection and experiment.

**PSYCHO ANALYSIS:** Study of unconsciousness mind

The structuralism and functionalism gives more important to the consciousness mind. The psycho analysis gives more important to unconscious mind.

**FOUNDER:** Psychologist school was proposed by Sigmund Freud. Basically Freud was a psychiatrist and he develop the theory from its clinical experience pf treating the mentally ill.

**Basic principles:**

- Most of our behavior personality and mental illness comes from the unconsciousness mind.
- Psychoanalytic theory is the negative view of the human being and said to be the first force
- The unconsciousness mind contains mostly sex and aggression motives.
- The person is not aware of the condense of the mind.
- Early childhood experience placed an role in the development of personality, behavior and mental illness

**Method:**

Freud develop the theory by using “case study” method because he was treating mentally ill people.

**Application:**

The principles of psycho analysis are used for the treatment for the mental illness and the technique is known as “psycho analytic therapy”.

## **HUMANISTIC PSYCHOLOGY**

“Positive view of human nature”. The term humanistic comes from “humane” (means very kind) humanistic psychologist believes that people are basically good and that our every nature is such that we can reach perfection.

### **BASIC PRINCIPLES:**

- Humanistic theory positive view of the human being and it's said to be “third force in psychology
- Man is basically good and it's not motivated by sex and aggressive motive
- The main motive for the human being are self-developed and self-actualization
- Psychology study about the self-concept
- Humanistic approach phenomenological approach

### **Method:**

Humanistic approach the introspection and experimental method.

### **APPLICATION:**

Humanistic theory is used in the form of counselling particular non directive or client centered counseling developed by the Rogers.

### **BEHAVIOURISM:**

Studying overt (External behavior). Behaviorism school proposed psychology must study only external observable behavior.

### **Founder:**

Behaviorism school was proposed by American psychologist J B Watson.

### **BASIC PRINCIPLE:**

[Behaviorism](#) became a dominant school of thought during the 1950s. It was based upon the work of thinkers such as:

- John B. Watson
- Ivan Pavlov
- B. F. Skinner

Behaviorism suggests that all behavior can be explained by environmental causes rather than by internal forces. Behaviorism is focused on *observable behavior*. Theories of learning including classical conditioning and operant conditioning were the focus of a great deal of research.

The behavioral school of psychology had a significant influence on the course of psychology, and many of the ideas and techniques that emerged from this school of thought are still widely used today. Behavioral training, token economies, aversion therapy, and other techniques are frequently used in psychotherapy and behavior modification programs.

### **Gestalt psychology:**

[Gestalt psychology](#) is a school of psychology based upon the idea that we experience things as unified wholes. This approach to psychology began in Germany and Austria during the late 19th century in response to the molecular approach of structuralism.

### **Basic principles:**

- This school of psychology was founded in Germany about 1912 by max Wertheimer Kurt koffa and wolf gang.
- Gestalt psychologist maintained that the mind should be thought of as Resulting from the whole pattern of sensory activities and the relationship within this pattern.

### **MODERN PERSPECTIVE:**

Sam is a 10 year old boy studying in an elementary school. A strange behavior was observed in Sam. He always pushes Samantha, who belongs to Sam's class.

***This behavior of Sam is studied in various modern perspectives as follows:***

| S.NO | MODERN PERSPECTIVES | DEFINITION | STUDIED OUT OF EXAMPLE |
|------|---------------------|------------|------------------------|
|------|---------------------|------------|------------------------|

1. Behavioral perspectives Behavior is learnt in relation to psychology Whether Sam is rewarded by anyone for his aggressive behavior of Pushing Samantha.
2. Biological perspectives Bodily changes due to hormone influence. Male sex and hormonal influence is high in Sam as female sex hormonal influence is less in Samantha.
3. Cognitive perspectives Involves higher level memory Whether Sam planned for This aggressive behavior in advance. thinki ngperspective
4. Social perspectives Influenced by people and the environment Whether Sam shows the the same attitude to other classmates also or it is only Samantha always.
5. Developmental perspectives Characteristic chan ge during development. Due to egocentrism at childhood he may behave aggressive but he may Change when he grows up.

6. Humanistic perspectives      A person's sense of Self.      He pushes her to show his Competence, achievement and self-esteem.
7. Psychoanalytic perspectives      Focuses on the role of feelings and impulses which one thought to be unconscious.      May be due to suppression of unfulfilled emotions in his unconscious mind. He might have been pushed by someone like that and thus he is showing it as displaced aggression towards Samantha as she is weaker Than him in all aspects.

#### **SCOPE OF PSYCHOLOGY & BRANCHES OF PSYCHOLOGY**

| <b>BASIC PSYCHOLOGY</b>  | <b>APPLIED PSYCHOLOGY</b>      |
|--------------------------|--------------------------------|
| Developmental psychology | Clinical psychology            |
| Social psychology        | Counselling psychology         |
| Physiological psychology | Educational psychology         |
| Abnormal psychology      | Industrial psychology          |
| Experimental psychology  | Organizational psychology      |
| Psychometrics            | Consumer psychology            |
| Cognitive psychology     | Health psychology              |
| Personality psychology   | Environmental psychology       |
| -                        | Forensic psychology            |
| -                        | Sports and exercise psychology |
| -                        | Psychology of Women            |

**Basic Psychology:**

Basic psychology is aimed at contributing to the knowledge of behavior.

**Developmental psychology:**

Developmental psychology studies the human development, physical, emotional, social, moral language and personality development across the life span that is from conception to death. This field is focused primarily on child development but today devotes a great deal of research to adolescence, adulthood and old age.

**Social psychology:**

This field focuses on interpersonal behavior and the role of social forces in governing behavior. Typical topics include attitude formation, attitude development, prejudice, leadership, conformity, attraction, aggression, intimate relationships and behavior in groups.

**Physiological psychology:**

Examines the influence of genetic factors on behavior and the role of the brain, nervous system, endocrine system and bodily chemicals like neurotransmitters in the regulation of behavior.

**Abnormal psychology:**

This field is also known as psychopathology and it studies the models, causes, classifications, diagnosis and the treatment of individuals with psychological disorders mostly in the classroom setting.

**Experimental psychology:**

It restrict themselves chiefly to laboratory research on basic psychological processes, includes perception, learning, memory, thinking, motivation and emotion. Though this field is called experimental psychology, it is not the only field that uses experiments. Psychologists in almost all fields of psychology conduct experimental research.

**Psychometrics:**

It is concerned with the measurement of behavior and capacities usually through

the development of psychological tests. Psychometrics is involved with the design of tests to assess personality, intelligence and wide range of abilities.

### **Cognitive psychology:**

It focuses on “higher mental processes” such as memory, reasoning, information processing, language, problem solving, decision making, creativity and artificial intelligence.

### **Personality psychology:**

The field is interested in describing and understanding individual’s consistency in behavior which represents their personality. The area of interest is also concerned with the factors that determine personality and with personality assessment.

### **Applied psychology:**

In this we make use of various fields of basic psychology to improve the quality of life of the human being in various settings.

### **Clinical psychology:**

It is concerned with the evaluation, diagnosis and treatment of individuals with psychological disorders. Principal activities include interviewing clients, psychological testing and providing group or individual psychotherapy. The concepts and the techniques are mostly learned in the clinical setting like the mental health institutes.

### **Counselling psychology:**

Counselling psychologists usually work with somewhat different clients, providing assistance to people who face everyday problems from moderate to severity.

### **Educational psychology:**



It mainly devoted to an understanding of the different aspects in the teaching-learning process. It is concerned with the application of the principles, techniques and methods of Psychology to the teaching- learning process.

### **Industrial psychology:**

It is the study of individuals at work in industry and in other business and commercial organizations. It is concerned with recruitment, selection, placement of workers, working conditions, principles of training, physiological, psychological and social factors affecting individual efficiency. Their major aim is to facilitate greater individual efficiency and obtain more production with economy in effort and time.

Industrial psychology is further divided into

1. Personnel psychology and
2. Engineering psychology

***Personnel psychology*** deals with problems of selection and the training of workers and uses the knowledge of the psychology to measure the individual differences.

***Engineering psychology*** is the study of man- machine system for the purpose of designing machines and equipment's on the basis of capacities and limitations of human beings.

### **Organizational psychology:**

It tries to study and solve the different organizational problems, from their experiences in industry. Psychologist found that they can contribute considerably to improve the effectiveness and efficiency of all forms and types of organizations. The major contribution of organizational psychology is that the manner in which organizations are formed and regulated is a crucial factor in their effectiveness.

### **Consumer psychology:**

It studies the behavior that consumers display in searching for purchasing, using, evaluating and disposing of products, services and ideas that they expect and which satisfies their need

**Health psychology:**

It is the field that studies the role of psychological factors in the promotion of health and the prevention of illness. Health psychologist favors a biopsychosocial model of health and illness which emphasizes the interaction of biological, psychosocial and social factors. The chief topics interest to health psychologists are the relationship between stress and illness.

**Environmental psychology:**

Environmental psychologist's works in school, industrial and government setting. They design work environments and study the effects on behavior of crowding, noise and air pollution.

**Forensic psychology:**

It applies psychology to the legal systems. The topics they study include the jury deliberation process and the best way to select jurors. Some forensic psychologists train police to handle domestic disputes, negotiate with hostage takers and develop simulators to teach officers the good judgement in the use of firearms and the best way to obtain eye witness testimony from children.

**Sports and exercise psychology:**

This field applies psychology to athletic activity and exercise. It considers the role of motivation and the social aspect of sports and physiological impact of training on muscle development.

**Psychology of women:**

It discusses the psychological factors relating to women's behavior and development. It tries to explain various issues like discrimination against women, structural differences between men and women, and the effect of hormones on behavior, causes of violence against women and so on.

## UNIT II

### ATTENTION, SENSATION AND PERCEPTION

**Attention:** Definition -Characteristics of attention-Factors influencing attention-Attention and the processing of information- Filter model. **Sensation:** Definition-Sensitivity-Signal detection theory- Sensory Coding.

**Perception:** Definition- Characteristics-Principles of organization  
Constancies Errors in perception.

### ATTENTION

Attention is the term given to the perception process that selects certain inputs for inclusion in our conscious experience or awareness at any given time

#### Characteristics of attention

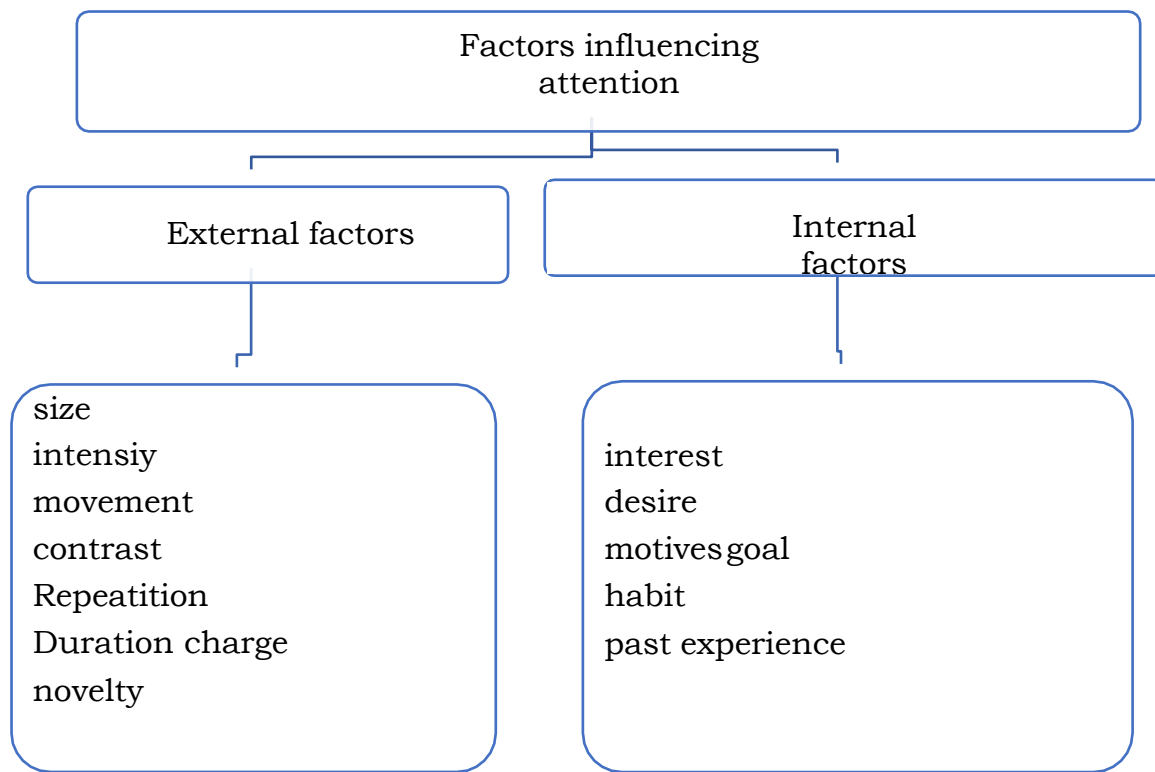
The process of attention divided into a focus and a margin

- a) **Focus:** events that we are perceived clearly are the focus of experience
- b) **Margin:** other items are perceived dimly; we may be aware of their presence but vaguely so. These items are in the margin of attention

**For eg:** You are watching a football game and your attention is on the ball and not on the person next to you or on the audience shouting. Later after the play is finished you may notice other things around you

- Our attention is constantly shifting
- What is at the focus one moment may be in the margin the next and what is in the margin may become the focus

#### Factors influencing attention:



## **ATTENTION AND PROCESSING OF INFORMATION**

- Filtering
- Parallel processing
- Serial processing
- Filter model
- Processing capacity

### **Filtering:**

Perception has a focus and that this focus switches from time to time.

Since we cannot process all the information here our sensory channels are acting as filter or parallel block out and some inputs while letting others through. This is also called as “shadowing”.

### **Parallel processing:**

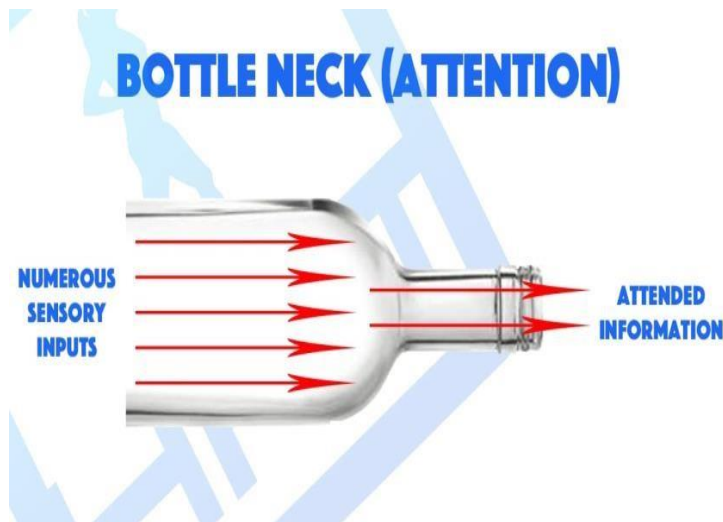
Imagine yourself at a party standing between two groups of people who are simultaneously carrying on two different conversations you may be able to pick up some of both conversation at the same time. It is called parallel processing

### **Serial processing:**

Probably you will find that one or the other conversation is at the focus of your attention at any given moment; it's hard to pay attention to more than one set of inputs at a time. It's called as seriously processing

### **Filter model:**

#### **Filter out conversations:**



Whether you process the conversation serially or listen to only one of them. You are filtering out the unattended conversation. You have put the input in to the margin of your attention and it's called filter out conversations. This theory of bottle neck was proposed by

Broadbent in 1958.

In the filter model of attention, inputs in the margin shift to the focus when various attention getting features of environment are present in the filtered input.

Filter models of attention differ with respect to where the blocking occurs in the sensory channels.

Some theories say that the filters or information bottleneck is at the sense organ or at least in the early stages of the input processing.

### **Processing capacity:**

We have limited mental capacity for processing information and therefore we cannot deal with all the sensory input at once instead we must allocate our limited resources. It's called processing capacity.

## SENESATION

Sensation is the process of responding to a simple physical stimulus such as a spot of light or a musical note. It focuses on describing the relationship between various forms of sensory stimulation and how these inputs are registered by our sense organs.

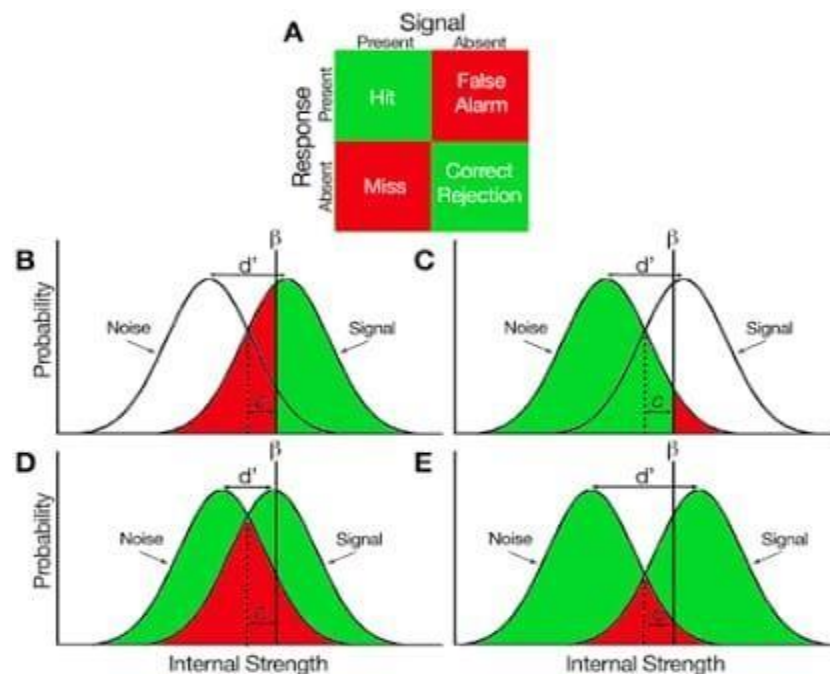
### DEFINITION:

Sensation as the immediate experience elicited by the stimuli on the sensory receptors

### SINGNAL DETECTION THEORY

- Sensory experience does not depend on stimulus alone, however. A person's ability to detect a stimulus also depend on motivation
- The individual does not simply receive a signal passively. Rather, the individual perceptual system makes a decision as to its presence through the decision making process is usually entirely unconscious.

Eg: 1.After watching a horror movie 2.Presence or absence of a stimulus (bell sound)



- Signal detection theory is concerned with the factors that influence sensory judgement.

Hit  $\square$  Signal present yes

False alarm  $\square$  signal absent yes

Neural constancy: sending signals even when stimulus is absent. This is called neural noise.

Detection of signal depends on both physical and psychological state of individual. Nervous system sorts or filters complex natural stimuli in order to extract. Sensory receptors adaptation  $\square$  cocktail party and effects.

## **SENSORY CODING**

When any stimulus reaches a receptor the following events take place.

### ***Reception:***

Specialized cells and called receptors absorb the physical energy

### ***Transduction:***

- ☐ Physical energy is converted into electrochemical energy represented by the firing pattern of different neurons
- ☐ Each receptors is specialized to absorb and transducer only one kind of energy ie. Visual receptors in the retina are not activated by sound
- ☐ The strength of the receptors potential ( a bright spot of light or a dim spot of light) determines how strongly the receptors are activated

### ***Coding:***

- ☐ Coding refers to one to one correspondence between one aspects of the physical stimulus and some aspects of neural activity
- ☐ A key aspect of sensory coding is that a given frequency of impulses in one neuron may mean something different than the same frequency of impulses in another neuron
- ☐ This is the law of specific nerve energies
- ☐ This means that an action potential always conveys the same kind of information

### ***Qualification:***

- a) Cells with the spontaneous firing rate may signal one kind of stimulus by increasing their firing rates and a different kind of stimulus by a decrease in their firing rate
- b) In some cases information depends upon the timing of action potential and not just the total numbers

Eg: in the retina , neuron A firing just before neuron B may signal movement

- c) The exact meaning of an impulse in a single neuron depends upon which other neurons are active , so the sensation of green or yellow depending upon the activity of other neurons

## **Synaesthesia :**

- A neurological disorder is called synaesthesia

## **Awareness:**

- Most stimuli that are: received, transduced , coded, perceived

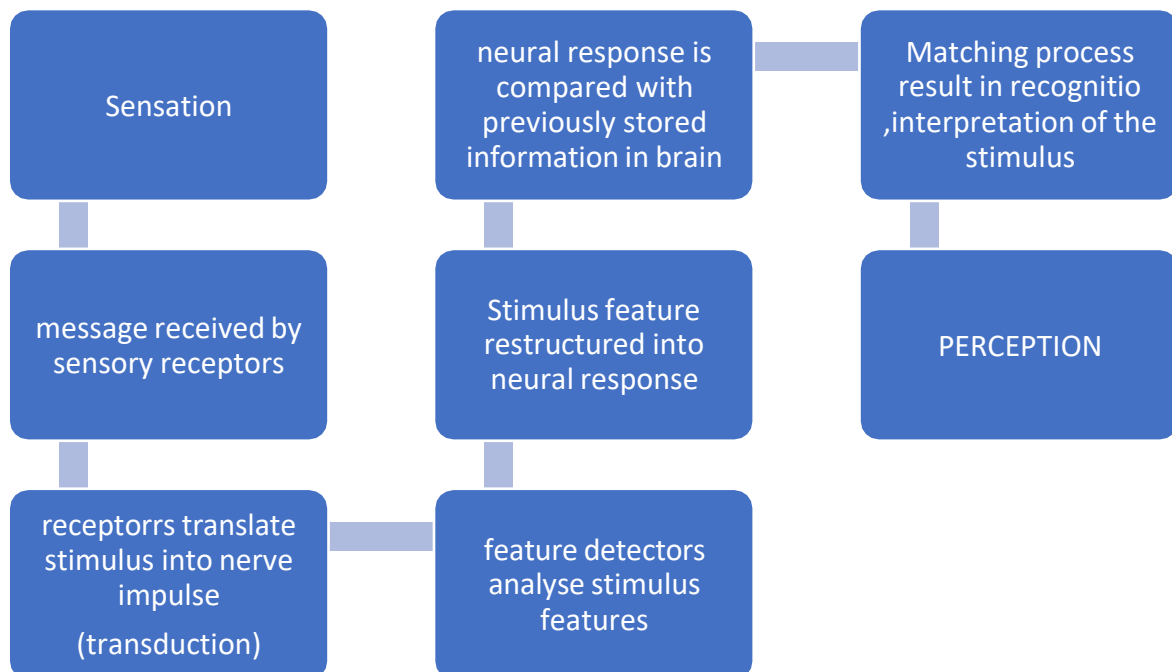
## **For eg:**

**Reception:** Smelling a flower scent molecules strikes olfactory reception in the nose.

**Transduced:** This produced a chemical reaction that depolarizes the resting potential of the olfactory receptors, they fire and this information is passed

**Coded :** the passed information goes via the olfactory nerve to the olfactory bulb at the base of the brain

**Awareness:** the olfactory bulb then sends connection to various parts of the prefrontal cortex where smells are recognized





## **PERCEPTION**

We have focus on the sensory processing, they convert the physical stimulus like (light, sound) into the nerve impulse or electrical energy. The sensation contributes to our conscious

### **For eg:**

Stop for a moment and look around you is there any meaning in it? Without sensation there will be no perception. Now, turn on the radio and we are able to understand the speech unless it is in foreign language. Thus we see and hear more than the sensation. (i.e) we are able to understand

### **DEFINITION:**

- Perception may be defined as the cognitive process of selecting, organizing and attending the meaning to the stimulus, person or situation or event
- Perception can be defined as the interpretation of the stimulus of the sensory information

|   |
|---|
| <p><b>Perception = sensation + meaning (or)</b></p> |
| <p><b>Sensation + meaning = Perception</b></p>      |

### **Characteristics of the perception**

- ❖ Normally perception requires stimulus, person, situation and events
- ❖ Perception is selective
- ❖ Our thoughts, emotions and our actions are influenced by perception

### **ORGANISING PRINCIPLE**

In perception the sensory information received from the environment is organized. The organizing principle is based upon gestalt principle. Gestalt was proposed but Max Wertheimer has proposed gestalt principle. i.e we perceive everything as a whole and not into parts and bits.

*The following are the organizing principle*

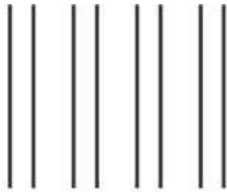
- ❖ Figure and ground relationship
- ❖ Grouping
  - a) Similarity B. Proximity

C). Continuation

b) Closure

c) Context

❖ Contours



Proximity



Similarity



Figure-ground



Continuity



Closure



Connectedness

## 1 Figure and ground relationship

In perception the stimulus is the figure, the background is the ground. In the black board letters after the stimulus and black board is the ground. Similarly if we see the sky the moon is the figure and the sky is the background

## 2 grouping

The tendency to group the incoming stimuli into some pattern is the another organizing tendency in the perception of object

It includes the following:

a) *Similarity*

Similarities which are similar tend to perceive as forming a group.

b) *Proximity*

The principle of proximity applies where similar objects appears together are close together in space.

c) *Continuation*

It is the tendency of organism that fragmentary it's stimuli into a familiar pattern is called the continues pattern

*d) Closure*

In the Principle of closure we have the tendency to fill the gap and perceived as a whole

*e) Context*

The stimulus is analogous some time it gives meaning to the stimulus based upon the context and the environment

### **3. Contours:**

- A contours is the boundary between a figure and it's ground.
- contours help in differentiating one object from other object.

### **CONSTANCY**

In perceptual constancy we tend to give the same meaning Perception constancy include the following

- Color constancy
- Size constancy
- Shape constancy

| <b>Constancy</b>   | <b>Example</b>   |
|--|--|
| In color constancy the color of the familiar stimuli is perceived as the same despite, the variation in the sensation of the retinal image | <i>When we see the milk under the different color lights the color of the retinal image varies. But constancy perceived after same that the milk is white in color</i>   |
| In size constancy the size of the familiar object is perceived as the same despite the variation in the size of the retinal image          | <i>When the individual is nearer to the rail engine the size of the retinal image will be big when the individual looks at the railway engine from the distance the retinal image will be small but we constantly say that engine is big in size</i> |

|   |   |
|---|---|
| In shape constancy we perceive the shape of the familiar object constant despite the variation in the retinal image | <i>The pen or the pencil shape is cylindrical when we see the pencil in the different angle the shape of the retinal image varies but we give the same meaning of the pen</i> |
|---|---|

## **ERROR IN PERCEPTION**

There are more possibilities for subjective errors in perception while giving meaning. Following are the errors:

- Illusion
- Hallucination
- Illusion in perception of motion.

| <b>Errors</b>   | <b>Example</b>       |
|---|----------------------|
| <p>Illusion is an error in perception and can be false perception or wrong perception.</p> <p>In illusion stimulus is present but it is perceived wrong. Thus illusion is distorted perception</p>  | Muller lyer illusion |
| <p>An individual will have clear perception in the absence of stimulus. And its experience is a symptom of abnormality.</p> <p>The hallucination also involves all the sensations namely</p> <ul style="list-style-type: none"> <li>❖ Visual hallucination</li> <li>❖ Auditory hallucination</li> <li>❖ Olfactory hallucination</li> <li>❖ Tactile hallucination</li> </ul> | schizophrenia        |
| Illusion is also experienced in the perception of the moving light  | Phi phenomenon       |

## **DEPTH PERCEPTION**

It's the ability to see three dimensional spaces and to accurately judge the distance. Like that without depth perception we are unable to drive a car, ride a bicycle, and thread a needle. World will be like a flat surface. How do we make the transformation through the two dimension to threedimension?

The ability to view the world in 3 directions and perceive distance is known as depth perception or distance perception.

To perceive depth or distance we make use of many ones and they are broadly divided into 2 groups

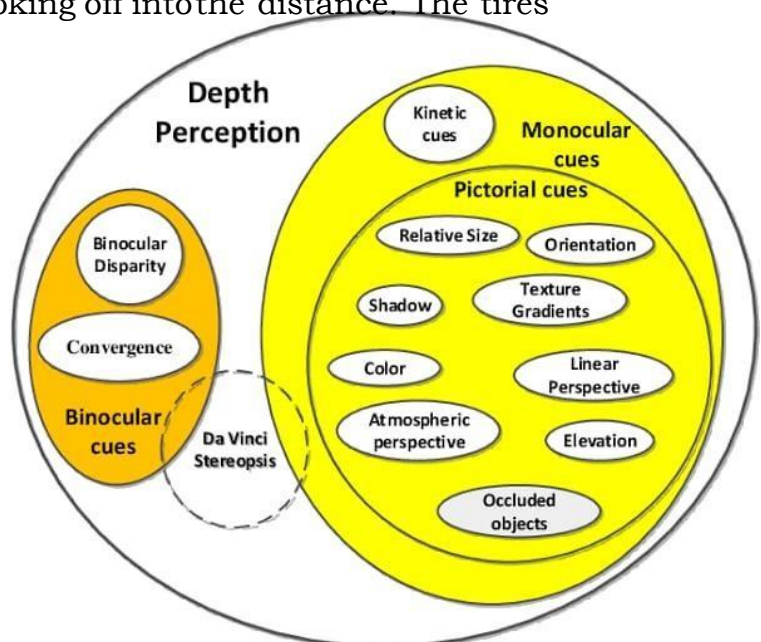
1. Monocular
2. Binocular

### **Monocular :**

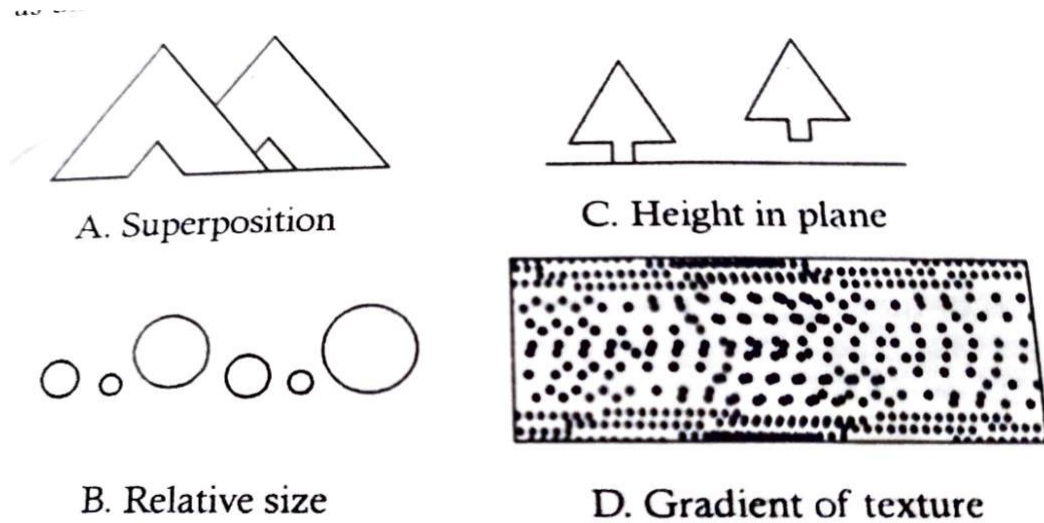
- *Motion parallax:* When we are traveling in a vehicle three object far away appear to move in the same direction were as the closer objects move in the opposite direction
- *Relative size:* In two objects, one is seems like smaller image when it is far than theother object, but both are same size
- *Linear perception:* The distance separating the images of far objects appear to be smaller. Imagine that you are standing between Railroad tracks and looking off intothe distance. The tires would seems to gradually become smaller and the tracks whose seed to run closer together until they appeared to meet at thehorizon

### **2. Binocular**

- It's also known as binocular parallax.
- Our two eyes observe the objects from slightly different position in



space. The difference between two images interpreting basically provide cues to depth



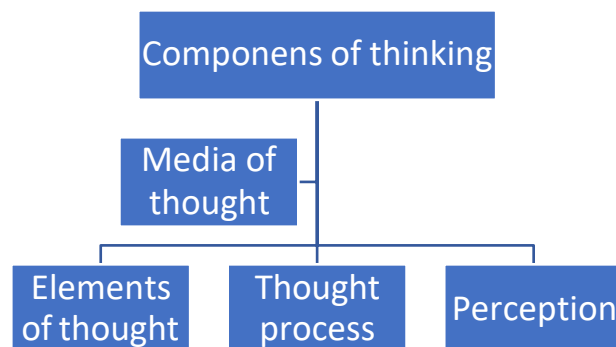
**Fig. 1.16: Visual Distance Perception**

### **UNIT-III: THINKING**

Thinking: Definition-Thinking process-Reasoning-Problem Solving-Decision Making- Creative thinking-Stages in creative thinking-Critical thinking-Meaning of concepts-Concepts formation-Language-Development of Language-Component of language-Language and thoughts.

#### **DEFINITION:**

- Thinking is the most complex form of human behaviour and highest form of mental activity which includes decision making, problem solving, creating new ideas, reasoning, language intelligence etc.,
- It is purposeful mental manipulation of words and images.



#### **I. MEDIA OF THOUGHT:**

The media for thought is language which includes signs and words. Most commonly used words. The two types of used words are

- ❖ Connotative (gives direct meaning)
- ❖ Denotative (Emotional touch and grading depend on the individual) Denotative is further divided into
  - Evaluative dimension eg: bad, clear, dirty
  - Potential dimension eg: strong, weak, powerful, light
  - Activity dimension eg: fast, slow, active, sharp and dull.

Words are also classified as

- ❖ Concrete – same as connotative
- ❖ Abstract – same as denotative eg: love, God and integrity.

## Piaget's stages of intellectual development

- A. Child learns concrete words first in early stages
- B. Later years they learn abstract words.

## **II. ELEMENTS OF THINKING:**

The three elements of thinking are

- Concepts
- Prepositions
- Images

### **(i) Concepts:**

- Concepts plays a central role in our task of understanding the world around us and representing it mentally.
- Mental categories for objects and events those are different but similar to one another in certain aspect. *For example: Tomato-vegetable, Apple-Fruit.*

### Types of concepts:

- Logical or artificial- It has defined by set of rules and regulation. *For example shapes, vegetables.*
- Natural-It has no set of rules and regulation. *For example Music, art, dance.*

### Concepts Process:

The concept formation includes

- Abstraction
- Generalisation

### Abstraction :

- It involves analytical process analysing the quality of the object on basis of perception based on difference and similarity. *Example Dog->tail, 4legs, it barks etc., cat->eyes, moustaches.*

### Generalisation:

- Quality refers to number of similar object. *Example: child mistaken the horse and donkey look alike and it looks same to the child*

### **(ii).Prepositions:**

- It is a link or relation but different concepts.
- There is a need to connect one concept to the other. *Example: Ram and Sita are using bad words. When we see them, we notice that by their facial expression we came know whether they were quarrelling or fighting.*

### **(iii).Images:**

- Images are the mental pictures of the world which involves the manipulation of visual images. *Example: imagining pictures as we like.*



## **Types of Thought process**

The two types of thought process are

- Personal Thinking
- Directed Thinking

### **Personal thinking:**

The thinking process takes place without any specific purpose but just for the satisfaction (or) time pass

### **Directed thinking:**

The thinking process takes place for a specific or concrete purpose of problem solving. It is further divided into

- Critical thinking
- Creative thinking.

### **Creative thinking:**

- It is a mental and social process involving generation of new ideas and concepts or new associations of creative mind between existing ideas or concepts.
- Creativity is an act of producing new ideas, approaches or actions.

### **Innovation:**

It is a process of generating and applying such creative ideas in some specific contexts.

## **Types of creative thinking:**

The two types of creativity thinking are

- i. **Exceptional creativity** – it is something new such as integrated circuit or other countless inventions that changed the world.
- ii. **Mundane creativity** – the day today new thing that we normally do

## **Nature Of Creative Thinking:**

J.P. Guilford has tested creativity in the people out of his work, he found out, two types of creative thinking. Namely

- Convergent and
- divergent things.

### **Convergent Thinking:**

- ✓ Connecting many different points into a single entity.
- ✓ That is gathering different information relevant to a problem and solving it.

### **Divergent Thinking:**

- ✓ Bifurcating the thinking from the single place point and developing different ideas using those. *Example: varied thoughts about a problem.*

### **Stages Of Creative Thinking:**

According to Graham Wallas, There are five stages,

- ✓ Preparation (or) collection of facts,
- ✓ Incubation
- ✓ Illumination
- ✓ Evaluation
- ✓ Remission

□

#### **(i) Preparation (Or) Collection Of Facts:**

All the facts, the material necessary for a problem is connected. **(ii) Incubation:**

The collections of facts are set to addition and deletions in the mind to get it mature for the outcome.

#### **(iii) Illumination:**

Illumination gives rise to the fact related with the problem (or) idea for the solution suddenly comes up into conscious.

#### **(iv) Evaluation:**

A stage to analyse whether if such thinking is satisfactory to solve the problem.

#### **(v) Remission:**

It is correction of the solved problem with the final modifications

### **Attitude That Blocks Creativity:**

- Consider the problem as silly
- Negative thinking
- The feeling that I have no role
- I am not creative
- Think off activities as childish

- Fear of what others think
- Fear of failure.

### **Myths about creativity:**

- There is only one solution to a problem.
- The best solution has already been found.
- Creative answers are complex technologically.
- If ideas are not generating then I am not creative.

### **Positive attitudes for creativity or characteristics of a creative person:**

- Curiosity
- Challenge
- Constructive discontent- an ability to foresee a need for improvement.
- A belief that suspend judgement and criticism.
- Seeing good in bad
- Problems lead to improvement
- Problems can also be a solution
- Problems are interesting.

### **Critical Thinking**

It is a evaluate thinking, it is the ability to analyse facts, issues and experiences rationally based on the positive and negative aspects in an independent way. It analysis clarity, credibility, accuracy, precision, relevance, depth, breath, logic, significance and fairness.

- Critical thinking helps to acquire knowledge and strengthen our conceptual frame workand perception
- It helps adolescence recognise and assess the factors that influence their attitude andbehavior to acquire right attitude and responsible behavior
- It settle health related issue and value based life

A person with good memory and lot of facts need not be a good critical thinker, but one who reduce the consequences and knows how to make use of the information and solve the problems

### **Stages/Steps in Critical thinking**

Critical thinking is based on the result of concept formation about each issue in the society

- Perception
- Analysis
- Comparison
- Synthesis
- Naming

### **Why Study Critical thinking**

- Need for day today life
- Enhances presentation skills
- Helps for self evaluation and reflection
- Promotes creativity
- It is necessary to cope with the changing global situation
- Need to solve problems
- Improves quality of life

### **How to develop critical thinking skills**

- One should learn the art of suspending judgements
- Ways of doing this includes adopting a perceptive rather than judgemental orientation
- Interested in finding solution
- Share ideas
- Assess statement and argument
- Seek understanding and information
- Listen to other, think to what they say, give feed back
- Become open minded listener and reader

### **Barrier to Critical thinking**

- Egocentric (self-centered thinking)
- Socio centrism (group centred thinking) when all think alike then no one is thinking

### **I. PERCEPTION:**

Perception is the final product of process of thinking which adds to the mind, which has conglomeration of concepts.

### **THINKING PROCESS**

### **III. THINKING PROCESS:**

The three stages of thinking process are

- II. Reasoning
- III. Decision making

#### IV. Problem solving

##### ii. Reasoning:

It is the stage where people transform the available new information in relation to the stored concepts in the mind to reach the conclusion.

##### iii. Decision Making:

It is the process of choosing between different alternatives because of reasoning.

##### iv. Problem Solving:

It involves process of using selected alternative for decision making process in an appropriate way in order to achieve the goal.

The three stages of thinking process are

- I. Reasoning
- II. Decision making
- III. Problem solving

## REASONING

- It is the stage where people transform the available new information in relation to the stored concepts in the mind to reach the conclusion.

### Types of reasoning:

The two types of reasoning are:

- Induction
- Deduction

**Induction**-It is the process of reasoning whereby we arrive at Universal generalization from particular fact.

Eg: In number of cases we observe educated girls have got expensive habit. Thus one may conclude all educated girls got expensive habit.

**Deduction**- It is the process through which we reach up a particular conclusion with the help of universal fact.

Eg: All men are mortal John is a man

John is mortal.

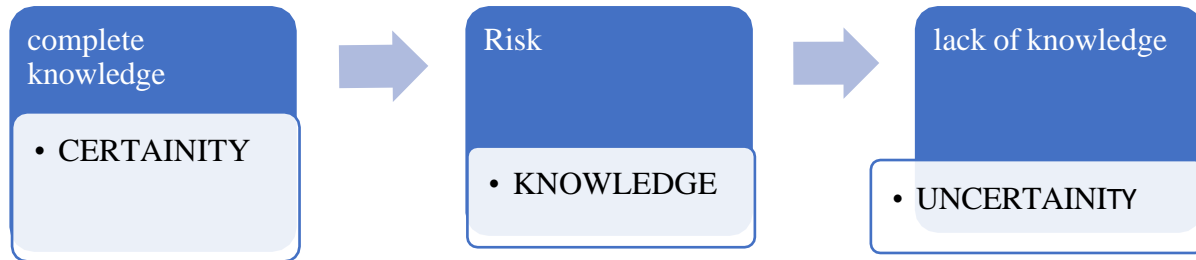
## DECISION MAKING

- Decision making is our ability to choose the best alternative solution to a problem from the alternative options, with due consideration of the consequences of different decisions.

**Types Of Decision Making:**

| S.No | Types off decision making | Features   | Example                            |
|------|---------------------------|--|------------------------------------|
| 1.   | Mechanistic Decision      | <ul style="list-style-type: none"> <li>✚ Limited variable</li> <li>✚ ✚ Outcome known</li> <li>✚ Applied day today</li> </ul>   | Choosing items in grocery shop     |
| 2.   | Analytical decision       | <ul style="list-style-type: none"> <li>✚ Large variable</li> <li>✚ ✚ Complex problem</li> <li>✚ Careful analysis based on existing standard. Outcome unknown</li> </ul>        | ✚ Production, engineering problems |
| 3.   | Judgemental decision      | <ul style="list-style-type: none"> <li>✚ Limited variable</li> </ul>   | Investing money in share           |
| 4.   | Adaptive decision         | <ul style="list-style-type: none"> <li>✚ Large variable</li> <li>✚ Outcome not prediction</li> <li>✚ Need contribution of many people with knowledge and background</li> </ul> | Research and development           |

### **Decision making on different situations:**



### **Decision making under certainty:**

When decision making knows the outcome of the possible alternatives, it is decision making under certainty. The decision maker has perfect knowledge and outcome.

### **Decision making under risk:**

When a single action has more than one outcome and the outcome is known which may be more favorable or less favorable. Decisions under conditions are risk at common.

### **Decision making under uncertainty:**

When single uncertain action has more than one outcome and is unknown. It is difficult one. It occurs in case there is no historical data available.

## **PROBLEM SOLVING**

It involves process of using selected alternative for decision making process in an appropriate way in order to achieve the goal.

### **STAGES OF PROBLEM SOLVING:**

**The four stages of problem solving are**

- ✓ Identification of the problem. eg. Car does not start.
- ✓ Generating potential solution stored in long term memory are retrieved.
- ✓ Evaluation of each alternative and the outcome.
- ✓ Solution and evaluation finally try the potential solution.

## **STRATEGIES FOR PROBLEM SOLVING:**

**The strategies used for problem solving are**

✚ **Trial and error method:** all the possible solution tried until success.

✚ **Testing hypothesis:** systemic approach to problem using specific hypothesis, less timeconsuming. Eg. Helping a stressed friend.

✚ **Searching for analogies:** using the solution of previous problem to solve current problem.

It is a form of heuristics.

✚ **Algorithms:** set of rules followed correctly gives a solution to problem. Eg. Maths

✚ **Heuristics:** are usually strategies based on our experience with problem that led to solutiondividing the problem into smaller sub-problem and sub goal. Heuristics applied help us toreach the goals.

## **LANGUAGE COMMUNICATION:**

It is our ability to use a system of symbols and rules for combining them in order tocommunicate information.

### **Functions:**

Two Functions

- Allow us to communicate
- Provides rules and symbols that facilitate thinking.

### **Development in language:**

Child should learn pronunciation, comprehension, sentence formation.

#### ***The beginning:***

Infant cry □ due to hungry, pain

and anger4- 6 weeks

□vocalisation

16-20 weeks □ vowel sounds

6 months □ babbling (da-da bba-bba,ma-ma)

#### ***Ist word:***

Around 1<sup>st</sup> birthday-

papa,dada,ballTelegraphic

speech:

2<sup>nd</sup> year □ moving from words to simple sentences without proper grammar eg:  
see dog

#### ***Expanded language:***

- From age 2 language develops rapidly.
- Several hundred words are spoken every 6 minutes.
- Program two word sentences to complex sentences.



### **BASIC COMPONENT FOR LANGUAGE DEVELOPMENT:**

The basic components for language development are

- Phonological
- Semantic
- Grammar

|              |  |
|--------------|--|
| Phonological | <ul style="list-style-type: none"><li>➤ 3-6 Months(Babbling)</li><li>➤ Vocabulary increases</li><li>➤ Pronunciation improves till childhood.</li></ul>   |
| Semantic     | <ul style="list-style-type: none"><li>➤ Age 6 nearly 14000 words which the baby learns.</li><li>➤ First words will be objects words like pen, paper, and apple.</li><li>➤ Second words, they will learn action words like running, eating, playing.</li><li>➤ After 2 years, they will learn state words like hot, cool, adjective words, describing words</li></ul> |
| Grammar      | <ul style="list-style-type: none"><li>➤ After 6 years, they will talk clearly with grammatical words.</li></ul>  |

### **LANGUAGE AND THOUGHT:**

There is relationship between our language and thought which is called “linguistic relative hypothesis”. People who speak different languages look into and perceive the world in different ways because their thinking is determined by words available to them.

### **SPECIALIST INVOLVED IN LANGUAGE:**

| LINGUISTIC   | PSYCHOLINGUISTIC   |
|--|--|
| ❖ Linguistics is a person who studies fundamental nature and structure of human. | ❖ Psycholinguistic is study of how the people actually speak and use the language. |
| ❖ They will have abstract knowledge of the language.                             | ❖ They concentrate on the performance  |
| ❖ Formal rules they will follow.   | ❖ How and which rules others follow  |

## **UNIT – IV LEARNING**

Learning: Definition-Theories of learning-Associative learning: Classical conditioning-Operant Conditioning- Cognitive learning: Cognitive Maps-latent learning-Insight learning-Observational learning-Trial and error learning.

### **INTRODUCTION:**

We learn many motor skills, verbal skills, opinion or attitude and self-concept and even the personality [values, norms etc]. Thus most of our behavior activities are learned and exceptions are reflex activities, salivation, eye wrinkling, and knee-jerk with drawl reflex, sneezing and vomiting. Many people believe that learning starts with our entry into the school but it is beginning of formal learning.

Learning starts with our birth and continues till the end. Even the animals have the capacity to learn simple learning not the complex learning.

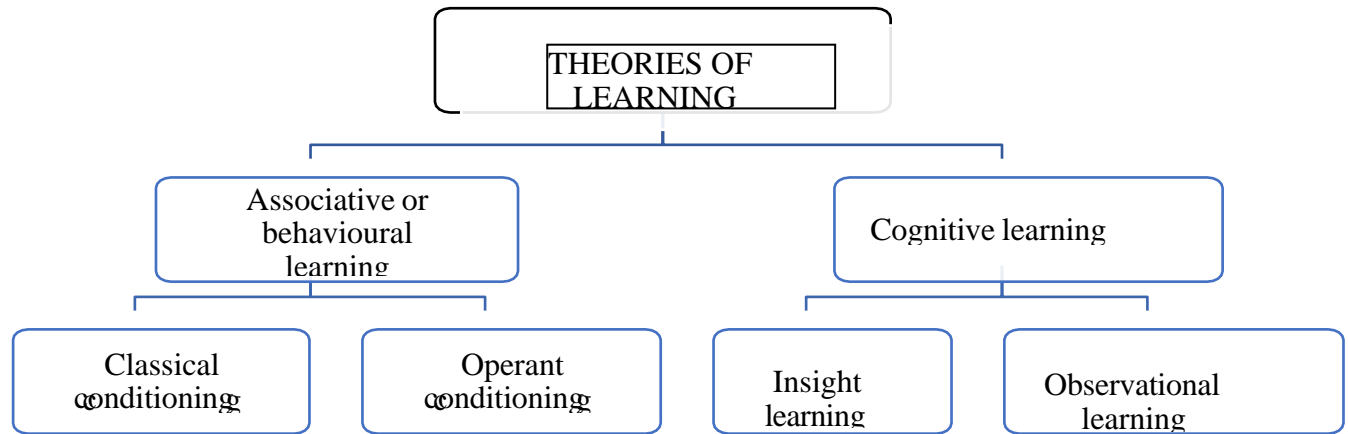
**DEFINITION:** The relatively permanent change in behavior which occurs as the result of practice and training

### **CHARACTERISTICS OF LEARNING**

- It basically involves a change in the behaviour and change may be for the best or worst.
- The change in the behaviour is relatively permanent.
- The change in the behaviour should come through practice or training
- The practice or experience changes in the behaviour due to illness, alcohol, brain damage cannot be called as learning
- Learning can be learnt, unlearnt Or modified

### **THEORIES OF LEARNING:**

To explain the learning process we have many theories.



## **ASSOCIATIVE LEARNING**

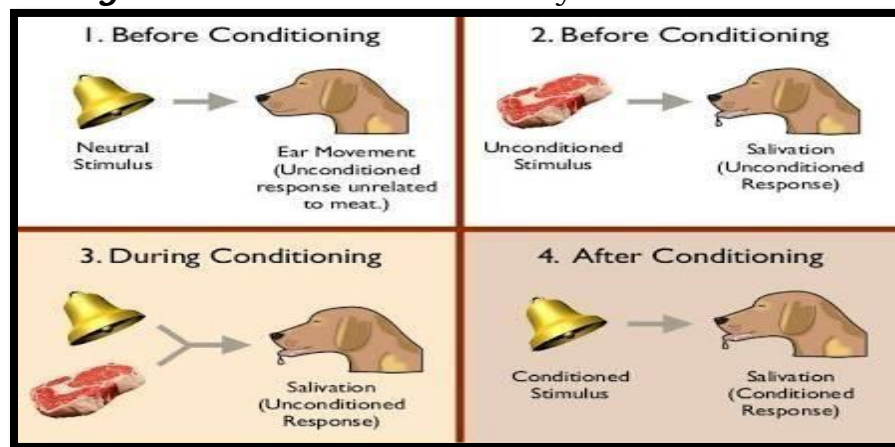
The first group of theory is association learning and learning basically involves making connection

- Classical conditioning
- Operant conditioning

## **CLASSICAL CONDITIONING**

- The first experimental study is on the learning with the classical conditioning proposed by Ivan Pavlov the Russian physiologist in 1905 who was doing the research in physiology of digestion by using hungry dogs.
- The theory got the name classical because it is 1<sup>st</sup> experiment study of learning and before Pavlov's work. We had philosophical explanation like "tabula rasa" (blank slate) for learning.
- Conditioning refers to the process of connecting or joining the response to the unrealistic or artificial or natural stimulus.

- **Experiment:** Pavlov used the hungry dog for his experiment through the operation a tube was inserted into the salivary gland. So that saliva would be collected in measuring jar. The dog was made to stand on a table in a box. Pavlov presented the food to the dog and the dog salivated. Pavlov called it as unconditioned stimulus [UGS]. The salivation to the food called as unconditional response[UR]. Then Pavlov presented the food along with the bell sound and after some trial the dog salivated to the bell sound. The Pavlov called the bell sound as the conditional stimulus [CS]. Salivation to bell sound conditional response[CR]
- **This theory is also known as S-R theory.**



### **Principles of classical conditioning:**

#### Laws of classical conditioning

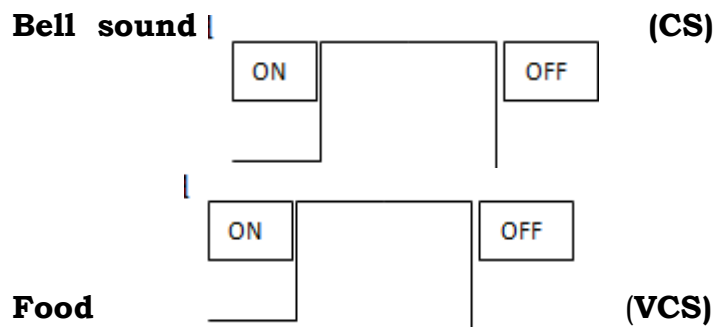
- Law of acquisition
- Law of extinction and spontaneous recovery
- Law of generalisation
- Law of discrimination
- Law of higher order conditioning.

**Law of acquisition:** It explains how the learning takes place through practice or trial. A trial is a combination of food and the bells sound are "UCS AND CS".

We have the variations of the combinations and based upon the variation, we have the following conditioning,

- ❖ Simultaneous conditioning
- ❖ Delayed conditioning
- ❖ Trace conditioning
- ❖ Backward conditioning

### ***Simultaneous conditioning:***



In simultaneous conditioning both bell sound and food are presented simultaneously

### ***Delayed conditioning:***

#### **Bell Sound**

#### **Food**

In delayed conditioning the presentation of food or UCS is delayed

### ***Trace conditioning:***

#### **Bell sound Food**

Trace one after another. In trace conditioning the bell sound is presented first followed by presentation of food.

### ***Backward conditioning:***

#### **Bell sound Food**

In the backward conditioning the food is presented first followed by bell sound.

Learning will be more effective in the simultaneous conditioning and to some extent in delayed conditioning. Learning is poor in trace conditioning and will not take place in the backward conditioning.

**Law of extinction:**

In classical conditioning food plays a dual role

- a) Stimulus
- b) Reinforcement

If we don't give the food for many trials the learned response or CR or salivation gradually reduces and at one point it disappears. This gradual disappearance of learned response or CR is known as extinction.

One related event to the extinction is the spontaneous recovery. It refers to sudden reappearance of learned response or CR. It is also known as reconditioning. The reconditioning recovery is made possible by manipulating the food or UCS or reinforcement.

**Law of generalization:**

It is the law of stimulus generalization. The stimulus can also produce the response and both the responses must be given the reinforcement.

For eg: we have conditioned dog to salivate to the bell sound and not salivated to the buzzer sound. After some trial the dog will salivate both to the bell and buzzer sound. After some trials the dog will salivate both to the bell and buzzer sound because it received food for both sound.

**Law of discrimination:** The law of discrimination is the law of differentiation.

For eg: we have conditioned the dog to salivate to the bell and buzzer sound. Now the dog is presented only the bell sound and not the buzzer sound. After some trials the dog salivates only to the bell sound.

**LAW OF HIGHER ORDER CONDITIONING**

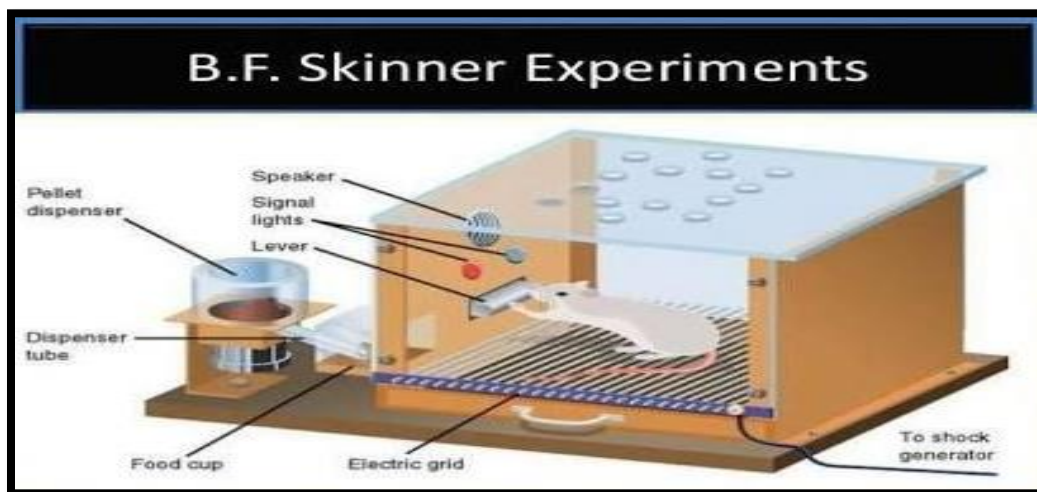
First we condition that the dog to salivate to the bell sound and it is known as first order conditioning. Add one more stimulus green light can be added and the dog is presented with red light + bell + sound + food. After some trial the dog salivates to red light. It is higher order conditioning.

Green light + red light + bell sound + food = salivation  
Red light = salivation.

## OPERANT CONDITIONING (or) INSTRUMENTAL CONDITIONING

It was proposed by American psychologist B.F. Skinner in 1930. Before Skinner another American psychologist E.L. Thorndike proposed the instrumental conditioning. He proposed law of effect. Thorndike experimented with cat in puzzle box 1898-1911

**Experiment:** consists of wooden box with a grillwork at the bottom. It also has a tray and bar, Skinner placed the hungry rat into the Skinner box and it ran randomly and accidentally it pressed the bar food pellet was delivered in the tray. Here rat has learned to press the bar. In Skinner experiment bar pressing is the response and food is the reinforcement. We connect the response to reinforcement this theory called *response – reinforcement theory*. In second part of the experiment a change was introduced when the rat pressed bar it not received the food but got electric shock but the rat learned to avoid the electric shock by not touching the bar. So, **it is avoidance learning**



### REINFORCEMENT:

Both classical and operant conditioning makes use of the reinforcement. However operant conditioning is more important to the reinforcement.

### Classification of reinforcement:

- ❖ Primary reinforcement
- ❖ Secondary reinforcement

## Classification I:

### Primary reinforcement:

It is the one which has the survival value. Eg: Food, Water, Shelter, air

### Secondary reinforcement:

These are the reinforcement which has the acquired value. Eg: Money, food.

## Classification II:

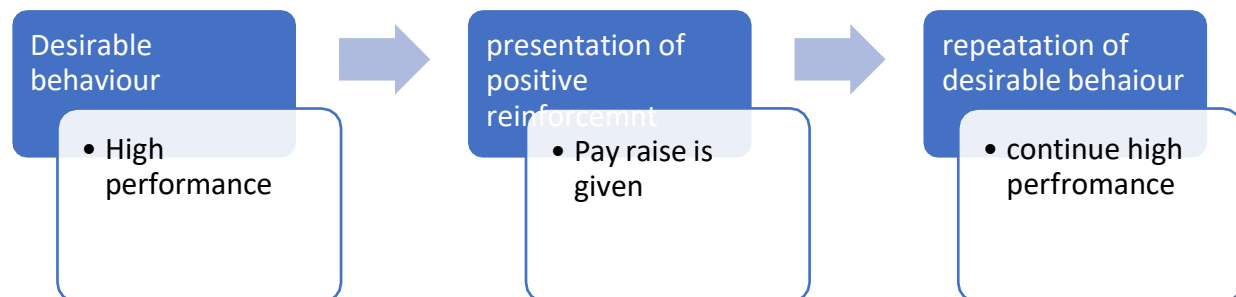
It includes

- ❖ Positive reinforcement
- ❖ Negative reinforcement

*Positive Reinforcement* is used to promote the desirable behavior and provides Favourable consequences. It encourages the Repetition of the behavior.

For eg. Compliment, bonus.

A compliment from boss after completing the difficult job is salary.

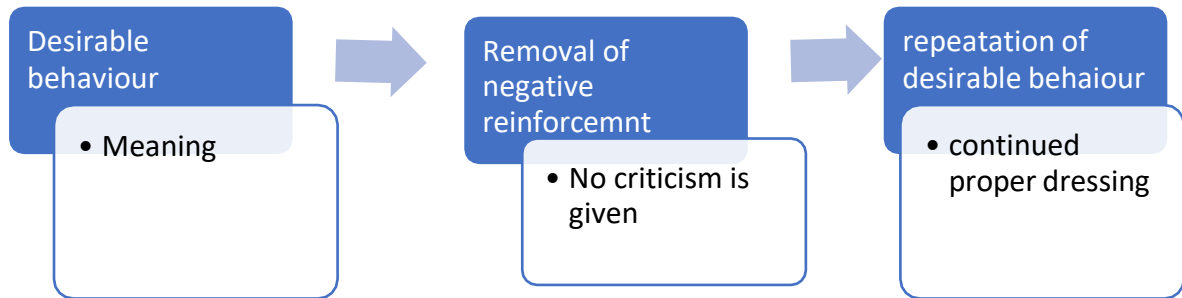


*Negative reinforcement* :Like positive reinforcement, it also focuses on increasing desirable behaviour in a different way. Rather than receiving a reward following a desirable behaviour, the person is given an opportunity to avoid an unpleasant result.

Eg: The boss may criticize the individual to dress casually.

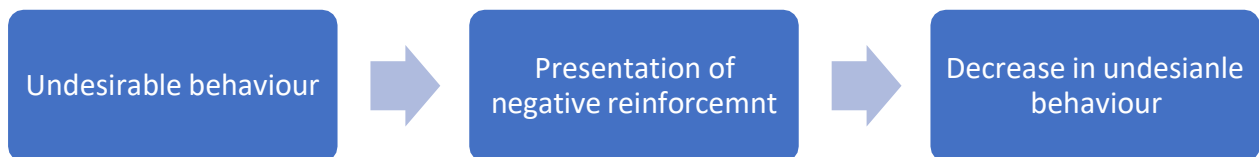
To avoid criticism, the worker may dress well. The worker is engaging in desirable behaviour to avoid an unpleasant result (Criticism). So it is also known as avoidance.





## **PUNISHMENT**

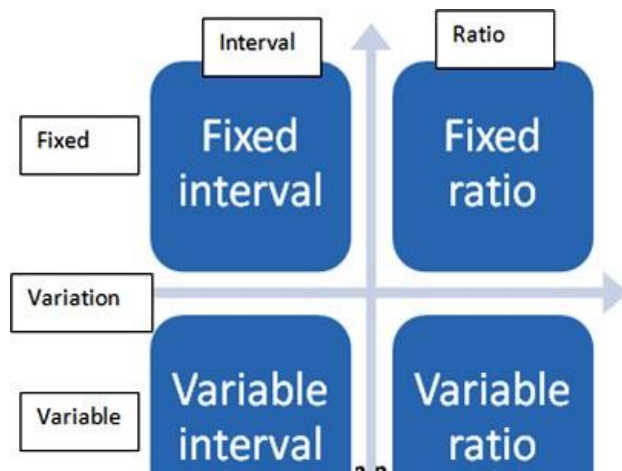
- Many people confused between negative reinforcement and punishment.
- Punishment is used to decrease the undesirable behaviour.
- In work place the unreserved behaviour like stealing, smoking, absenteeism. Eg for punishment: Pay cut, dismiss.



## **Effective Reinforcement:**

It is not the question of positive or negative reinforcement. Both are important. It works partial. In partial reinforcement is more effective and to give partial reinforcement skinner as developed reinforcement schedule

## REINFORCEMENT SCHEDULE



- It can be given based on amount of response or work.
- It is also based on amount of time interval
- *Fixed interval*- Reinforcement follows the 1<sup>st</sup> response emitted after a fixed time period eg: Every one-minute reinforcement given.

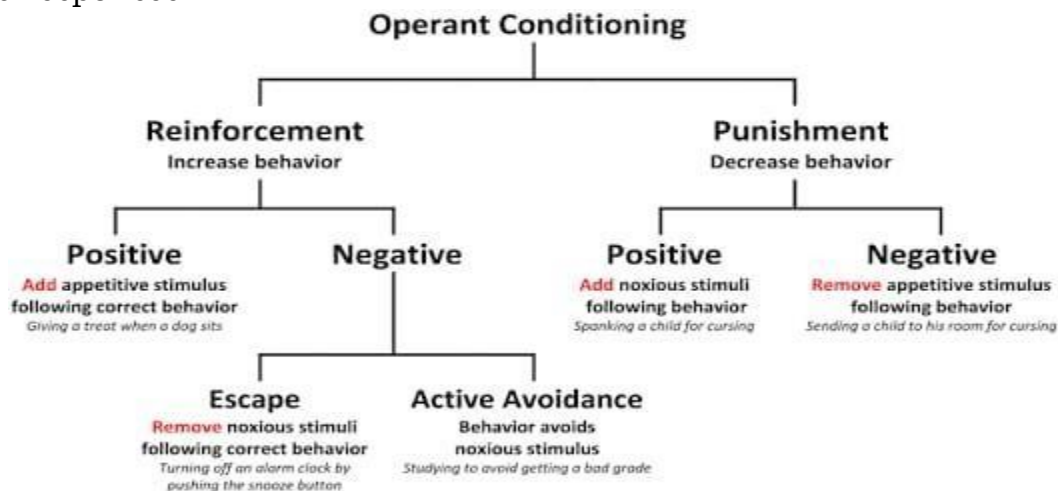
- *Fixed ratio*- on this schedule it occurs after a fixed number of reinforcements.

Eg: It occurs after every 20 responses

- *Variable interval*- in this schedule the amount of time varies to get the reinforcement.

Eg: Reinforcement varies between 0-2 minutes.

*Variable ratio*- in occurs after a fixed number of non reinforcement.. Eg: It occurs between 0-40 responses



## THE LAW OF EFFECT

- ✓ It basically states that responses that produce a satisfying effect in a particular situation become more likely to occur again in that same kind of situation.
- ✓ Law of effect is the belief that a pleasing after effect strengthen the action that

produced it. This law of effect was published by Edward thronalite in 1905

## **COGNITIVE LEARNING**

Cognitive learning is based upon informational processing model. The theory proposes that stimulus and reinforcement are not important for learning .

### **Types of cognitive learning:**

#### ❖ **Cognitive maps**

#### ❖ **Latent learning**

- ❑ It was proposed by E.C.Tolmar
- ❑ Cognitive map is the learned mental representation of the environment.
- ❑ It help us to draw up a geographical location of an event learned and then helps in problemsolving.

### **Latent learning:**

- ❑ The word “latent “means “hidden”.
- ❑ Latent learning is said to occur without reinforcement of particular responses and seemsto involve changes in the ways information is processed.

### **Insight learning**

- Proposed by kohler a German Psychologist
- Insight refers to the sudden appearance of solution to the problem.

**Experiment:-** Kohler conducted the experiment **with** the chimpanzee named sultan chimpanzee was outside **beyond** the reach of chimpanzee was provided with two sticks and it was short to reach banana. The chimpanzee tried with legs, hand and sticks was not able to reach banana. So, it started to play with sticks and it found the stick can be joined together. It got the insight and reached banana with the joined sticks

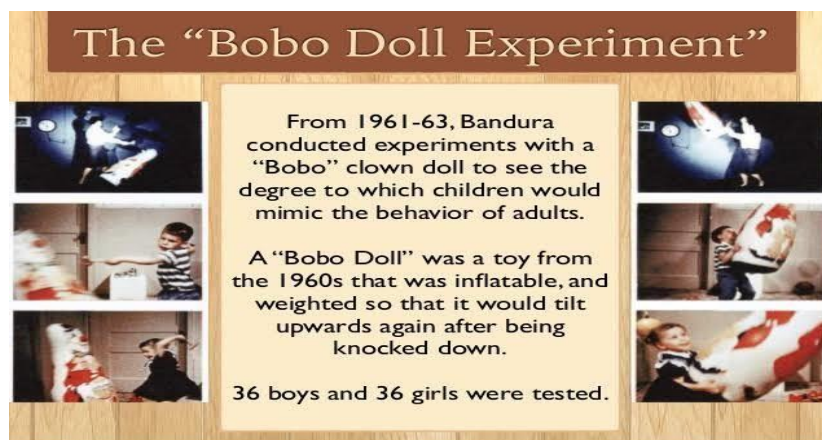
### **Condition :-**

- ❖ Insight learning depends upon the capacity of intelligence
- ❖ The problem must be solvable on

## Observational Learning

- This was proposed by Albert Bandura, American psychologist.
- It involves modelling or copying the behavior of another person model. Since we imitate the behavior of the models like our parents and teachers.

**Experiment:-**Bandura studied preschool children's reaction to observing the model aggression. Nearly 96 children from the Stanford university school, observed the behavior of aggressive models. The preschool children watched a film of an adult model punching and verbally abusing a five feet tall inflated "bobo" doll. The adult model sat on the doll and repeatedly punched it on the nose, hit on the head, kicked the doll. Thorough out this aggressive act the model said things like hit him, kick him. After watching that violent movie the children were taken to another room they were given attractive toys and bobo doll was given to them. The children started to hit the bobo doll as seen the movie.



### BASIC PRINCIPLES OF OBSERVATIONAL LEARNING:





- A. Attention
- B. Retention
- C. Ability
- D. Motivation

**Attention** – the extent to which we focus on others behaviour.

**Retention (Recall)** – our ability to retain a representation of others behaviour in memory (recalling)

**Ability** – our ability to act on these memory representations (Ability to produce action)

**Motivation**- to perform the action.

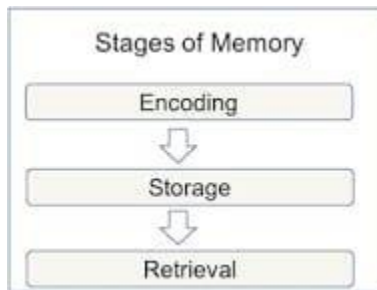
| How Observational Learning Occurs  |  |
|--|--|
| <b>Attention</b><br>    | To learn anything, you need to be paying attention. Any kind of distraction can make it difficult for you to remember what you are learning.                     |
| <b>Retention</b><br>    | You must be able to store (or retain) the information you have learned in your brain. Many factors (like age and health) can impact memory retention.            |
| <b>Reproduction</b><br> | You must mimic (or reproduce) the behavior you have learned from a model. The more you mimic the learned behavior, the longer you will retain it in your memory. |
| <b>Motivation</b><br>   | You have to be motivated to mimic a behavior, or else you will stop practicing it, and eventually forget it.   |

## UNIT –V MEMORY

**Memory:** Definition-Theories of memory-Process of memory- Sensory memory-Working memory-Kinds of memory, Constructive memory-Forgetting- Memory building techniques

### DEFINITION OF MEMORY

- ❖ Memory refers to the processes that allow us to record store later retrieve experience and information.



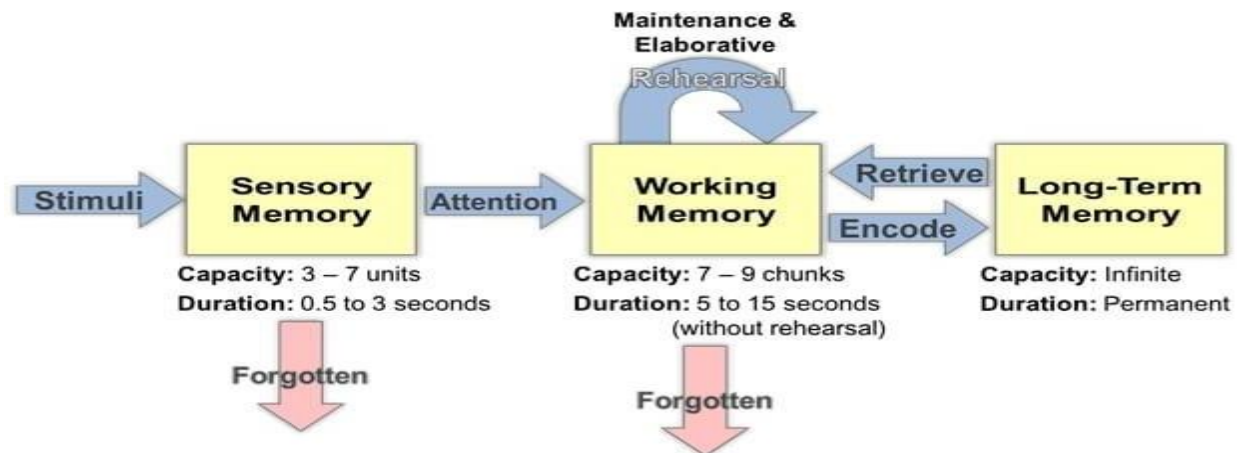
**Encoding**-Encoding refers to getting information into the system by translating it into the neural code that your brain processes.

**Storage**-It involves retaining information overtime.

**Retrieval**-It refers to the process that assess (or) recalling the stored information.

**Memory=Encoding—Storing—Retrieval**

### THREE STAGES OF THE MODEL



The model is developed by Richard Atkinson and Richard Shiffrin (1968)

- Sensory Memory
- Short Term Memory
- Long Term Memory

## **1) Sensory Memory**

- Sensory Memory briefly holds incoming sensory information. It comprises different subsystems, called sensory register, which are the initial information processors.
- Our visual sensory register is called the iconic store, and in 1960 George Sperling conducted a classic experimental to assess how long it holds information. On one task Sperling arranged 12 letters in three rows and four columns. He flashed the array on a screen for 1/20 of seconds, after which participants immediately recalled as many letters as they could. Typically, they were able to recall only 3 to 5 letters.
- There are two types of sensory storage. Iconic stores are visual store and echoic store are auditory store.

## **2) Short- Term Memory**

- Most information in sensory memory rapidly fades away, but according to the original three stage model, through selective attention some information enters short-term memory a memory store that temporarily holds a limited amount of information.

### **A) Memory Codes**

- ✓ Memory codes are mental representations of some type of information or stimulus, and they can take various forms.
- ✓ We may try to form mental images (visual codes), code something by sound (phonological codes), or focus on the meaning of a stimulus (semantic codes).
- ✓ For physical actions, such as learning sports or playing musical instruments, we code patterns of movement (motor codes).

## **b) Capacity and Duration:**

- ✓ George Miller set the capacity limit at "the magical number seven, plus or minus two". To demonstrate this, try administering the digit-span test to some people you know.
- ✓ Short-term Memory as a temporary holding station along the route from sensory to long-term memory.

## **c) Working memory**

- ✓ Working memory are limited-capacity system that temporarily stores and processes information. Components of Working Memory According to one influential model, working memory has several components.
  - i. *A First component, the phonological loop*, briefly stores mental representations of sounds.
  - ii. *A Second component, the visuospatial sketchpad*, briefly stores visual and spatial information.
  - iii. *A third component, called the episodic buffer* provides a temporary storage space where information from long-term memory and from the phonological and/or visuospatial subsystems can be integrated, manipulated, and made available for Conscious awareness.
  - iv. *The fourth component of working memory, called the central executive*, directs the overall action. When solving arithmetic problems, for example, the central executive doesn't store the numbers or rules of addition. Instead, it plans and controls the sequence of actions that need to be performed, divides and allocates attention to the other subsystems, and integrates information within the episodic buffer.

## **3) Long-Term Memory**

- Long-term memory is our vast library of more durable stored memories.
- This U- shaped pattern is called serial position effect, meaning that the ability to recall an item is influenced by the item's position in a series



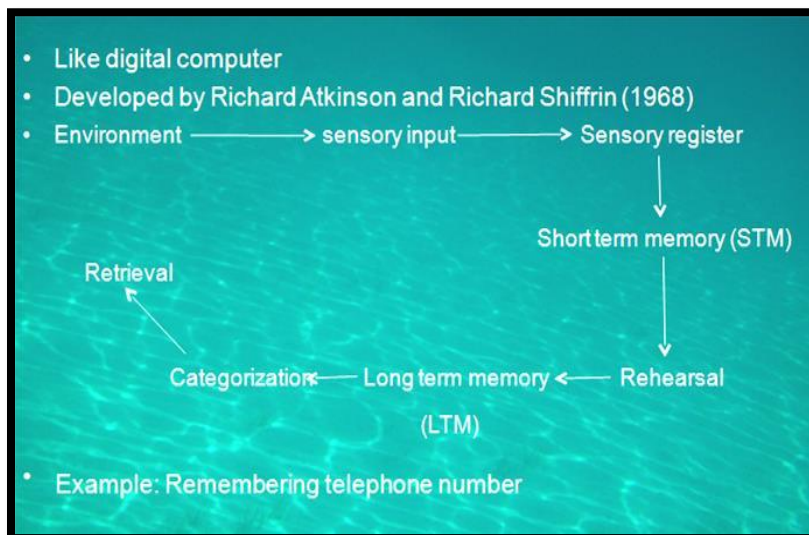
- The serial position effect has two components: a primacy effect, reflecting the superior recall of the earliest items, and a recency effect, representing the superior recall of the most recent items.
- According to the three-stage model, as the first few words enter short-term memory, we can quickly rehearse them and transfer them into long-term memory. In sum, according to the three stage model, the primacy effect is due to transfer of early words into long-term memory. Whereas the recency effect is due to the continued presence of information in short-term memory.

### THEORIES OF MEMORY

Two theories of memory are

1. Information -processing theory
2. Level of processing theory

### INFORMATION -PROCESSING THEORY



passed to STM

### Sensory Register

- Storage function sensory channels (visual, auditory, olfactory, tactile, gustatory) is called sensory register
- Information is held for very brief period
- Most of it is usually lost Information which was attended and recognized,
- Visual sensory register holds information for 1 second in the form of ICONIC IMAGE which is a copy of visual input stored as faint image.
- Auditory sensory register holds information for 4 to 5 seconds

## **Short term memory:**

- The memory which holds information received from the sensory register for upto 30 seconds, length of time depends on number of factors.
- Experiment: technique used in this experiment is called 'FREE RECALL'. The subjects were shown 15 nouns. Each presented for 1 sec. and 2 seconds interval in between, subjects were asked to recall the nouns in any order that came to mind.

### ***Zero delay condition***

1. . Serial position effect
  2. Primacy effect
  3. Recency effect
- 10 or 30 seconds delay: If delay interval is filled with mental activity, decrease or elimination of recency effect but not primacy effect was found
  - Cause: last item in the list is still in STM

### **STM: Transient quality**

- Limited storage capacity-7 items, plus or minus 2
- Storage capacity can be increased by process called CHUNKING- dividing total information into chunks and then remembering them. *Example: remembering telephone numbers*

**Fate of information in STM :** information is mostly lost by newer information which displaces the old one.

- Some of the information in the STM is neither lost nor retrieved but passed along the next memory stage (long term memory) through REHEARSAL

### **Rehearsal**

- Process of rehearsal consists of keeping items of information in the centre of attention, perhaps by repeating items silently or aloud
- More the item is rehearsed more likely it is to be transformed into long term memory
- Depends upon amount of rehearsal and ways of rehearsal

## **Long Term Memory**

- The memory which holds information received from STM for long period of time. (Precise time not known)
- May be days, months, years or life time
- Storage capacity-no limit

**Forgetting of LTM** : information is there, we have difficulty in retrieving it because

- ✓ It is not stored in an organized fashion or we are not searching it in right path of memory storehouse.
- ✓ of confusion & interference produced by new things which have been learned and put into LTM
- **LTM**: contains words, sentences, ideas, concepts and the life experience

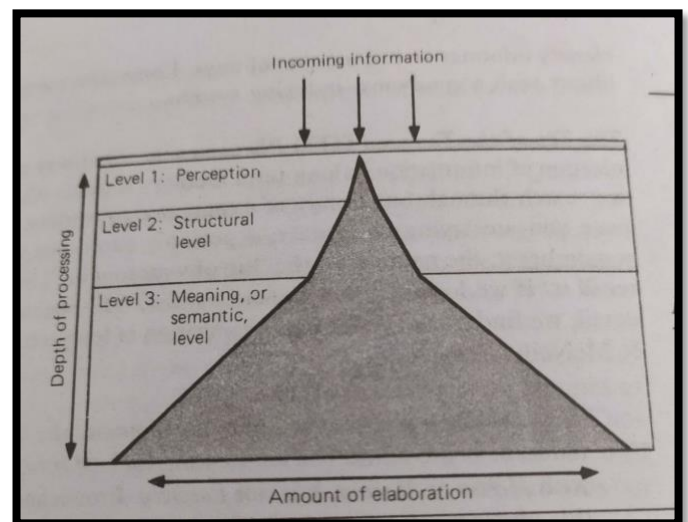
**SEMANTIC MEMORY**: contains meanings of words & concepts and the rule of using them into the language, it is a vast network of meaningfully organized items of information.

- **EPISODIC MEMORY**: containing memories of things that have happened to a person in the past.

## **LEVEL OF PROCESSING THEORY**

- According to this theory, incoming information can be worked on at different levels of analysis, the deeper the analysis goes, the better the memory.
- It is contrasting model of memory.

Eg: If anyone is introducing you to new person and telling their name.

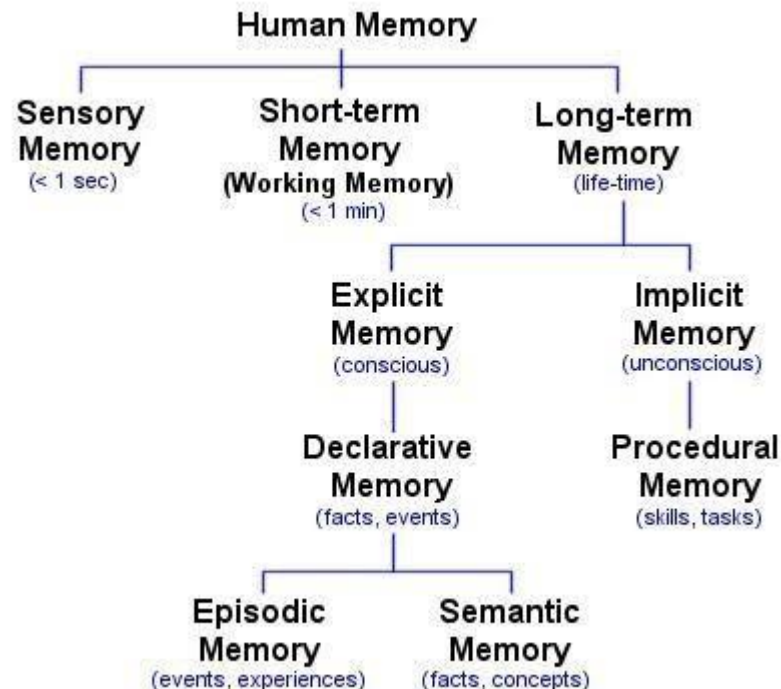


if you want to remember then you will remember.

- This is divided into Structural and functional
- *Structural* means not looking deeper into sensory
- *Functional* means looking something deeper inner

Eg: teacher giving corrected answer paper

- Perception: gives us immediate awareness of the environment
- Structure: features of input (what it looks like, or sounds like) are analyzed.
- Meaning: meaning of the input is analyzed
- Analysis to the deep level of meaning gives the best memory.
- happenings of daily life are not processed deeply
- Rehearsal plays a role in the deeper processing of the information
- Maintenance rehearsal is not enough for good memory.
- Elaborative rehearsal processes information to the meaning level, so that memory is well retained.
- Greater elaboration greater possibility that memory is remembered



## Long Term Memory

- Declarative Memory
- ❖ Episodic Memory
- ❖ Semantic Memory
- Procedural Memory

### **I. DECLARATIVE MEMORY:**

It represents the storehouse of factual information such as dates, names, facts, places, numbers and past experiences. It is called declarative because it can be brought to mind and stated or declared in the sense

of a fact, proposition, or image. There are two types of declarative memory

a) episodic and

b) semantic memory.

a. **Episodic memory** It is also known as autobiographical memory. As its name implies, it consists of one's memory for personal past episodes of one's life. It is made up mostly of images from personal experiences organized on the basis of when and where they occurred chronologically.

b. **Semantic memory** It contains our storehouse of words and the meaning of words, facts, general information, concepts, and the rules for learning - most of the things that we were supposed to learn in school. Because of semantic memory we remember that  $2 + 2 = 4$  and "manoree" is misspelled.

### **PROCEDURAL MEMORY:**

- ✓ It contains memory of motor skills, typically learned through repetitive practice and conditioning. A person relies on procedural memory when tying shoes, playing a musical instrument, riding a bicycle, hitting a ball and typing.

### **RECALLING LONG-TERM MEMORIES**

Have you ever tried to remember someone's name convinced that you knew it but unable to recall it? No matter how hard you tried, this is because those are infrequent occurrences known as the tip-of-the-tongue phenomenon - exemplifies the difficulties that can occur in retrieving information stored in long-term memory.

**Retrieval Cues:** Retrieval Cue is a stimulus that allows us to recall Information that is located in long-term memory more easily. It may be a word, an emotion, a sound: whatever the specific cue, a memory will suddenly come to mind when the retrieval cue is present *For example, the smell of roasting turkey in cycle memories of thanksgiving or family gatherings.*

## **METHODS OF IMPROVING MEMORY**

There are many methods of improving memory and they can be broadly classified into

- a) Using effective study habits
- b) using mnemonic devices.

**A) USING EFFECTIVE STUDY HABITS:** The techniques of successful students

Given two students with equal memory ability the one with better study habits will probably perform better in school. It includes the following techniques

### **1.Scheduling**

To practice good study habits, you would begin by setting up a schedule in which you would do the bulk of your studying when you are most alert and most motivated.

### **2.Using SQ3R Method**

SQ3R stands for Survey, Question, Read, Recite and Review .This method has proved helpful to the students. It requires elaborative rehearsal, in which you process information at a relatively deep level.

### **3.Over learning**

You might also wish to apply other principles to improve your studying .First take the advantage of over learning. Over learning appears to work by making you less likely to forget material you have studied and more confident that you know

### **4.Distributed Practice Vs Massed Practice**

Use distributed practice instead of mass practice. The advantages of distributed practice over massed practice are especially important in studying academic material.

## 5. Organization of text material

One proven technique for improving recall of written materials consists of organizing the material in memory as it is being read for the first time. Understanding the structure of the material will enable you to recall it better.

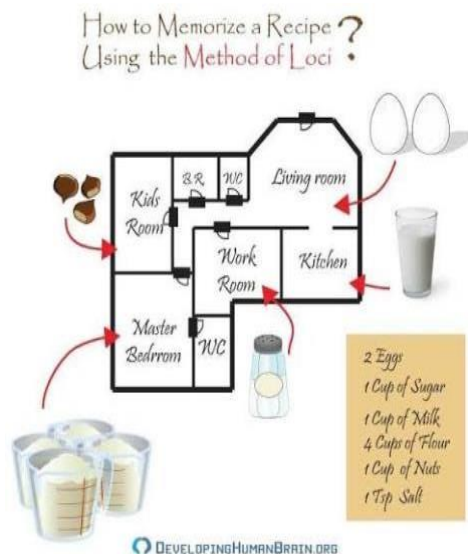
## 6 Organization of Lecture notes

Rather than trying to jot down every detail of a lecture it is better to listen and think about the material, taking down the main points after you have considered them in a broader context.

## **B) USING MNEMONIC DEVICES THE TRICKS OF THE MEMORY TRADE**

The mnemonic device of improving memory includes the following:

### **Method of LOCI (location)**



The method of loci is useful for memorizing lists of items. In the method of loci we have to associate new information with a series of specific physical locations that are already firmly established in our memory. He simply visualized himself walking along a familiar street. While on this mental walk, he would visualize the specific items in specific locations.

### **1. Acronym**

An acronym is a term formed from the first letters of series of words. For example the acronym VIBGYOR helps us to remember the seven colors in the rainbow and their order.

### **2. Link Method**

Mnemonic device that makes use of imagery is the link method, which takes Images

of the items to be memorized and connect them in sequence.

#### **4 Peg word mesh**

Like the method el loci, the main idea of these systems is to establish in your long term memory, well organized set of images (pegs) to which to be remembered items can be linked.

#### **5. Remembering names and faces**

As first step in establishing a good memory for names and faces, we should 1) be sure we hear the name clearly when introduced, 2) repeat the name when acknowledging the introduction, 3) if the name is unusual, politely ask our new acquaintance to spell it

#### **Chunking**



Chunking is the systematic way of encoding information. Suppose you want to remember your credit-card number- 190422039496, for example the first four numbers may remind you of an important date

#### **FORGETTING**

**Definition :** The inability to recall or recognize material which was previously stored in memory.

#### **Causes for Forgetting**

- Lack of Availability
- Lack of Accessibility

#### **THEORIES OF FORGETTING**

There are three traditional theories related to forgetting.

1. Interference effects



2. Decay through disuse
3. Retrieval forgetting.

## **1. INTERFERENCE EFFECTS**

- The theory maintains that new learning may interfere with material previously learned. It illustrates how new learning may interfere by recalling old learning.
- The theory that the new learning may interfere with the old is known as retroactiveinhibition.
- Companion interference theory, based on the same principles, maintains that priorlearning may interfere with the learning and recall of new materials. This aspect *of the theory is called proactive inhibition.*

### **a. Retroactive Inhibition**

New information interferes with the recall of old information.

### **b. Proactive inhibition**

When materials that we have previously learned interferes with the recall of something newly learned .

## **II. DECAY THROUGH DISUSE**

Decay through disuse is the commonest and the oldest theory of forgetting. This explanation assumes that learning leaves a "trace in the brain, the memory trace involves some sort of physical change that was not present prior to learning. With the passage of time the normal metabolic processes of the brain cause a fading or decay of the memory, so that traces of material once learned gradually disintegrate and eventually disappear altogether.

## **3. RETRIEVAL FORGETTING**

Human's motive plays a major role in remembering and forgetting which has been neglected in previous theories. The information is still in long-term memory, but can't be recalled because the retrieval cue is absent.

**4. REPRESSION:** The nature of the forgetting that occurs in dramatic instances of amnesia aids in the understanding of repression. The beginning of the amnesia can often be traced to some severe emotional shock that the individual suffered and from which the amnesia provides all escape. Repression is also known as motivated forgetting. The theory of repression holds that the memories are not recalled because their retrieval would in some way be unacceptable to the person, possibly because the anxiety they would produce or the guilt they might activate.