**LESSON 1**

# WHAT IS PSYCHOLOGY?

Beginning with the first psychological laboratory, founded in 1879 by German philosopher and physiologist Wilhelm Wundt, modern psychology's can be traced in many disciplines and countries. Psychology's historical perspectives and current activities lead us to define the field as the science of behavior and mental processes.

**Theoretical perspectives of psychology**
There are many disciplines that study human nature. Psychology is one. Within psychology, the biological, behavioral, psychoanalytic, cognitive and social- cultural perspectives are complementary. Each has its own purposes, questions, and limits; together they provide a fuller understanding of mind and behavior.

**Why do we study psychology?**
Scientific inquiry begins with an attitude of eagerness to skeptically investigate competing ideas, with an open- minded approach. Putting ideas to the test helps us in fully understanding them. The curiosity that drives us to test ideas, and to expose their underlying assumptions, can be experienced in every day life as critical thinking.

*COURSE DESCRIPTION*

**The course will encompass basic concepts of psychology**
Concepts like learning, memorizing, retention, emotions, process of thinking, how do
Our sense organs work etc will be discussed.
Also, issues like what is normal and what is abnormal behavior, the interventions used
For treating psychological problems, along with an overview of main and popular
Areas of psychology will also be tackled.

**The main focus of the course will be on introducing essential terminology, theories, themes, concepts, and trends relevant to modern day psychology**
The main focus is to help students to learn and understand what are the essential and important areas of study in psychology. Also students will be enabled to understand and learn the basic concepts which psychology is mainly based on.

**Practical application of knowledge, besides a know how of theoretical constructs, will be encouraged**
How to use psychology and psychological concepts in every day life is an essential
component, besides having a basic understanding of the theoretical part of it. It is expected that after completing this course, the student will be able to use the psychological concepts for resolving problems, or at least identifying, problem areas and situations where psychological intervention is required.
**The course will be taught bilingually**

COURSE OBJECTIVES

By the end of the term the students will be able to:

**Understand and use basic terminology of psychology:** Terms, concepts and processes when we are studying and applying psychology's principles in daily life tasks

**Understand and identify the various applications of the discipline as well as its scientific nature:** Understanding of how to conduct psychological research is very important and it needs thorough study of research techniques of how to conduct research, what are the basic steps involved, how to verify the findings; and most importantly, whether it is ethical as well as applicable to humans or not; The students will get a feel of it. The scientific methodology will not be discussed in detail since this is an introductory, foundation, course.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**Choose areas of their interest for higher academic qualification in future**: The students will be familiarized with a number of areas of psychology. After completing this course you may feel that you have developed a keen interest in psychology and want to carry on with studying this discipline; at that point the knowledge from this course will help you in to choosing the desired field in which you want to specialize. Also the knowledge and information gained from this course will help you in understanding the concepts in courses like organizational behavior, management, consumer behavior, and research methods.

**Identify situations where psychological intervention may be required:** While studying psychology, you come to know that psychology's applications are not limited to curing mental problems only, but have wide range of applications from the minor to the most extensive tasks in which psychological principles can be used. Here it is important for you to identify situations where psychology's principles and interventions can be used in order to resolve the issue.

**Some Additional Advantages**

Besides these basic objectives, there are many other advantages that the students will, or may, enjoy. Knowledge of psychology affects your personality also by enriching your intellectual life and enlarging your vision to see and observe things around you. We will discuss a lot of things, and they will be explained in such a manner that they will add some skills and a better understanding to your present intellectual caliber. For example, if you want to enhance your learning by studying psychology, there are some important and useful tips for you:

**Distribute your study time**

One of the psychologists' oldest findings is that "spaced practice" promotes better retention than "massed practice". You will remember material better if you space your time over several study periods rather than overcrowding your memory store house with information over load at one time for longer durations.

**Learn to think critically**

Whether in class, or at home, or somewhere else, note people's personality, habits, assumptions and values and critically evaluate. What perspective or bias underlies an argument? Evaluate evidence. Is it anecdotal? Co incidental? Experimental? Based upon facts? Is what I see the only truth, or can there be other possible explanations?

**Listen actively to lectures**

According to psychologist William James " no reception without reaction, and no impression without expression." Listen to the main and sub- ideas of the lecture, and after listening, process information by which you can understand and retain the material well.

**Over learn**

"Over learning improves retention". Read, recite and over learn the material that you cover. Do not overestimate what you know. Rethink and review the lecture, and give some extra time to what you think you already know. It enhances your knowledge and the material will be better retained.

**Carefully accessing questions while taking tests/ exams**

Read the question to be attempted carefully, think what you have to write and then start attempting questions

**While exploring psychology, you will learn much more than effective study techniques.** Psychology polishes and sharpens our understanding of how people perceive, think, feel and act. By doing so, it definitely enriches our lives and enlarges our vision.

*Misconceptions about psychology and psychologists*

**Anybody who has studied psychology can read people's personality**

This is the most frequent thought that comes into the mind of people who believe that psychologists are like magicians who can tell every thing about any person, his thoughts, feelings emotions, personality and all that other people cannot tell. This actually is not the case, because psychologists are not the magicians or something like that. They are professionals and their area of interest is basically the study of human

behavior and mental processes; and this requires good observation as well as good prediction. Another important thing that has to be kept in mind is that not all of those who have a degree in psychology can understand, explain, and predict the personality or behavior of a person, because it mainly requires not just good observation but proper training as well.

**Psychologists can predict fate or destiny**

This is not actually the case. Lay people have these views because they see that psychologists are capable of accurately telling what type of people others are, what they are capable of doing, what are their potentials and capacities etc. In reality, the case is different since psychologists can only predict not the destiny but the direction that one may adopt in future; psychologists can assess and predict personality and behavior because they get professional training for studying human behavior and that is why they can easily tell what type of a person one is, what might be his potentials, and how much he/ she is capable of performing certain tasks.

**Psychologists are doctors**

Another very common misconception is that psychologists are doctors. Psychologists are not at all doctors; they are specially trained people who deal with the psychological problems and not the medical problems. Psychiatrists, on the other hand, are doctors who have a professional degree in medicine as well as training in treating those suffering from psychiatric/ psychological problems.

**Psychologists give medicines**

Not psychologist, but psychiatrists are the ones who prescribe medicine to the mentally ill patients, as they have a professional degree in medicine that authorizes them to prescribe medication.

***DEFINITION***

***"Psychology is the scientific study of behavior and mental processes …. Human or Animal"***

Behavior is overt, manifest, obvious, and easy to study; the mental processes that help carryout these behaviors are covert, underlying, hidden, and not easy to study. Besides behavior, what causes these behaviors to occur and the mental processes involved in it is an important area of interest for a psychologist.

***Psychologists study animals' behavior too; to better understand and predict human behavior, the study of animal behavior becomes essential at times, especially because some researches cannot be carried out with humans due to safety reasons or ethical issues***

***Goals of Psychology***

***Main and important goals of psychology, or in other words of understanding human behavior and mental processes, are;***

- To understand the nature and mechanisms of behavior and mental processes
- To develop an understanding of the relationship between behavior and mental processes
- To apply this understanding to real life situations and, on the basis of this understanding, predict for the future
- To employ the scientific approach for developing this understanding

**In short, the main goals of psychology are:**

a) Observation,
b) Description,
c) Understanding,
d) Explanation,
e) Prediction, and
f) Control of human behavior and mental processes.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Scientific nature of Psychology*

**Psychology is a science**

It employs the scientific method for gathering knowledge and information. It uses scientific procedure that is essential to be adopted in order to carry out psychological research; otherwise the research will not be considered authentic, reliable, or scientifically valuable.

**"Scientific method is a systematic and organized series of steps that scientists adopt for exploring any phenomenon in order to obtain accurate and consistent results. These steps involve observation, description, control, and replication"**.

These are the main components of any science or scientific discipline. The methods of how to gather, process, and analyze information properly and accurately are very important in psychology as well.

**Remember! Science does not deal with the supernatural**

A number of people commonly believe, and they did more so in olden times, that the evil spirits, demons, or ghosts are the root cause of mental illness. Therefore, for them, psychology may be the approach that can free man of the supernatural possessions, which is a wrong belief. Psychology does not deal with the supernatural phenomena like any other science; it deals with only those behaviors that are overt can be experienced by our senses, that can be understood in psychological/scientific terms, and that can be dealt with through psychology interventions.

*Scope of psychology*

After doing a degree course in psychology one may join a variety of work settings, the most common being:

- ***Education/teaching***
- ***Research***
- ***Hospitals/clinics***
- ***Recruiting/screening agencies***
- ***Specialized professional settings e.g. armed forces, social welfare etc.***

*Popular areas of psychology*

**Clinical Psychology**

A branch of psychology concerned with the study, diagnosis, and treatment of abnormal behavior. It is the oldest as well as the most well known branch of psychology. Clinical psychologists are trained to diagnose and treat problems ranging from the every day crises of life such as grief due to the death of a loved one, to more extreme conditions, such as a loss of touch with reality. Some clinical psychologists also conduct research, investigating issues that range from identifying the early signs of psychological disturbance, and studying the relationship between how family members communicate with one another, to the understanding of a wide variety of psychological disorders.

**Industrial / Organizational Psychology**

A branch of psychology that studies the psychology in action at the workplace, including productivity, job satisfaction, and decision-making.

**Health Psychology**

The branch of psychology that explores the relationship of psychological factors and physical ailments or disease e.g. Health psychologists are interested in how the long- term stress (a psychological factor) can affect physical health. They are also concerned with identifying ways of promoting behaviors related to good health (such as exercise) or discouraging unhealthy behaviors (such as smoking, drinking etc).

**Consumer Psychology**

A branch of psychology that studies and explains our buying habits and our effects of advertising a buying behavior. Mainly dealt with the likes and dislikes and preferences of people.

© Copyright Virtual University of Pakistan 

**Environmental Psychology**
A branch of psychology, that focuses upon the relationship between people and their physical environment. It is one of the newly emerging, and in-demand, areas of psychology. Environmental psychologists have made significant progress in understanding how our physical environment affects the way we behave toward others, our emotions, and how much stress we experience in a particular setting.

**Sport Psychology**
The branch of psychology, that studies the psychological variables that have an impact upon the sportspersons' performance; e.g. how stress can affect sport performance, how morale can be boosted, the role of self-concept and esteem, the impact of crowd behavior etc.

**Forensic Psychology**
The branch of psychology that investigates legal issues and psychological variables involved in criminal behavior ; e.g. what factors determine criminal tendencies, how criminals be reformed, deciding what criteria indicate that a person is legally insane, and whether larger and smaller juries make fairer decisions.

Note: For more details see the website of American Psychological Association: **www.apa.org/about/division.html**

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**LESSON 2**

## HISTORICAL ROOTS OF MODERN PSYCHOLOGY

Throughout some twelve or so decades, psychology has led an active life, developing gradually into a true science. As part of evolution, it has produced a number of conceptual models, approaches, theories, interrelated ideas and concepts used to explain phenomena, that has guided the work being carried out.

Earlier views of the philosophies and concepts were important because they gave the outline with the help of which modern ideas were developed and further formulated.

"Psychology has a long past, but only a short history."(Hermann Ebbinghaus, 1908)

Wilhelm Wundt set the foundations of modern psychology in 1879, by establishing the first psychology laboratory in Leipzig, Germany.

Man was always curious about human behavior, nature of consciousness, origin of "madness", emotions and much more about other people's nature.

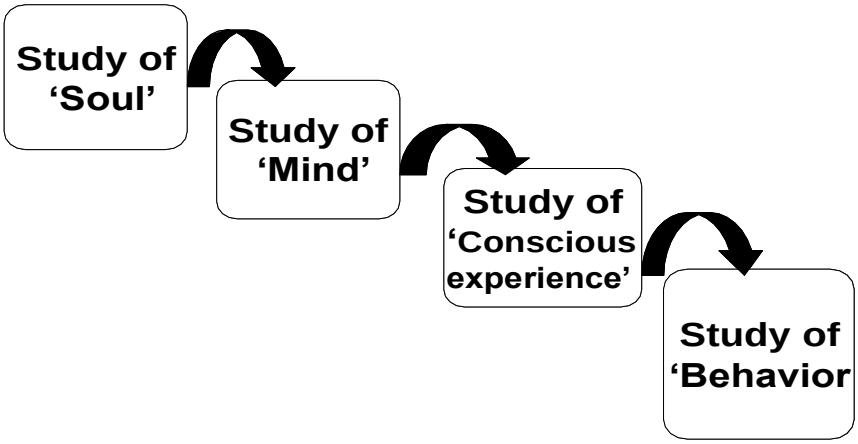
Control and desirable modification of behavior interested man; he always wanted to become powerful and be able to make others do what he wanted them to do.

**Historical Roots of Modern Psychology**

Although psychology did not exist in its present form thousands of years ago, its application can be traced even at that stage of history. The following facts indicate that man was always interested in understanding and managing psyche and behavior, and was capable of controlling and modifying it:

Domestication of dogs was practiced even 10,000 years ago. Babylonians made speculation about etiology of epilepsy and tried to cure it accordingly. Egyptians performed crude brain surgery thousands of years ago. Evidence is available through an examination of ancient human skeletons, that 'trephining' was performed even half a million years ago; trephining was a procedure whereby a hole was drilled into the skull of a mental patient. This was done in order to let the evil spirits or demons escape from the sufferer's body. The basic assumption was that abnormal behavior was caused by supernatural beings.
Such evidence suggests that man sought explanations of human behavior, and tried to control it according to the explanation he believed in. Ancient explanations centered on the supernatural: gods, evil spirits, demons etc

Phases in the History of Psychology




Today psychology is considered as the scientific study of human behavior and mental processes. But the case was always not so. Initially the soul; of man interested the philosophers, then mind and conscious experience, and lastly observable behavior.

In 1590, Rudolf Goeckel used the term "psychology". This word is the combination of two Greek words " psyche" and " logos", the former means the " soul" and the later " discursive knowledge". Thus literally, psychology means the science of soul. Aristotle gave a very important place to soul in human life. Life has no meaning without soul. But he couldn't explain the relationship of the soul to the body. The problem of the relationship between body and soul persisted for centuries. it was not solved by philosophers because it was based on

false dualism and involved a separate study of physical and spiritual phenomena. Later on, the spiritual aspect was discarded altogether and substituted by a more comprehensive word "mind".

Psychology was also defined as the "science of mind". But psychologists were never satisfied with this definition because mind was a vague term that could not be defined in objective terms. Mind and mental experiences were primarily subjective in nature. Therefore the later psychologists switched their positions and began investigations into behavior that was an objective and observable phenomenon. So it should not be surprising for a student of psychology that definitions of psychology have varied considerably over the years according to the theoretical orientation of particular "schools".

Modern psychology is no longer interested in the study of mind. Mental processes have substituted mind.
The "mind approach" in psychology was rejected because mind can not be studied using scientific procedures; besides there is no scientific way to determine whether an entity such as mind actually exists. Also those who used the word mind or mental processes were not unanimous in their explanations of the very nature of mind.
This definition also does not include the overt behavior of man and animals, which forms a major subject of study in the present day psychology.

Psychology has also been defined as the science of consciousness. Structuralism, an important early school of thought in psychology, considered psychology as the study of conscious experience. In the words of Wilhelm Wundt, "psychology has to investigate that which we call internal processes or experiences i.e., our own sensations and feelings, our thoughts and volitions in contradistinction to the subject of external experience". This definition of psychology as a science of consciousness is now discarded and rejected on the following grounds:

Modern day psychology does not believe in consciousness as it used to. Mental processes have substituted consciousness.

Even those thinkers, who use the word consciousness, do not agree on its meaning. According to some, it is a substance while for others it is a process or a stream. The word consciousness does not include animal or human behavior. Psychology also studies unconscious and sub- conscious processes. Therefore there is sufficient rationale behind the belief that it cannot be called the science of consciousness alone.

Modern psychologists define it as a science of behavior, both of animals and humans. It was Watson, the founder of the behaviorist school of thought, who postulated this definition. This definition is comprehensive in the sense that it identifies behaviors that are overt and can be observed. But this definition also has some limitations.

This definition takes behavior in a very narrow sense; behavior, as Watson saw it, was merely stimulus-response. Behavior, for modern psychologists, includes both the overt behavior as well as the mental processes that accompany those behaviors i.e., the inner experiences that carry out those behaviors

*Philosophical Influences on Modern Psychology*

***The new scientific psychology is a fusion of two psychologies, i.e., philosopher's psychology and the sensory psychology of the physiologists. Brain physiology, reflexology, and phenomenology all these sciences have contributed to the development of psychology. So basically:***

- Psychology emerged from Philosophy
- Philosophers in the West as well as East were explaining thought and behavior
- Addition of newer and better methods of investigating these explanations led to the emergence of psychology

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Sub- continental Philosophic Tradition*

The ancient Indian Philosophy existed much earlier than any other formal explanation. The earliest traces are found in the Yogic philosophy prevailing in 1000 BC**.** According to this philosophy, mind and body are interlinked and affect each other. Physical exercise helps mental development and vice versa. The later philosophies e.g. Vedic, postulated varied explanations in this regard.

*The Greek Philosophers*

*HIPPOCRATES (460-377 B.C.)*

***One of the more important advances in Greek philosophy and science was the separation of the practice of medicine from religion. Hippocrates was a physician, who not only raised the standard of medical investigation but also developed the code of ethics for the physicians. He, like Alcamaeon, stressed upon the significance of the brain in psychological processes, and he approached the problems of medicine systematically.***

**He postulated a theory of "humors" that account for the basic human activity.** He believed that the perfect health is the result of the proportionate mixture of these humors. To him, there were four basic humors that were associated with different temperaments.

***He believed that four temperaments form personality:***

- *Sanguine (Cheerful and Active)*
- *Melancholic (Sad)*
- *Choleric (Angry and Aggressive)*
- *Phlegmatic (Calm and Passive)*

*PLATO (427-347 B.C.)*

***He was the first person in history to produce a great all- embracing system of philosophy. He not only developed the theory of knowledge, theory of conduct, and a theory of state, but also the theory of universe.***

*Parts of soul*

***According to Plato, the soul has three parts or components, which he calls reason, spirit, and appetite. He discovered that there are three different kinds of activity going on in a person. First, an awareness of the goal or a value and this is the act of reason. Secondly, there is a drive towards action, the spirit, which is neutral at first but responds to the direction of reason. Last, there is the desire for the things of the body, the appetites. The body itself is inanimate, and therefore, when it acts or moves, it must be moved by the principle of life, the soul. In the body the soul experiences sensation, desire, pleasure, and pain as well as fear and anger. There is love, too, that can satisfy some taste to love of the truth or beauty that is pure and eternal.***

*The rational or thinking part is the highest in order*

***When a person moves from believing to thinking, he moves from the visible world to the intelligible world, from the realm of opinion to the realm of knowledge. Thinking is particularly the characteristic of the scientist. For him, visible things are the symbol of a reality that can be thought but not seen. By using visible symbols, science provides a bridge from the visible to the intelligible world. Plato believed that thinking gives us knowledge of truth.***

*ARISTOTLE (384-322 B.C.)*

***He was not only a philosopher in the modern sense but he was a man of universal learning. There was no branch of knowledge, which did not receive his attention except, mathematics. It is to him that we owe the first systematic treatment of psychology. His method was two- fold, both inductive and deductive. He was an acute observer, and his psychological treatises are overwhelmed by his observations, many of which have stood the test of time, e.g. he introduced:***

- ***The first theory of learning***
- ***Succession of ideas***
- ***The theory that ideas are generated in consciousness based on four principles:***
    - Contiguity
    - Similarity
    - Contrast, and
    - Succession

**SOCRATES (469- 399)**

He believed in the care of the soul to be man's most important task. For him, soul was the essential man. For him, soul was not any faculty, nor was it any special kind of substance, but rather the capacity for intelligence and character. It was man's conscious personality. The activity of soul is to know and to direct a person's daily conduct. The man's greatest concern should be the proper care of his soul so as to make the soul as good as possible.

*ALCAMEON: (500 BC)*

***A physician, who performed the first dissection. He was interested in philosophy and directed his attention to understanding perception***

- *Origin of Physiological Psychology:* ***He believed that sensations and thoughts occur in the brain. He was known as "father of Greek medicine"***
- **Brain is the seat of all human intellectual faculties**: He recognized the importance of brain and clearly distinguished between sensory perceiving and thinking. He was the first to take anatomical dissection for research purposes and also the first vivisectionist.

*Muslim Influence*

- The contributions of the Muslim scientists in the field of physiological treatment are very significant besides their contribution to "psychotherapy."

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- The period which was called Europe's Dark Age was the period when Muslim philosophy, science, and knowledge flourished.
- Initially mental disorders were taken to be caused by super-natural phenomena and therefore the cure was done through witchcraft and magic .On the contrary, Muslims presented the "humane concept" of mental treatment. They gave new ideas and concepts about mental health, personality and rehabilitation of the mentally ill
- Muslim thinkers and philosophers established the first mental hospital in Spain

**Muslim Philosophy: Types of Soul**

Man is a compound of body and soul. Soul is of two types:

1. ROOH-E-RABBANI
2. ROOH-E- HAEWANI

***Rooh-e -Rabbani***

The part of the soul that makes it possible for man to make a connection with God. At the same time bodily needs should also be not denied satisfaction. If there is a balance between body and soul, then the individual is normal.

***Rooh-e-Haewani***

• Man possesses 'Nafs' or the soul.
• It is the force with the help of which man fulfills all his desires.

**Levels of 'Nafs'**

Nafs is divided into three levels:

1. Nafs-e-Mutmaina.
2. Nafs-e-Liwama. /Nafs-e- Natiqua.
3. Nafs-e- Ammaraa

***Nafs-e- Mutmaina***

•At this stage, the body and soul are in complete harmony.
•There is no conflict between good and bad and man is satisfied physically, mentally and spiritually**.**

***Nafs-e- Liwama/Nafs-e-Natiqua***

•At this stage, the conflict between good and bad starts, both positive and negative forces clash with each other.
•Man is in a state of "do" and "don't".

***Nafs-e- Ammaraa***

•At this stage, negative forces have a complete control over the individual.
•It is the animal tendency of man, the baser self.
•All bad habits and wrong doings are due to this Nafs e.g. greed, pride, anger, lust, hatred etc.

That's why; philosophers emphasized the control of this Nafs. The outlet of these negative forces is essential; otherwise man becomes mentally ill, and enemy of himself.

*Muslim Philosophy and Mental Health*

- Muslim Philosophers presented concise and clear ideas about the types, actions and functions of human nature
- A child is born pure. He has both the positive and negative forces, but they are not at conflict at that time and are in complete harmony. Man has been given the ability to differentiate between good and bad

© Copyright Virtual University of Pakistan

*Muslim Philosophers*

*Imam-Razi (850-925 Ad)*

- ***A person maintains sentimental attachment with the physical/material object and when he has to part away from the object he becomes frustrated and a mental patient due to the sentimental attachment with the mortal things***
- ***He keeps on increasing his attachment with these things until it become more important than "necessary"***
- ***Believed that person should love others through God. These physical things are granted by God and He takes them back whenever He wants***

*AL-FARABI (870-950 AD)*

- ***Philosopher and poet***
- ***According to him, Man is composed of two elements; body and soul***
- ***Believed in dualistic nature of Man***
- ***He was of the view that there exists no relationship between body and soul***

*Ibne- Muskavia (930-1030 Ad)*

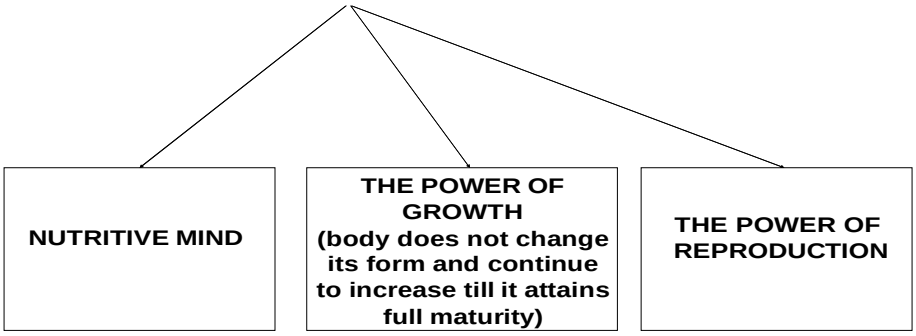
- ***"Man is a compound of body and soul"***
- *'Rooh'* ***is the main factor that controls our actions and maintain them***
- ***If 'soul' rules over the body then person remains mentally healthy but if body rules over the soul then the person becomes mentally ill***

*Ibn-E-Sina/Avicenna (980-1037 Ad)*

- ***A physician, scientist and a philosopher***
- ***Considered as the great physicians of 'Middle Ages'***
- ***Gave importance to the 'sentiments' of the individual***
- ***He said," When man is away from God's love, he is also away from man's love"***
- ***Gave the systematic account of kinds of mind and its faculties***

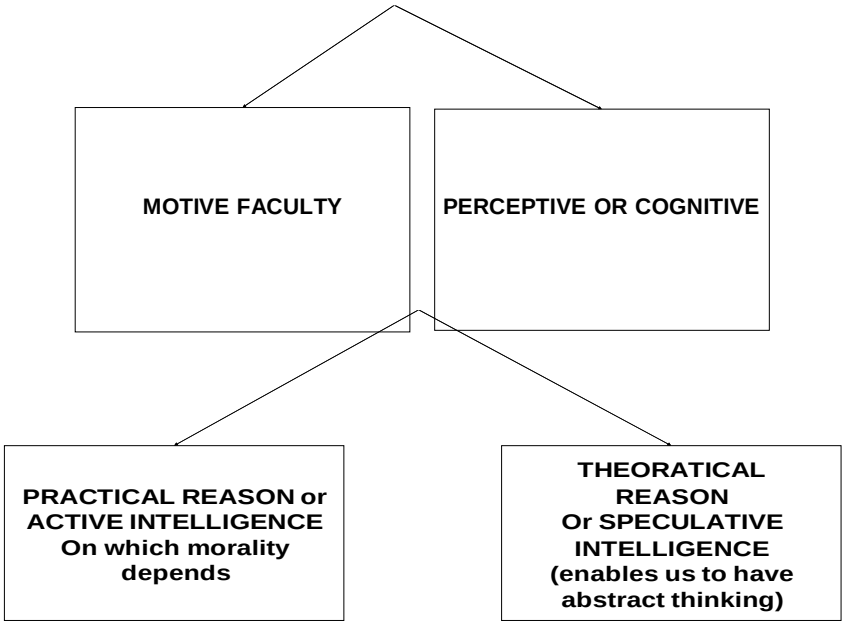
***According to him, there are three kinds of mind:***

- Vegetable Mind
- Animal Mind




- Human Mind


Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT




Human Mind

*Imam-Ghazali (1058-1111 Ad)*

- ***Believed that 'self' which is called 'Qalb' is the essence of Man.***
- ***It is the spiritual entity residing in the human body which controls the organic and physical functions of an individual***
- ***'Self' is the center of personality from which all the psychological phenomena originate***
- ***He classified the behavioral mal-adjustments into the bodily and spiritual disorders***

***According to him there are** SIX **powers of "**Self**":***

- Anger
- Impulse
- Apprehension
- Intellect
- Appetite
- Will

- ***Anger is the 'beastly power' and 'intellect' is the 'Devine power'.***
- ***His method of treatment is called "contradictory treatment" i.e., illiteracy is treated with literacy.***
- ***The therapist was named 'Sheikh' and patient called 'Mureed'.***

**Ibne Arabi (1165-1240 Ad)**
•Believed in the idea of "WAHDAT- UL WAJOOD" which means that Man is the part of God himself.
•Because Man is created by God, so for mental health, it is essential that he should perish himself in the "ZAAT" of God.

**Mujadad Alfsani (1564-1625 Ad)**

•Supported the idea of "WAHADT -UL-SHAHOOD" means "REFLECTION OF GOD" which means that the God's reflection can be seen in the things, which have been created by God.
•A person who is complete in his self and a follower of Shariat and Tareequat is mentally healthy.
•Believed that God does not finish the individuality of human beings and it is not necessary that man should finish his self and amalgamate into the zaat of God.

**Shah Wali Ullah (1703-1762 AD)**

•Mentioned about two forces:

I. Beastly Force or Baheemi
II. Ar-Rabbani or Devine.

•Both are contradictory forces and are always struggling. This struggle is called "TAJAZUB".
•When there is no struggle between these forces, then the individual's condition is called "ISTALLAH"(mentally healthy and well balanced).
•But when they are struggling and have conflict, then it is called "ALLAHIE TAJAZUB (tendency towards mental illness).

***Developments since 17th Century A.D.***

***Rapid developments: The 17th century was a century in which modern concepts and development were taking place in many fields like Physiology, Astronomy, Physics etc, and displaced the old concepts of Aristotle, Plato etc. These developments brought about changes in the philosophical approach towards the understanding of human nature as well.***

***Rene Descartes (1596-1650 Ad)***

- *His most important work was his attempt to resolve the mind- body problem, an issue that had been controversial for centuries.*

- *He saw human body as a piece of machinery; intricate and complicated. He believed that body is a machine whose operation can be adequately explained by the mechanical laws of the movement of objects in space. He recognized no difference between the hydraulically operated figures and the body, and he explained every aspect of physical functioning (digestion, circulation, sensation, motion and so on) in mechanical terms*

- *Mind-Body "Interactive Dualism": mind and body are separate entities influencing each other. However, he argued that the mind can exert a greater influence on body than was previously thought.*

- *Nerves are hollow tubes through which "Animal Spirits" conduct "Impulses" he claimed that the heart was filled with a kind of innate heat. In his book "On Man" he went on describing how the pineal gland is moved and shaken by incoming animal spirits. He also added that the animal spirits are carried down the nerves to muscles; as spirits run into the muscles, they are inflated, thus causing contraction of the body region. According to him, messages are transferred to the brain via the animal spirits in the nerves, where the pineal gland pushes them into those pores leading most directly to the nerves controlling the movements of the organs*

***Franz Joseph Gall (1758-1828 Ad)***

- *Known for his work on phrenology*
- *He postulated the idea that particular psychic functions are represented by particular areas of the brain.*
- *Intelligence, moral character and other personality characteristics can be discerned by the shape of, and the number of bumps on, a person's skull.*

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

### *John Locke (1632-1704 Ad)*

*His major contribution to psychology was an essay concerning human understanding, which appeared in 1690 and was the culmination of some 20 years of study and thought; it was later considered as the formal beginning of English/British Empiricism.*

**His primary question was how the mind acquires knowledge?**
Locke, first denied the existence of innate ideas, arguing that humans are not equipped at birth with any knowledge .He admitted that certain ideas may seem to adults to be innate (such as the idea of God) because adults have been constantly taught the ideas since childhood and cannot remember any time when they were unaware of them. So, he explained the innate ideas in terms of habit and learning. He gave the concept of "Tabula Rasa"; People are born in this world with empty minds i.e."Tabula Rasa" or a blank slate. The ideas and memories are imprinted on our minds as a result of experience.

### *Later influences*

*The physiological research that directly stimulated and guided the new psychology was a product of the late 19th century. These developments supported the scientific approach to the psychological investigation of the mind. Early developments in physiology led to the development of experimental and research oriented psychology. In 19th century, great changes occurred in terms of scientific research and developments. Besides developments in other fields, discoveries in* ***Physiology also took place.***

A number of great thinkers made contributions in this regard and all of them are worth mentioning. However, since this is not a course in the history of psychology, we will restrict our discussion to the major contributors alone.

### *Emergence of Schools of Thought*

*Wilhelm Wundt in Germany established the foundations of psychology by founding the first psychological laboratory in Germany in 1879. By that time psychologists were working in different nations, on different lines. Many of them were trained at Wundt's laboratory. Later on, psychologists began to be associated with different approaches for understanding and explaining human thought and behavior. The following early approaches or conceptual models guided the work of psychologists:*

### *Structuralism*

*It focused on the fundamental elements that form the foundations of thinking, consciousness, emotions and other kinds of mental states and activities. Structuralism entailed early concepts of psychology and primarily used the procedure called* introspection *(in which the subjects were asked to describe in detail what they were experiencing when they were exposed to a stimulus) in order to study the mind.*

### *Functionalism*

*It is an approach that concentrated on what the mind does; the functions of mental activity, and the role of behavior in allowing people to adapt to their environments. This school founded by the American psychologist William James, became prominent in the1900s.*

### *Gestalt Psychology*

An approach that focuses on the organization of perception and thinking in a ''whole" sense rather than on the individual elements of perception. Instead of considering the individual parts that make up thinking, gestalt psychologists took the opposite track. They concentrated on how people consider individual elements as units or wholes. Their contribution in understanding the perceptual phenomena is very significant.

### *Prevalent Models*

*The early roots of psychology are complex and varied, and consequently it is not surprising that the field is so diverse in nature today. Today, one can see that different approaches or models prevail. All of these models describe, explain, understand, and*

*predict behavior and mental processes from a different perspective. These are not entirely contradictory in nature, but are different in terms of their emphasis and focal point. There is no single model that can be called right or wrong. In fact most modern psychologists believe in different ideas from different theories, at the same time.*

**Biological model**
The psychological model that views behavior from the perspective of biological functioning. The role of brain, genes, neurotransmitters, endocrine glands etc

**Psychodynamic model**
The approach that concentrates on the belief that behavior is motivated by the inner forces over which individuals have little control. It was founded by the Viennese physician Sigmund Freud in early 1900s.

**Cognitive model**
The psychological model that focuses on how people know, understands, and think about the world. Main emphasis of this approach is, besides on people's understanding and thinking, on describing the patterns and regularities of the operation of our minds.

**Behavioral model**
This psychological model focuses on the overt observable behavior. The model grew out of the rejection of psychology's early emphasis on the inner working of the mind, suggesting instead that observable behavior should be the focus of attention. John B. Watson was the first person to advocate the behavioral approach.

**Humanistic model**
The psychological model that suggests that people are in control of their lives. It is considered as one of the newest and major approaches to psychology. This approach rejected the view that behavior is determined by automatic, biological forces, unconscious processes or by the environment; it suggests instead that people are in control of their lives. People are naturally inclined to develop towards higher levels of maturity and fulfillment and that, if given the opportunity will strive to reach their full potential.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**LESSON 3**

# SCHOOLS OF THOUGHT

*Wilhelm Wundt, in Germany, established the foundations of modern psychology in 1879. He wanted to study, experimentally, the conscious experience of individuals. As discussed earlier, the different schools of thought gradually emerged after psychology took this scientific turn. These schools were basically different ways of observation, description, understanding, and prediction of psychological phenomena; in the present context, mental processes and behavior*

## *Earlier Schools Of Thought*

*The earlier schools that paved the way for further developments in modern psychology were*

- **Structuralism**: focused on studying the conscious experience by looking into its individual parts or elements.
- **Functionalism**: focused on what the mind does and how it does.
- **Gestalt psychology**: focused on studying the whole experience of a person rather than breaking it into individual components.
- **Psychodynamic School**: focuses on the unconscious forces that drive/ motivate human behavior.
- **Behaviorist / Behavioral School**: focuses on studying the behavior that is observable and overt.

*Prevalent Approaches / Models / Perspectives*

At present some of the earlier approaches still exist. Psychologists belonging to these sets of theories have contributed a lot to the body of psychological knowledge and practice.
Today, we can see at least six approaches or models of dealing with the psychological phenomena.

**Biological Approach**

The psychological model that views behavior from the perspective of biological functioning. The role of brain, genes, neurotransmitters, endocrine glands etc. How the individual nerve cells are joined together, how the inheritance of certain characteristics from parents and other ancestors influences behavior, how the functioning of the body affects hopes and fears, what behaviors are due to instincts, and so on. Psychologists using the biological model view even more complex kinds of behaviors such as emotional responses e.g. anxiety, as having critical biological components.

**Psychodynamic Approach**

The approach that concentrates on the belief that behavior is motivated by the inner forces, over which individuals have little control. Founded by the Viennese physician Sigmund Freud in early 1900s, proponents of psychodynamic perspective give importance to the inner unconscious experiences and the forces that led that behavior. Freud believed that unconscious determinants of behavior had a revolutionary effect on 20th century thinking, not just in psychology but also in related fields a well. Although many of the basic principles of psychodynamic thinking have been highly criticized, the model grown out of Freud's work has provided a way not only for treating mental disorders but also for understanding everyday phenomena such a prejudice and aggression.

**Behaviorist / Behavioral Approach**

The psychological model that focuses on the overt observable behavior. The model emerged as a reaction to the earlier approaches that emphasized the significance of hidden, underlying, predetermined forces. The behaviorists suggest that observable behavior alone should be the main area of interest to psychology.

**Humanistic Approach**

The psychological model, that suggests that people are in control of their lives. It is considered as one of the most recent approaches to psychology. This approach rejected the view, that predetermined, automatic, biological forces, unconscious processes or the environment determines behavior. On the contrary, it proposes that people themselves decide about their lives. A failure in being capable of doing so leads to psychological problems. It also stresses the idea that people, by nature, tend to move towards higher levels of maturity and maximum potential.

© Copyright Virtual University of Pakistan

**Cognitive Approach**

The psychological model that focuses on how people know, understands, and thinks about the world. Main emphasis is on how people understand of the world, and their thinking, affects their responses; how it may lead to positive or negative psychological consequences, and even health-related outcomes.

*Earlier Schools of Thought*

*Structuralism*

- The school of thought that focused upon the study of mind and conscious experience: consciousness, thinking, and emotions. They used introspection as their method of study.
- Focused upon the structure and operations of the mind rather than studying whole things and phenomenon. Hence named as Structuralism.
- The first well formed system of psychology that laid the foundations for the scientific and experimentally oriented study of mind and mental processes.
- Emerged from the work of Wilhelm Wundt who set up the first psychology laboratory at Leipzig, Germany, in 1879 to study the "building blocks of the mind", and is generally known as the founder of "scientific psychology". He proposed materialism because he did not think a science could be operated solely through physical investigations of the brain. He felt that the study of mind must be a science of experience. He supported the existence of the science of psychology quite independent of biology and physiology. He believed that psychology must have an experimental side.

**Subject matter of psychology**

According to Wundt, the subject matter of psychology is to be immediate experience, as contrasted to mediate experience. By mediate experience Wundt meant experiences used as a way to find out about something other than the experience itself. This is the way in which we use experience in gaining knowledge about the world.

Immediate experience is the experience as such, and the task of psychology is to study this immediate experience. The physicists are, on the other hand, interested in studying only the mediate experience, but the Wundtian psychologists study immediate experience.

*Main Presumption*

- All human mental experience could be understood as the combination of simple events or elements. By analyzing the basic elements of sensations and other mental experiences, the underlying structure of the mind could be unveiled
- Task of psychology is to identify the basic elements of consciousness just like physicists could break down the basic particles of matter

*At Wundt's Laboratory*

- Studies and experiments were conducted on the fundamental elements that form the foundation of thinking, consciousness, emotions and other mental states
- Systematic, organized and objective procedures were used so that replication was possible
- The procedure used for studying the "structure of mind" was called "**Introspection**"; a method used to study the structure of the mind, in which subjects were asked to describe in detail what they were experiencing when exposed to a stimulus.

*Introspection*

- The subjects gave detailed reports of what they experienced when they were exposed to a stimulus

*The Impact of Wundt's Lab*

Attracted leading scientists and students from Europe and U.S.A.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*James Mckeen Cattell*

Known for his work on individual differences and "Mental Tests".

*Emil Kraeplin*

Postulated a physical cause of mental illness
In 1883, he gave the first classification system of mental disorders

*Hugo Munsterberg*

First to apply psychology to industry and law

*Edward B. Tichener*

Known as the formal founder of Structuralism

***Edward Bradford Tichener***

- American psychologist, who was English by birth, but German in professional and personal temperament, who spent his most productive years in Cornell University, New York.
- He was solely concerned with studying the brain, and the unconscious, and for this he believed, we should break it down into basic elements. After that, we can construct the separate elements into a whole and understand what it does.
- He believed that we can study perception, emotions and ideas through introspection, by reducing them to their elementary parts
- There are four elements in the sensation of taste: sweet, sour, salty and bitter
- Ideas and images are related: ideas were always accompanied by images
- The underlying process in emotions was affection

*Criticism*

***This school of thought has been criticized on various grounds i.e.***

*It was Reductionist*

***It reduced all complex human experience to simple sensations***

**It was Elementalistic**

The structuraralists sought to look at individual elements first, and then combine parts into a whole, rather than study the variety of behavior directly.

**It was Mentalistic**

Structuralism studied only verbal reports of human conscious experience and awareness, ignoring the study of subjects who could not report their introspection.

*Functionalism*

***An approach that concentrated on what the mind does, in other words the functions of mental activity, and the role of behavior in allowing people to adapt to their environments. The functionalist psychologists start with the fact that objects are perceived and "how" they are perceived. They asked "why" as well. This school became prominent in the1900s. It emerged as a reaction to Structuralism.***

- Founded by William James, also known as the founder of American Psychology.
- Emphasized "function" rather than "Structure" of human consciousness i.e., what the mind does
- Focused upon the way humans adapt to their environment; what roles behavior played in allowing people to better adapt to their environment

- Examined the ways in which behavior allows people to satisfy their needs
- Functionalists were especially interested in education and applied psychology

*Method of Investigation*

*Longitudinal Research*

Observation, interviews, and testing of a person over a long period of time: made possible to observe and record the subject's development and his reaction to different circumstance.

*William James*

***He was the leading precursor of functionalist psychology. James was a Harvard University professor, primarily trained in physiology and medicine. Psychology and philosophy fascinated him, and he treated psychology as a natural science. In 1875 he offered his first course in psychology. In 1890 he published "Principles of Psychology", a two-volume book, which became a leading psychology text in the U.S.***

James wrote about the stream of consciousness, emotions, the self, habit formation, mind-body link and much more. He was also interested in will, values, religious and mystical experiences. James said: "We should study consciousness but should not reduce it into elements, content and structure". Acts and functions of mental processes need to be focused upon, rather than contents of the mind. Consciousness was an ongoing stream, and was in continual interaction with the environment. Careful observation is important; Wundt's rigorous laboratory methods are of little value. James believed that each individual has a uniqueness that could not be reduced to formulas or numbers

*John Dewey*

- Famous American educator
- One of the key founders of "Functionalism"
- Stimulus– Response phenomenon is not an automatic behavior, the goal of the person performing it has the main role in it; the stimulus and the response determine each other
- It is the function, or the goal, of the whole action that elicits response
- Dewey developed the field of 'School Psychology' and recommended ways for meeting student's needs
- Teachers are strongly influenced by their psychological assumptions about children and the educational process

Teachers need to understand two issues:

i. Children and adults are different; teaching/education should be in accordance with children's developmental readiness
ii. Children are similar to adults in the sense that they perform better when they have some control over what they are to accomplish; the curriculum should be designed accordingly

Applied psychology flourished following the emergence of functionalism

i. James Mckeen Cattell began studying ways to measure intelligence
ii. Psychology entered the world of business; Frederick Taylor developed 'scientific management'
iii. Other functionalists: James Rowland Angell, Harvey A.Carr

**James Rowland Angell**

- Founded the psychology department in Chicago, the most influential of its time.
- Believed that the function of consciousness is to improve the adaptive abilities of the organism and that psychology must study how mind did these kinds of adjustments with respect to the environment.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**Harvey A.Carr**

- Defined the subject matter of psychology as mental activity, whose function is to acquire, fixate, retain, organize and evaluate experiences and use these experiences in some kind of action.
- Carr believed that the study of cultural products such as literature, art, language or social and political institutions could provide information on the kind of activities that produced the actions and behaviors.

**Gestalt Psychology**

- An approach that focuses on the organization of perception and thinking in a ‘‘whole” sense rather than on the individual elements of perception. Instead of considering the individual parts that make up thinking, gestalt psychologists concentrated on how people consider individual elements as units or wholes. They made great contributions to the understanding of the perceptual phenomena.
- This school developed as a reaction to structuralism in the early 1900s
- In contrast to the structuralist approach of breaking down conscious experience into elements, or focusing upon the structure, the Gestalt school emphasized the significance of studying any phenomenon in its overall form.

- The word gestalt means “Configuration”
- The main concept that the Gestaltists posed was that the “WHOLE” is more than the sum of its parts, and it is different from it too.
- They concentrated on how people consider individual elements together as units or wholes
- The concept of Gestalt applies to everything, objects, ideas, thinking processes and human relationships
- Any phenomenon in its entirety may be much greater than when it is seen in a disintegrated form
- Three German psychologists Max Wertheimer, Kurt Koffka and Wolfgang Kohler were regarded as the founders of gestalt school as each one of them had done significant work in his respective field.

*Max Wertheimer*

- The founder of Gestalt Psychology, born in Prague in 1880
- Studying at the University of Frankfurt he became aware of a form of apparent motion that was called **“Phi phenomenon”**
- **Phi phenomenon** = when two lights are in close proximity to each other, flashing alternately they appear to be one light moving back and forth; therefore the whole was different from the separate parts; movement perceived whereas it never occurred
- We perceive experiences in a way that calls for the simplest explanation, even though reality may be entirely different; this is Gestalt **Law of Minimum Principle.** We tend to organize our experience so that it is as simple as possible.
- Explanation of phi phenomenon led to a separate school of thought i.e., Gestalt school, that had deep rooted impact on learning, ethics, and social psychology

*Gestalt Laws of Organization*

We organize our experiences according to certain rules, in a simple way:
**Proximity:** Close or nearer objects are perceived as coherent and related.
**Similarity:** Tendency to perceive objects, patterns or stimuli as groups, which are similar in appearance parts of the visual field that are similar in color, lightness, texture, shape, or any other quality
**Good Continuation**: Tendency to group the stimuli into smooth and continuous patterns or parts
**Closure**: It is the perceptual tendency to fill in the gaps and completing the contours; enables us to perceive the disconnected parts as the whole object.
**Figure and Ground**: Our perceptual tendency to see objects with the foreground as well as the background___the object is being recognized with respect to its background. e.g. black board and chalk.
(These will be discussed in detail in the section of perception).

*Kurt Koffka*

- Wrote the famous "Principles of Gestalt Psychology" (1935)
- Talked about geographical versus behavioral environment: people's behavior is determined by how they perceive the environment rather than by the nature of the environment.

*Wolfgang Kohler*

- Gave the concept of "insight" and "transposition", as a result of his observations of a caged chimpanzee and experiments with chickens
- **Insight** = spontaneous restructuring of the situation
- **Transposition** = generalization of knowledge from one situation to another
- Kohler also talked about Isomorphism; changes in the brain structure yield changes in experiences

*Other major contributions*

- **Gestalt approach to ethics:** Truth is truth when it is complete and corresponds fully to the facts of the situation
- **Zeigarnik's Effect:** Bluma Zeigarnik's experiments; we remember interrupted tasks better. The tension caused by unfinished tasks helps us in remembering
- **Group Dynamics:** Instead of focusing on people's individual attributes we should see them as whole persons

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**LESSON 4**

## PERSPECTIVE/MODEL/APPROACH

- ***A paradigm in psychology is a distinct way of describing, observing, understanding, and predicting any given psychological phenomena. The professionals, as well as students, in order to conceptualize and organize the available information, need a model or paradigm. Also, it is required because it is used to test hypotheses and for conducting research work in order to testify the validity of assumptions.***
- Includes assumptions about what drives human behavior, how disorders develop, and treatment prescriptions

*Biological /Medical Perspective*

Based on the assumption of **Materialism** i.e., all behavior has a physiological basis

- An understanding of biochemical processes will give an understanding of psychological and social phenomena
- Physical structures and hereditary processes determine behavior or behavior potential
- Physical/physiological interventions can alter mental processes and behavior
- Root cause of abnormalities and disorders lies in biology and requires medical intervention

**Historical Background**

The historical roots of biological model are very old, dating back to at least the time of *Hippocrates.* There are a number of great names that contributed to this approach, of which the more important ones will be discussed.

**Hippocrates (460-377 B.C)**

- Greek physician/philosopher
- Regarded as the "Father of Medicine"
- Talked about basis for medical problems
- Believed that rational knowledge could serve a path for understanding psychological problems.

**Galen (129-199 A.D)**

- Born to Greek parents in Asia Minor
- Great physician with an empirical approach who rejected the old doctrine and relied on his observation and research.
- Correctly identified various parts of the nervous system and had an accurate grasp of how nervous system functions.
- Known for anatomical studies on animals and observations of human body functions

**Julien Offroy De La Mettrie (1709-1751 Ad)**

- French priest turned physician
- Noticed that his fever and the resulting physical condition affected his mental state as well as his physical state
- Body is like a machine and the soul is no different from mind
- Mind was a part of the body

**Cabanis**

- French physician
- Consciousness was a function of brain and was proved by the fact that guillotine victims were not conscious after beheading

**Philippe Pinel (1745-1826 Ad)**

- French physician
- Believed that abnormal behavior is caused by some hereditary defects or nervous system defects.

**Wilhelm Griesinger (1817 – 1868 Ad)**

- German psychiatrist
- Believed that the best way to understand mental disorders is to assume that they are caused by brain pathology

**Paul Broca (1824-1880)**

- French surgeon and anthropologist
- His main contribution is with reference to the localization of function; specific areas of brains are responsible for specific functions
- Discovered speech center in brain

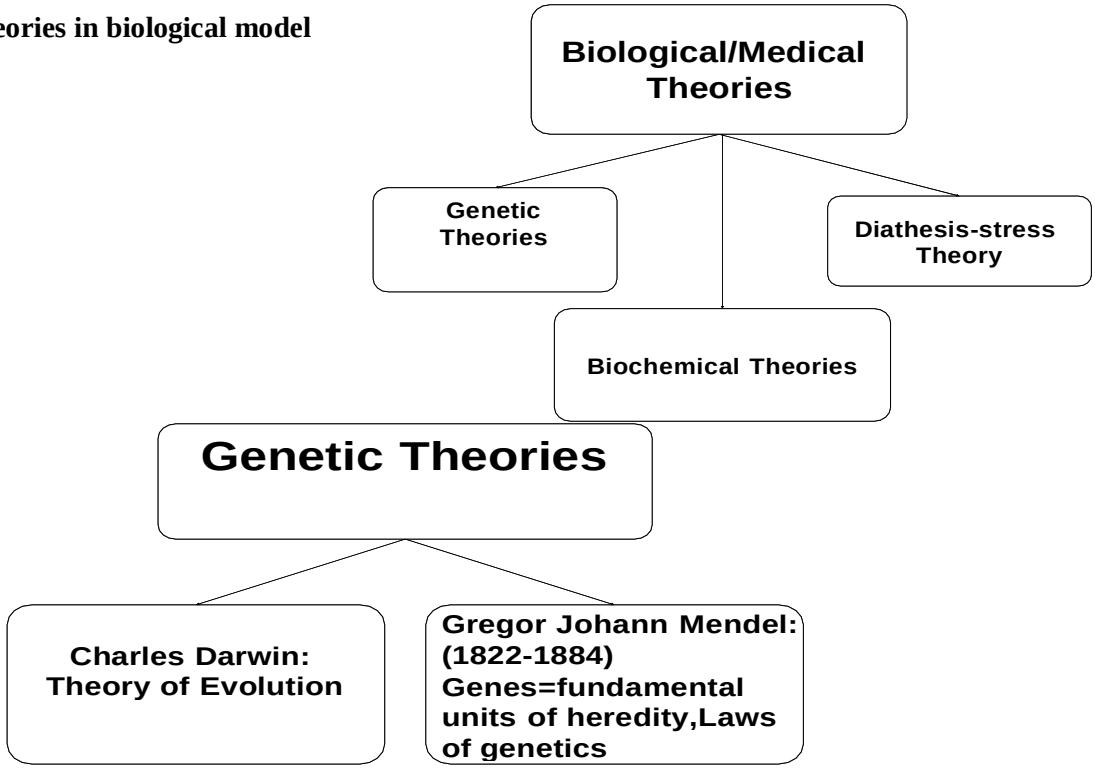
**Emil Kraepelin (1856-1926 Ad)**

- German psychiatrist
- Stressed the likely physical cause of mental illness, and gave the first classification system of mental disorders

**Charles Darwin: (1809-1882 Ad)**

- British scientist
- Author of the revolutionary "The Origin of Species" (1859)
- According to Darwin, variations among individuals of a species would occur by chance, but could in turn be passed on to the future generations
- Gave the concept of "Survival of the Fittest" ;only those variations which helped the individuals survive long enough to breed would sustain, and be passed on

**Theories in biological model**




*Biochemical Theory*

Very small amounts of certain chemicals in the body can cause profound changes in behavior as proved by researches.

© Copyright Virtual University of Pakistan

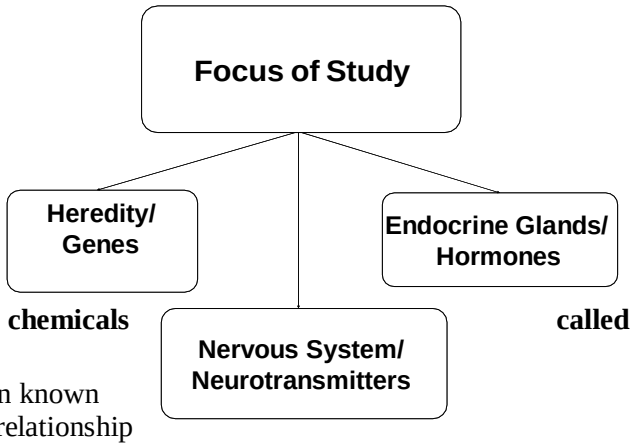
Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Diathesis-Stress Theory*

Predisposition i.e., diathesis (including genes) and stressful environment combine together to cause abnormal behavior

Traits are influenced by genes and by environment

*Focus of Study*




*Neurotransmitters*

**The synapse of the neuron releases special chemicals called "neurotransmitters"**

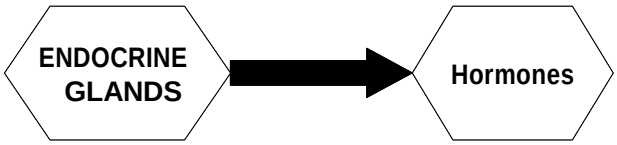
- Existence of neurotransmitters has been known since 1920's; but the evidence of their relationship with psychological disorders has been found and known since 1950s
- More than 50 neurotransmitters exist in human body

*Neurotransmitters and Their Role*

- **Acetylcholine:** Learning, Memory and Muscle control
- **Dopamine:** Motor activity, Coordination, Emotion and Memory
- **Epinephrine:** Emotion, Stress
- **GABA (Gamma-Amino Butyric Acid):** Anxiety, Arousal, Learning
- **Serotonin:** Sensory Processing, Sleep, Arousal
- **Glutamate:** Anxiety, Mood

*Endocrine Glands*

These glands form the body's "slow" chemical communication system; a set of ductless glands that secrete hormones (special chemicals) into the bloodstream"

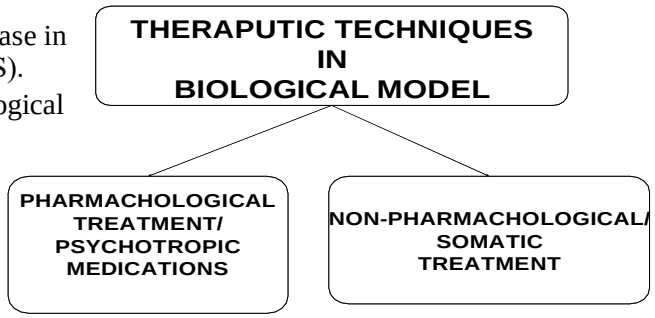



*Endocrine Glands and Abnormality*

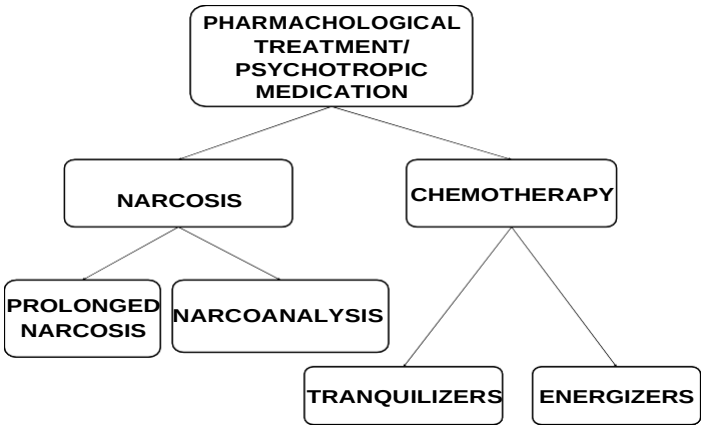
- Low secretions of the thyroid produce anxiety like symptoms such as irritability and tension
- Low level of pituitary secretions produces depression like symptoms—Fatigue, apathy etc.
- Abnormal secretions of hormones may cause major depression

**Assumptions of Biological/Medical Model**

- Abnormality is caused by some disease in the "Central Nervous System"(C.N.S).
- Disease in the C.N.S.has some biological or physical origin.
- Physicians are best able to treat diseases of the C.N.S.
- Diseases in the C.N.S. are not currently specific.



**Therapeutic Techniques in Biological Model**




*Pharmacological Treatment*

"Pharmacology is the science of the study of drugs to treat a wide range of less severe psychological disorders".

I. **Narcosis**: The word "Narcosis" is derived from the Greek word meaning, "be numb".

***a. Prolonged Narcosis***

- Person is made to sleeps for15-24 hours a day and is kept under constant observation
- Prolonged narcosis is difficult and dangerous to administer, because a number of physiological complications develop under prolonged sleep
- Seldom used today

***b. Narcoanalysis***

- Drugs are given in amounts that produce a state of "grogginess"

**II. Chemotherapy**

It is the type of therapy that treats mental and behavioral disorders with drugs and chemicals

***a. Tranquilizers***

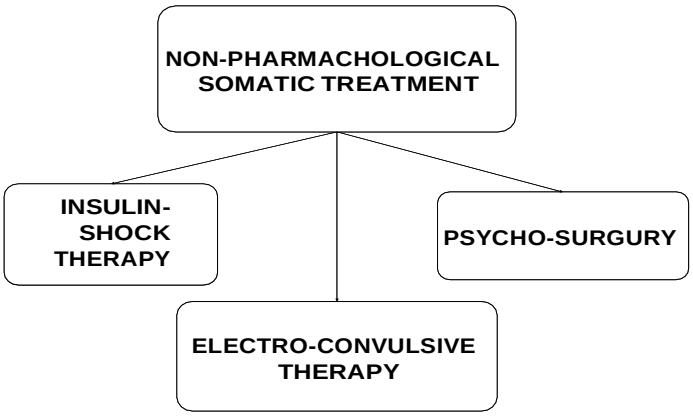
- Drugs that produce soothing and calming effects

***b. Energizers***

- They are used with the sufferers of depression s who are not helped by sedatives

*Types of Drugs*

- **Stimulants:** Caffeine, nicotine, cocaine
- **Depressants:** Alcohol, barbiturates
- **Anti-anxiety drugs:** Benzodiazepines: diazepam (Valium), lorazepam (Ativan)
- **Antidepressants:** phenezine (Nardil), paroxatine (Paxil)
- **Hallucinogens:** lysergic acid (LSD), MDMA (Ecstasy)-in large doses, cannabis (marijuana)-in large doses




© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Non-pharmacological Somatic Treatment*

In 1930's, several therapies were developed which draw considerable attention

**Insulin-Shock Therapy**

- Developed by Manfred Sakel to cure psychological disorders by administrating insulin to produce a state of comma
- Comma is caused because of a reduction in blood sugar level
- **Depression of metabolic processes tissues and cells;** Found to be Effective with schizophrenics, addicts etc., if used with psychotherapy.
- Now rarely used as a method of treatment

**Electro-Convulsive Therapy (ECT)**

- A biochemical therapy for severely depressed patients in which a brief electric current is sent through the brain of the anesthetized patient
- This controversial therapy is applied to severely depressed patients

**Psycho-Surgery**

- It involves brain surgery which is used in the treatment of severe psychotic patients who have resisted all other forms of treatments

*Merits of Biological Approach*

- Although psychological causes are significant, biological causes are worthy of examination and study too
- Research work is rapid, producing valuable new information

*Demerits of Biological Approach*

- Explains human behavior in biological terms, treats with the help of biological methods, and ignores psychological factors
- Mental life is an inter play of both biological and non-biological (environmental) factors; biological has been emphasized at the cost of ignoring the non biological, or psychological

Criticism Against Medical/ Biological Model

- No independent means of verifying/ identifying the existence of the disease; both factors and symptoms are often assessed.
- There exist alleged differences between the symptoms of physical illness and the symptoms of mental illness
- Symptoms of mental illness are subjective, whereas those of physical illnesses are objective.

© Copyright Virtual University of Pakistan

**LESSON 5**

## THE PSYCHODYNAMIC APPROACH/ MODEL

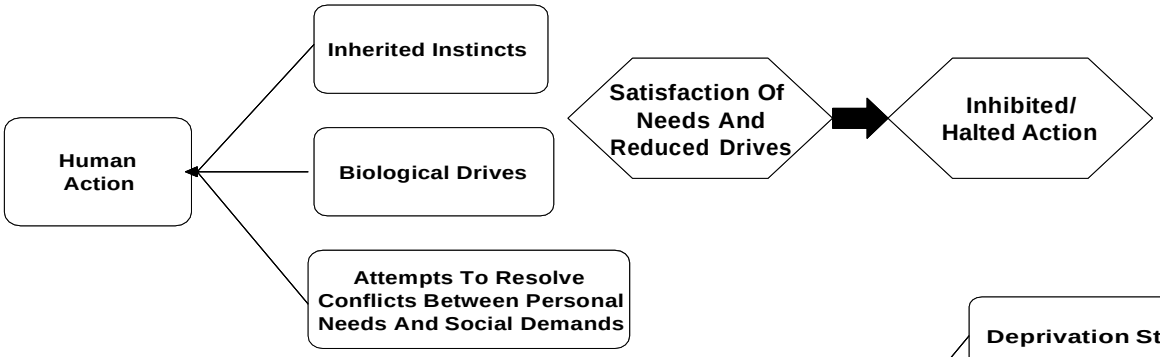
The approach that concentrated on the unconscious forces that drive our behavior; belief that the inner forces over which individuals have little control motivate behavior.

- Founded by Sigmund Freud, the most influential figure in the history of psychology.
- The basis of motivation and behavior lies in inner forces; forces that are predetermined, and forces over which humans have little control, which the person is not aware of i.e., unconscious determinants of behavior
- It maintained that instincts are the driving force behind individual's personality; there are life instincts as well as death instincts that play a role in human life.

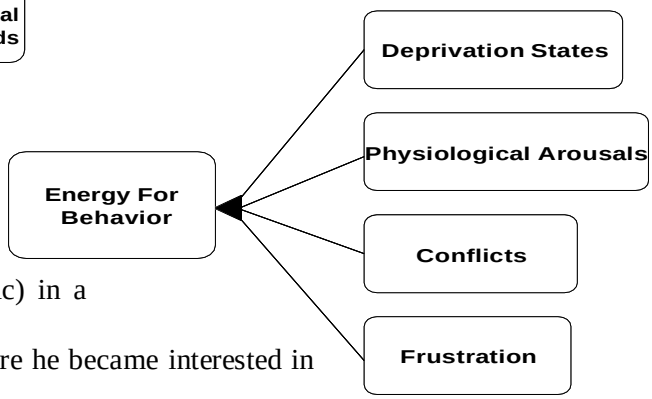
*Significance of Psychodynamic Approach*

- The most influential theory of the 20th century, that affected psychology and related disciplines in a revolutionary manner
- Gave an entirely new perspective to the understanding of behavior and mental processes as well as mental illness
- The first theory to raise the awareness that not all behavior is rational
- Gave an impressive, broad based, therapeutic approach
- Provided a basis to understand everyday life phenomena e.g. interpersonal relationships, aggression, prejudice
- Many other, later, approaches built their paradigms on this approach - some by refining it, some by deviating from it
- One of the main ideas is that there is an inner tension for the fulfillment of instincts, the tension leads to action for fulfillment, the fulfillment leads to reduced tension.

*Roots Of Human Action*




*Sigmund Freud: 1856-1939*




- Founder of psychoanalysis
- Austrian physician, neurologist, psychologist
- Born in Moravia (Czech Republic) in a middle class family
- Studied at Vienna University where he became interested in

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

neurological research

- Spent three years at General Hospital Vienna and worked in nervous diseases, psychiatry, and dermatology
- 1885: Became professor of neuropathology at Vienna University
- 1885: Following a government grant went to Paris as a student of French neurologist Jean Charcot, who was treating nervous diseases through hypnotic suggestion
- Freud's interest in psychopathology was heightened as a result of his studies of hysteria, under Charcot
- 1886: Established private practice in Vienna specializing in nervous disease. His interest shifted from physiological to psychological explanation of psychopathology
- Started collaborative work with Josef Breuer
- 1895: wrote **"Studies on Hysteria";** main emphasis was that uncharged emotional energy associated with forgotten psychic traumas resulted into hysterical symptoms
- Therapy, at that stage, involved putting the patient in a hypnotic state, where he recalled and reenacted the traumatic experience = Catharsis
- Hence the formal beginning of Psychoanalysis

*Foundations of Psychodynamic Approach*

**Psychic Determinism**

All behavior is determined i.e., has a cause that lies in the mind/psyche

**Role of Consciousness**

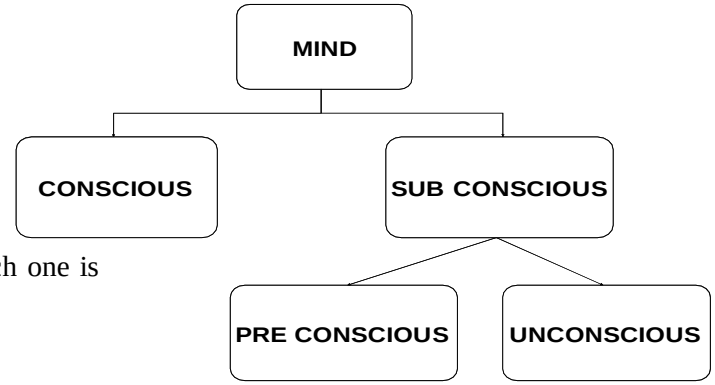
A significant part of our behavior is generated by unconscious forces

**Continuity of Normal and Abnormal Behavior**

Normal and abnormal behavior are different only in terms of degree and not in kind

**Emphasis on Clinical Observation**

Clinical observation/ case studies were the main source of data




*Structure of Consciousness*

**Conscious**

Contains thoughts and feelings of which one is immediately aware

**Subconscious**

Mind level below the level of conscious awareness

**Preconscious**

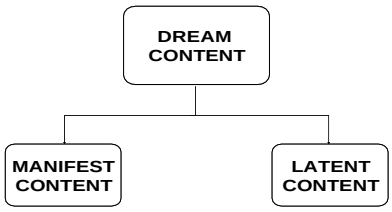
Part of the sub conscious that can be accessed by deliberate choice

**Unconscious**

Part of the sub conscious that cannot be accessed directly although impulses, ideas, and feelings may permeate out through other sources e.g. dreams, slips of tongue etc.

*Dreams in Freudian Approach*

- Dreams reflect unconscious needs, desires, and impulses.
- Dreams have two levels of dream content: manifest and latent.



Manifest content

***The obvious, apparent part: what a dream appears to be to the dreamer.***

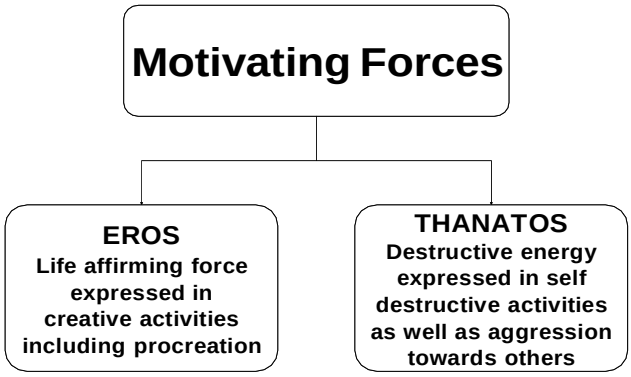
Latent content

***The dream's true meaning, which is usually disguised or distorted by dream work.***

Symbolism

- The manifest content is in a symbolic form
- The latent content is converted into this form by the 'dream censor, a mechanism that ensures that sleep is not disturbed by unconscious desires, and those desires are presented in a socially acceptable form. The manifest content is in the symbolic form of the latent content. Only the psychoanalyst can interpret it.

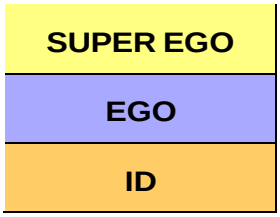
**Sources of motivation**




*Psychodynamic Model of Personality*

***Is a three-part structure of the mind; containing id, ego and super ego.***

**Id**




At birth, the entire mind consists of only id. It consists of pure, unadulterated, instinctual energy and exists entirely on the unconscious level. It is the source of basic drives; operates under the 'pleasure principle' i.e., it wants immediate gratification of needs. The id has two means of satisfying bodily needs, *reflex action* and *wish fulfillment.*

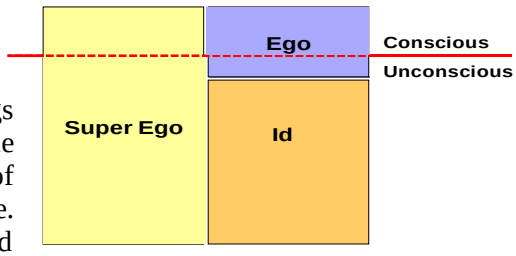
**Reflex action** is responding automatically to a source of irritation .e.g. an infant may sneeze in response to an irritant in the nose or reflexively move a confined limb, thereby freeing it. In both cases, reflex action is effective in reducing tension. Coughing and blinking are other examples of reflex action.

**Wish- fulfillment** is more complicated. It is the conjuring up of an image of an object or event that is capable of satisfying a biological need e.g. a hungry person thinks of food- related objects.

*Ego*

Mediates the link of the self with the outside world, "Real World", as well as between the id and superego; operates under the demands of the environment. It operates under the reality principle and operates in the services of id. In other words, the ego comes into existence in order to bring the person into contact with experiences that will truly satisfy his/ her needs. When the person is hungry, the ego finds food; when the person is sexually aroused, the persons finds an appropriate sex object; and when the person is thirsty, the ego finds liquid. **The ego goes through reality testing to find appropriate objects.**

*Super Ego*




There is a third component of personality that makes things much more complicated, i.e. super ego. It is governed by the moral constraints. It develops from the internalized patterns of reward and punishment that the young child experiences i.e. Depending on the values of the parents, certain things the child

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

does or says are rewarded and encouraged and others not liked
are punished or discouraged.

Opposes the id and represents the moral demands of the family and society; **it is the ‘ moral self’ or the ‘conscience’ of the person**

*Development of Personality: A Stage Approach*

Psychodynamic approach proposed a stage- theory of the development of personality:

| | | |
|---|---|---|
| **Oral Stage** | **Birth - 1 ½ Years** | Ego formation begins, weaning begins, delayed gratification is learnt; body image develops |
| **Anal Stage** | **1 ½ - 3 Years** | Continuation of ego development; toilet training; formation of super ego |
| **Phallic Stage** | **3 - 5 Years** | Bodily and genital awareness |
| **Genital Stage** | **Puberty - end of life** | Symbolic gratification of drives; secondary process thinking |

**Oral stage**

occurs during the first year of life and the erogenous zone during this stage is the mouth. At this stage, pleasures mainly come from mouth. According to Freud, an adult who is fixated at the early oral stage will engage in abundance of oral activities such as eating, drinking, or smoking. This person also will engage in activities that are symbolically equivalent to those oral activities such as collecting things, being a good listener etc.

**Anal stage**

starts during the second year of life, and the erogenous zone is the anus- buttocks region. It is the stage when the child has to gain control over his physiological processes so that they function in accordance with the demands of the society.i.e the child must be toilet trained. Fixation at this stage may result in physical problems.

**Phallic stage**

starts from the third year of life to about fifth year, and the erogenous area are the genital area. This is one of the most complicated and controversial of Freud’s stages. It is the stage of Oedipus and Electra complexes, the resolution of which has profound influence on an adult’s life. The male child experiences the Oedipus complex, which is named after an ancient play by Sophocles, entitled Oedipus Tyrannus, in which King Oedipus killed his father and married his mother. The male child resents the father, because he is regarded as a rival for the mother’s attention and affection. The female counter part of the Oedipus complex is Electra complex, named after another play by Sophocles entitled “ Electra”, in which Electra causes her brother to kill her mother who had killed Electra’s father.

**Latency stage**

it lasts from about sixth year to about twelfth year. Here the sexual interests are displaced to substitute activities such as learning, athletics, and peer group activities.

**Genital stage**

it is the final stage of development that occurs following puberty. It is the time at which the person emerges from pre genital stages as the adults as he/ she destined to become. Now the child has become a socialized adult with heterosexual interests leading to marriage and child- rearing. If, however, the experiences during the pregenital stages cause fixation, they will manifests themselves throughout one’s adult life.

© Copyright Virtual University of Pakistan

*Anxiety*

- An emotional state experienced as a result of felt threat to the self
- Anxiety arises when ego cannot cope too much of:
  - **i. Demands of the id**
  - **ii. Demands of the ego**
  - **iii. External danger**
- In order to protect itself against anxiety and threat, ego uses defense mechanism

*Defense Mechanisms*

Ego defense system, that may be distorting reality

i. **Repression:** Blocking unpleasant/ unacceptable thoughts by pushing them into the unconscious e.g. forgetting events of the painful childhood.

ii. **Regression:** Reverting back to a stage that was satisfying e.g. a boss showing temper tantrums like a child; or acting like a baby.

iii. **Displacement:** Redirecting the expression of unwanted desires or impulses to a substitute rather than the actual target e.g. beating children when a wife cannot express anger toward husband.

iv. **Rationalization:** In order to justify one's behavior, one develops a socially acceptable explanation or reasoning e.g. going for a second marriage saying that the first wife was quarrelsome.

v. **Denial:** Refusing to acknowledge or accept anxiety provoking thoughts or impulses e.g. being a heavy smoker but saying 'I am an occasional smoker'.

vi. **Projection:** Attributing unwanted thoughts and impulses to others e.g. a person takes bribe and blames the organization for paying him not enough salary.

***vii.*** *Sublimation:* ***Converting unwanted impulses into socially approved thoughts, feelings and actions e.g. disliking the in-laws but behaving in a very friendly manner, or becoming a stamp collector to overcome the impulse to steal***

*Psychotherapy: Psychoanalysis*

- An intensive, long-term psychotherapeutic procedure.
- Requires long sessions over extended periods------may be years.
- Better suited to intelligent individuals.
- Involves a special relationship between the therapist and the patient.
- **Target:** To explore unconscious motivation, conflicts, desires.
- **Goal:** Establishing intra psychic harmony by developing awareness of the role of the id, reducing over compliance with super ego, and by strengthening the ego.
- **Understanding of 'repression':** The therapy gives central importance to the understanding of the manner in which the person uses repression for handling conflict.

*Interventions used in Psychotherapy*

1. **Free association**
   - Kept in a comfortable position, the patient is asked to talk aloud and say whatever comes to his mind without considering whether or not it is relevant, rational, or sensible.
   - The patient is asked to reveal even the most undesirable and strong thoughts that have been repressed. This leads to emotional release, called 'catharsis'.

2. **Analysis of Resistance**

At times patient feels inhibitions, and is unable or unwilling to express some thought or feeling i.e., barriers between conscious and unconscious. The psychoanalyst aims to break down such resistances so that the patient is enabled to face the unpleasant thoughts, impulses, events.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**3. Dream Analysis**

The therapist tries to uncover the latent content of dreams and decipher the symbolism involved.

**4. Analysis of Transference & Counter Transference**

- Transference: The patient's emotional response toward the therapist is often an indication of the patient's relationship with a person who had been the center of the conflict. It may be negative or positive.
- Counter Transference: The therapists' emotional reaction toward the patient is also important. He may also start having positive or negative feelings for the patient.
- Transference is analyzed and understood as part of the therapeutic process.

*Criticism against Freudian Psychodynamic Theory*

- There is no scientific proof that many psychodynamic constructs, e.g. unconscious, exist
- Psychic Determinism: Freudian approach is deterministic and leaves not much room for conscious, rational, decision making or personal will to act
- It ignores the external variables and the environment
- It emphasizes the early childhood experiences too much
- Mostly criticized for its interpretation of the relationship between the genders
- The therapy is too time consuming and therefore expensive

*The Psychoanalytic Approach after Freud*

*The Neo Freudian*

- The theorists who belonged to the Freudian school and supported it, but later digressed on some issues and differed from Freud
- They emphasized, more than Freud, the following:

  i. Current social environment play an important role in one's life.
  ii. Life experiences have a continuing influence and childhood alone should not be of prime importance.
  iii. Positive interpersonal relations of love and social motivation have a significant role.
  iv. Ego functioning is significant rather than id.
  v. Development of self-concept is important.
  vi. Self-esteem is important.

**1. Alfred Adler (1870-1937)**

His theory is known as "individual psychology" which in many ways is the opposite of Freud's theory. For Freud, individuals are constantly in conflict with one another and with society; Adler saw them seeking relationships and harmony, he looked upon mind as an integrated whole working to help to attain the future goals.

- Initially he was Freud's closest friend.
- 1911: Diverted and launched his version of psychoanalytic approach.
- Differed from Freud in:
  i. Freud's negativity (e.g. Thanatos instincts)
  ii. Freud's idea that libido is the prime impulse

*Adler's Approach*

**Main concepts:** Esteem, inferiority complex, birth order, will to power and style of life

i. We are a product of the social influences on our personality
ii. Goals and incentives drive us more than drives and instincts
iii. Our goal in life is to achieve success and superiority

**Inferiority complex:** the feeling of being less able than others. It affects one's relationship with others and his achievement in many ways.

**Motivating Forces of Human Life**

i. Feeling of inferiority
ii. People are primarily motivated to overcome inherent feelings of inferiority

**Birth Order:** has effect on personality. The first- born is different from the last one, and so is the middle- born different from others.

**Sibling Rivalry:** Siblings feel a kind of rivalry toward each other.

**Psychopathology:** Compensation: i.e., Compensatory defense mechanism combined with conscious or unconscious feelings of inferiority is the main cause of psychopathological behavior.

**Function of the Psychoanalyst:** To discover and rationalize such feelings and break down the compensatory, neurotic will for power.

**2. Carl Gustav Jung (1875-1961)**

A Swiss psychiatrist, founder of the analytical school of psychology, Jung presented a complex theory of personality.

- 1913: left the inner circle of Freud's students and colleagues, although he had chosen Jung as his successor.
- Was mystical in his understanding and description of personality.
- Had a positive approach toward one's ability to control one's destiny.
- His view of human nature is among the most complex ever portrayed. The human psyche is embedded in past, present, and future; it consists of conscious and unconscious elements, rational and irrational impulses, masculine and feminine tendencies, and a tendency to bring all these contradictory tendencies into harmony with each other. Self- actualization is achieved when such harmony exists, but self- actualization must be sought; it does not occur automatically.
- Believed that the spiritual side must be satisfied, which usually happens in middle age when many of the components of psyche have been discovered.
- Religion to him is the major vehicle in the journey towards self- actualization.

*Jung's disagreements with Freud*

- The understanding and description of the genders.
- The nature of unconscious.

*The main Jungian concepts*

**Major goal of life:** Unification of all aspect of our personality:

- Conscious And Unconscious
- Introversion (Inner Directed), Extroverted (Outer Directed)

*Libido*

- Energy for personal growth and development

*Types of Unconscious*

- **Personal unconscious:** Similar to Freudian view
- **Collective unconscious:** ideas beyond personal experience, inherited from ancestors' all generations, and common to all of humanity.

*Archetypes*

- **Part of collected unconscious, universal forms and patterns of thought:** These include themes that can be seen in myths e.g. masculinity, femininity, good, evil opposites, motherhood.

**3. Karen Horney (1885-1952)**

- German- American psychologist.
- Trained as a psychoanalyst in Germany who later shifted to the US.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- She agreed with Freud on the levels of unconscious, anxiety, and repression.
- She emphasized childhood experiences, social interaction and personal growth.

*Disagreement with Freud*

- Differed from Freud on primary impulses; impulses are not the main motivating force.
- Disagreed on Freudian position regarding the biological basis of differences between genders.

*Main Concepts in Horney's Theory:*

*Basic Anxiety*

- **A Major Concept:** If The Environment Is Hostile And The Child Feels Lonely And Isolated, Then This Anxiety Develops. It Can Be Overcome By **Proper Parental Nurturing**

*Basic Hostility*

- Children develop such hostility if parents are over strict, punishing, indifferent, or inconsistent.
- Children feel very aggressive and hostile but cannot express it. Repressed hostility leads to anxiety.

*Social Interaction and Interpersonal Styles*

She talked about the ways in which people interact with each other, and these were thought to have an impact upon the personality of an n individual:

- **Moving away from others:** seeking self sufficiency and independence
- **Moving toward others:** being compliant and dependant
- **Moving against others:** trying to gain control, power, and independence

*Neuroses*

Arise from emotional conflicts that arise from childhood experiences, and disturbances in interpersonal relationships in later life

**Relationship with the real self and the ideal self**

Horney maintained that the real self includes those things that are true about us at any particular time. The ideal self reflects what we would like to become. For normal people, the ideal self is the goal that they would like to reach in the future; it is something around which they can organize their lives and to which they can aspire. For the neurotic person, according to her, the relationship between the real and the ideal self is a problem. In the first place, the neurotic's impression of the real self is distorted. For him, the ideal self is a wish instead of reality and idealized self is an unrealistic, immutable dream

**Goal of the therapy**

For her, the goal is to create a realistic relationship between the real self and the ideal self. Horney was optimistic about human nature and the ability to change. Human interactions caused problem and human interactions solved problems also.

© Copyright Virtual University of Pakistan

**LESSON 6**

## BEHAVIORAL APPROACH

The psychological model that focuses on the overt, observable, behavior. The model grew out of the rejection of psychology's early emphasis on the inner working of the mind, suggesting instead that observable behavior should be the focus of the field. John B. Watson was the first person that advocated the behavioral approach. This is a psychological approach that considers the relationship between behavior and environmental stimuli as the focus of study; observable behavior is what psychology should be studying, understanding, and explaining.
This approach dominated psychology for most of the 20th century

*What do the Behaviorists Study?*

***They specifically study:***

- Observable/ overt behavior
- Specific measurable responses
- How particular types of behaviors are controlled by particular types of environmental stimuli

**Method of investigation:** Data are typically collected under controlled laboratory conditions, employing technological assistance

*What the Behaviorists Are Not Interested in:*

***They are not interested in:***

- Unconscious
- Inner motivation
- Biochemical processes
- These and all other states, which are not being observed with the naked eye or cannot be evaluated.

*Behaviorist Analysis*

***Behaviorist Analysis is done for seeing and establishing the relationship between the stimulus and response/ behavior.***

*Three step approach*

- **The antecedent environmental conditions:** are analyzed. i.e., the conditions preceding the action/ response/ behavior, and that lay a ground for it.
- **The behavioral response is studied:** study of the action or behavior that is to be understood, described, predicted, and controlled.
- Observable consequences are explored: **the impact resulting from the target behavior i.e. how it affects the environment or other people.**

*Basic Terminology*

- **Stimulus:** A physical energy source that has an effect on a sense organ, thus producing a response.
- **Response:** The action, behavior, or reaction triggered by a stimulus.
- **Environment:** External factors, variables, conditions, influences, or circumstance affecting one's development or behavior.
- **Variable:** A behavior, factor, setting, or event that can change / vary in amount or kind.
- **Learning:** A relatively permanent change in behavior that takes place as a result of practice and/ or experience.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Edwin L.Thorndike: (1874- 1949)*

***Edwin L.Thorndike, was an American psychologist, who's thinking is thoroughly associationistic. He was a functionalist in his emphasis on the utilitarian aspect of psychology. According to him, psychology is about the stimulus- response connections. He was of the view that behavior can be analyzed into associations. He said that the behavioral processes are quantifiable. Believed that behavior was explicable on the basis of nothing but stimulus- response connections inherited and acquired.***

*Initial work:* ***in1898 (published dissertation) studied problem solving in animals. Tried to analyze the conditions under which animals learn.***

*Focus of the study:* ***the relationship between the animals' response and their consequences.***

**Main finding:** The consequence of any response determines if the response will be repeated in future or not: **"The Law of Effect"**

*The Law of Effect:* ***Any response that leads to an outcome that is satisfying for the organism is likely to be repeated; a response leading to an outcome that is not satisfying is not likely to be repeated***

*Association by Contiguity*

- ***The organism forms an association or connection between the response and its consequences. For it to be effective, the response and the outcome have to be closely linked -- both in time and space***
- ***The theory drew attention towards the significance of reward and punishment in learning new behaviors***

*Criticism against Thorndike's Approach*

***It was not clear about what exactly 'Satisfying' meant.***

*Early Behaviorism*

**John.B.Watson: (1878- 1958):** The founder of the behavioristic school of thought.

- *American psychologist with a remarkable career.*
- *Initially trained in introspection at the University of Chicago but found it extremely vague and mentalistic.*
- *He became interested in experimental research with animals.*
- He completed his Ph.D. on that in three years, being the youngest such graduate.
- Taught at the University of Chicago for four years, joined John Hopkins as full professor and soon became chairperson of the psychology department.
- Gave a revolutionary, pragmatic approach often known as 'Radical Behaviorism'.
- He and his followers believed and advocated that psychology should depart from the study of unconscious and the mind because they could not be verified or tested scientifically.
- Observable behavior is all that psychology should be looking at.
- Environment and external world (environmental stimuli) is what shapes and determines behavior.
- Learning is what matters in what a person is, and not the inborn instincts, impulses, drive, id, or unconscious motivation. An understanding of learning will encompass all aspects of personality.
- Mentalist concepts, not grounded in reality, should be rejected.

*Impact of Learning Experience*

***"Give me a dozen healthy infants, well formed, and my own specified world to bring them up in, and I'll guarantee to take any one at random and train him to become any type of specialist I might select -***

***- doctor, lawyer, artist, merchant-chief, and yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations and race of his ancestors". (****Watson, 1924****)***

*Learned Fear: The Case of "Little Albert"*

***1920: Developing Fear; Watson and Rosalie Rayne Eleven month old Albert who enjoyed playing with a cute white rat was made afraid of it by linking a loud frightening sound with the appearance of the rat. The experiment was further expanded and Watson and Rayner demonstrated that the fear of the rat could be generalized to all sorts of stimuli: a dog, a cotton ball and a Santa Clause. Watson and Rayner could not get a chance to undo the learning as the child's mother removed him from the hospital.***

*Issues stemming from Little Albert's Experiment*

- **Unethical treatment of Albert, that too without the advised consent of his mother.**
- **Watson contradicted his own earlier assertion that early childhood emotional experiences can affect a person for a lifetime.**

*Classical Conditioning*

***Why are children scared of darkness?***

***Why some children jump with joy at the sight of a bear and some start screaming in fright?***

***Why does one coming from abroad start feeling happy at the very sight of his parents' home?***

***Why does one start feeling bad at the thought of going to a dentist?***

***The answers to all these questions can be found in the classical conditioning approach***

Classical Conditioning: The History

- ***Ivan Pavlov 1849-1936: Russian physiologist and pioneer of classical conditioning.***
- ***In the later years of the 19th century studied the basic process of digestion and won*** *Nobel Prize* ***for that in*** *1904.*
- ***The focal point was the salivation reflex in dogs.***
- It was already known that the dogs would salivate if food powder were led into their mouths, as it was a ***'reflex'.***
- The dogs salivated every time the food powder was presented.
- He observed that after some time, the dogs at times salivated just before food was put into their mouths. They also salivated at the sight of the food, and even at the sight of the lab assistant who brought food for them.
- This is where the concept of classical conditioning emerged.

Classical Conditioning: The Theory

***Is a type of learning in which a previously neutral stimulus starts eliciting a response that***

***was originally attached to a natural stimulus, because the neutral stimulus has been closely associated with the other stimulus.***

Basic Terminology in Classical Conditioning

- *Reflex*

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

***An automatic, unlearned response resulting from a specific stimulus.***

- *Un-Conditioned Stimulus (UCS)*

***A stimulus that elicits a response reflexively and reliably.***

- *Un-Conditioned Response (UCR)*

***A natural, reflexive, reliable, response of the UCS.***

- *Conditioned Stimulus (CS)*

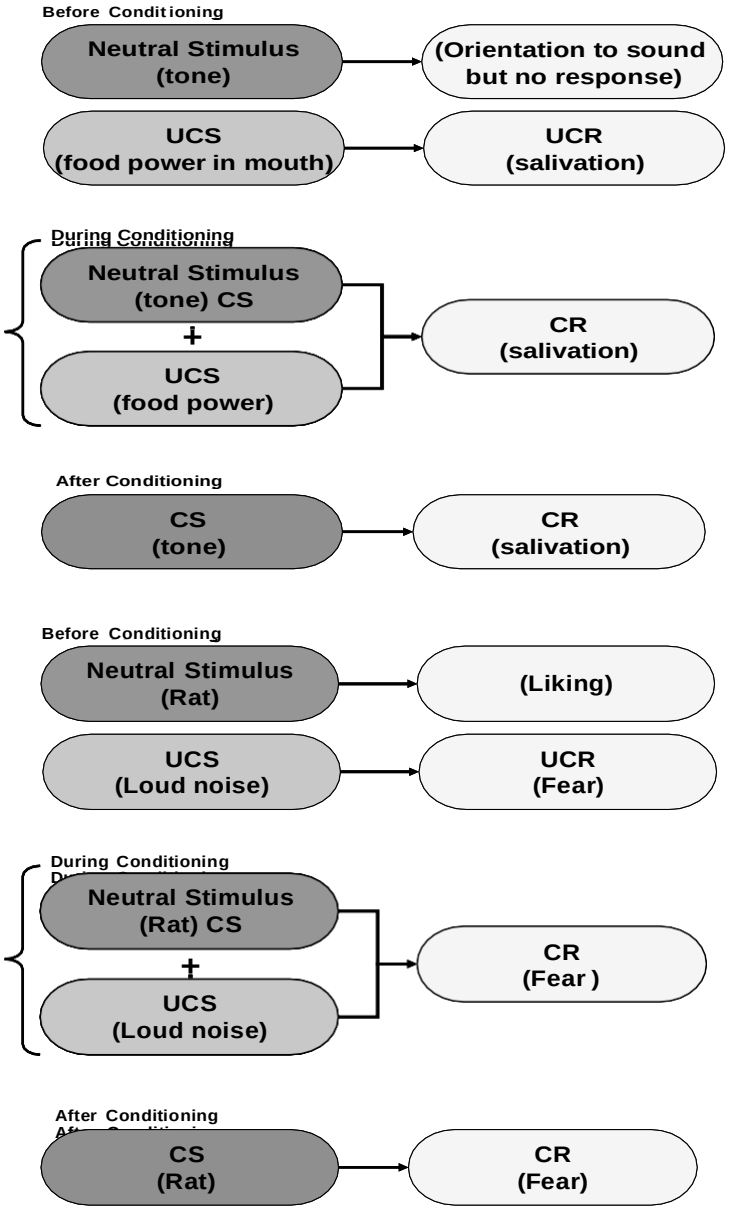
***A primarily neutral stimulus which, when paired with the UCS, starts evoking a response (different from its natural response) and the same as UCR.***

- *Conditioned Response (CR)*

***After conditioning, the CS begins to elicit a new, learned response. i.e. CR.***

Pavlovian Classical Conditioning

The following diagram explains the classical conditioning model:




Little Albert's Case

Extensions of the Main Classical Conditioning Model

There are a number of other variations and extensions of this model, which will be discussed in detail in the section on learning. Here, we will just name them:

- Extinction
- Spontaneous recovery
- Stimulus generalization
- Stimulus discrimination

Applications of Classical Conditioning in Everyday Life

- *Negative emotional responses:* ***fears, phobias-----fear of lizards, dark places, school phobia***
- *Positive emotional responses:* ***Feelings of relaxation, and happiness ---- thinking of going on a holiday***
- *Advertising:* ***Associating model with the product***
- *Psychotherapy:* ***Systematic desensitization, aversive therapy***

Operant Conditioning

- Why do teachers give stars on children's workbooks?
- Why do parents clap happily when their child utters the first words that nobody else can decipher?
- Why do manufacturers of products announce prize schemes for the consumers of their products?

**The answers to all these questions can be found in the "Operant Conditioning" approach.**

Operant Conditioning

- ***Type of learning in which a voluntary response becomes stronger or weaker, depending on its positive or negative consequences***
- ***The organism plays an active role and*** *"Operates"* ***on environment to produce the desired outcome***

Burrhus Frederic Skinner (1904-1990)

- **American Psychologist and the founder of Operant Conditioning.**
- 1931: **Received his** Ph.D. **from Harvard.**
- **During World War II, he conducted research on teaching pigeons to direct missiles to targets while flying in nose- cone. However the idea did not materialize.**
- **1947: Went back to Harvard to deliver 'William James' lectures.**
- **1948: Appointed as full professor at Harvard.**
- **While a graduate student at Harvard he started thinking on Operant Conditioning lines.**
- **His theory is somewhat similar to Thorndike's, but it was actually Watson who impressed him.**

The Typical Skinnerian procedure

- **A special apparatus usually known as skinner's box is used.**
- **Laboratory animals learn to press a lever so that food is delivered to them.**
- **The environment is controlled.**
- **The animal operates on the environment and as a result of its behavior it may be rewarded or punished. Food is the reward**
- **The consequence determines if the response will be repeated or not.**

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

Shaping: **Successive approximations of a required / desired response are reinforced until that response is fully learnt:**

- In the beginning each and every success is reinforced with a reward, no matter how small the success.
- Once the desired response is learnt the rein forcer immediately follows it, every time it happens.
- Once learnt the behavior, in many cases, the organism may not need reinforcement any more, since many behaviors are self-reinforcing e.g. learning to play a musical instrument.

**Acquisition:** Initially the response rate following reinforcement may be slow but at one stage it increases to the maximum. This is acquisition.

**Extinction:** If reinforcement is withheld the response rate decreases and finally no response is shown. This is extinction.

Reinforcement

4. **Reinforcement:** Increasing the probability that preceding behavior will be repeated through a stimulus.
5. **Positive Rein forcer:** A stimulus whose introduction brings about an increase in the preceding response.
6. **Negative Rein forcer:** A stimulus whose removal reinforces and leads to a higher likelihood that the response bringing about this removal will be repeated.
7. **Punishment:** An unpleasant or painful stimulus whose introduction following a certain behavior decreases likelihood that the behavior will occur again.

*Applications of Operant Conditioning in Everyday Life*

- ***Child rearing***
- ***Classroom management***
- ***Teaching of skills***
- ***Animal taming***
- ***Advertising***
- ***Psychological intervention and Psycho- therapy: behavior modification, assertiveness training, token economy***

*Cognitive Approaches to Learning*

The approaches that focus upon the thought processes underlying learning. Latent Learning and cognitive maps (Edward Tolman); Tolman talked about the 'cognitive maps'; it is not necessary to have an association between stimulus and response, a person can learn without showing any apparent response; in other words learning and performance are not the same

Social learning / Observational learning and Modeling (Albert Bandura): a major portion of our learning is based upon learning by observation.

**LESSON 7**

# THE HUMANISTIC APPROACH AND THE COGNITIVE APPROACH

*The Humanistic Approach*

Faced with a choice between psychoanalysis and behaviorism, many psychologists in the 1950s and 1960s sensed a void in psychology's conception of human nature. Freud had drawn attention to the darker forces of the unconscious, and Skinner was interested only in the effects of reinforcement on observable behavior. *Humanistic psychology* emerged out of a desire to understand the conscious mind, free will, human dignity, and the capacity for self-reflection and growth. An alternative to psychoanalysis and behaviorism, humanistic psychology became known as "the third force."

It is the approach that focused on:

- ***The idea that people are in control of their life.***
- ***The <u>person</u> or the <u>self</u> and personal growth and development are to be emphasized.***

The humanistic approach includes a number of other theories with the same or similar orientation e.g., 'existential' and 'phenomenological' psychology.

*Basic Assumptions of the Humanistic Approach*

i. ***In order to understand behavior we must consider the subjective experience of the person.***
ii. ***Neither past experience nor current circumstances constrain the behavior of the person.***

*Humanistic Vs Psychodynamic & behaviorist Approaches*

- ***Humanistic approach emphasizes the person, the psychodynamic stresses unconscious determinants, and the behaviorists focus upon external determinants.***
- ***Humanistic approach is more optimistic than the other two in the sense that it believes in the person's ability and will.***
- According to the humanistic thinkers, limiting ourselves to observable behavior and external stimuli alone is ignoring the thinking-feeling person, and that is dehumanizing.

**Free will:** Humans possess the ability to make decisions about their life

*Central Themes of Humanistic Approach*

- ***Human beings are capable of shaping their own destiny.***
- ***They can think and design their course of action and can follow it in the way they like.***
- ***People can overcome or minimize the environmental, and intrinsic influences***
- ***"Here and now" is important.***
- ***"Wholeness" or "completeness" of the personality is important rather than its separate, disintegrated, structural parts.***

***Humanistic approach emphasizes:***

- ***Individual's freedom in directing his future***
- ***Capacity for personal growth***
- ***Intrinsic worth***
- ***Potential for self-fulfillment***

*Emergence of the Humanistic Approach*

***Emerged in reaction to the perceived limitations of psychodynamic theories, especially psychoanalysis, as well as the staunch behaviorist way of understanding and interpreting behavior Individuals like Carl Rogers and Abraham Maslow strongly felt that the approaches prevalent at that time could not adequately address issues like the meaning of behavior, and the nature of healthy***

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

***growth. The founders of humanistic psychology asserted that people need a value system--- a system of understanding, or frame of orientation --- due to which life gets a meaning and purpose***

*Carl Rogers: (1902 – 1987)*

- ***Born in 1902 in Oak Park, Illinois, a suburb of Chicago, he underwent a strict upbringing as a child who later turned out to be rather isolated, independent, and self-disciplined.***
- ***Initially went to the University of Wisconsin for Agriculture major but later became interested in the study of religion. From there he switched on to the clinical psychology program of Columbia University, and received his Ph.D. in 1931.***
- One of the founders of the humanistic approach, Rogers was one of the most influential therapists in the 20th century.
- Research, even that conducted after his death, revealed that Rogers was cited by more therapists as a major influence on their thinking and clinical practice than any other person in psychology --- including Freud.

*Rogers' Approach*

- ***Primarily a clinical theory, based on years of Rogers' experience dealing with his clients***
- ***In its richness and maturity his theory matches that of Freud; a theory well thought-out and logical having broad application.***
- ***The theory emphasizes on a single factor "****force of life****" which he calls the actualizing tendency i.e. built-in motivation present in every life form to develop its potentials to the fullest extent possible.***
- Rogers had the person-centered approach since the 'person' was the main figure of importance,
- He believed that the most powerful human drive is the one to become "fully functioning",
- Fully functioning = a person becomes all that he or she is capable of

**To be <u>fully functioning</u> means experiencing:**

i. Optimal psychological adjustment
ii. Optimal psychological maturity
iii. Complete congruence (a feeling of integration when the self and the ideal self match; incongruence is a feeling of conflict or unease experienced in case of a mismatch between the two)
iv. Complete openness to experience

*Main Concepts*

**i. Self:** a fluid perceptual structure based on one's experience of one's own being,
**ii. Ideal self:** an Individual's goals and aspirations,
**iii. Phenomenal field:** an Individual's unique perception of the world,
**iv. Actualizing tendency:** an innate drive reflecting the desire to grow, to develop, and to enhance one's capacities,
**v. Need for positive regard:** a need for positive social contacts like love,
**vi. Conditions of worth:** restrictions imposed on self –expression in order to earn positive regard,

**Defenses:** In case of an incongruity between one's the ideal and the real self-defenses develop. Rogers talks about only two defenses: **Denial** and **Perceptual Distortion**

**i. DENIAL:** Blocking out the threatening situation altogether. Denial also includes what Freud called repression.
**ii. Perceptual distortion:** Reinterpreting the situation so that it appears less threatening, just like Freud's rationalization

*Neurotics:* ***are apart from the real and the ideal. Becoming more incongruous, they find themselves in more and more threatening situations, levels of anxiety become greater, and they use more and more defenses.....It becomes a vicious cycle that the person eventually is unable to get out of, at least on his own***

**Psychosis:** Psychosis occurs when a person's defenses are overwhelmed, and their sense of self becomes "shattered" into little disconnected pieces. His behavior lacks consistency.

*Carl Roger's Psychotherapy*

- ***Carl Rogers is best known for his contributions to therapy known as "person-centered/ Client- centered therapy/ Non- directive therapy. Also known as the Rogerian Therapy".***
- ***His main technique is "Reflection"__ mirroring of emotional experiences.***
- ***Aim of the therapy: to help a person grow and self-actualize.***
- Rogers maintained that the therapist must possess the following qualities:

i. **Congruence --** genuineness, honesty, with the client
ii. **Empathy --** the ability to feel what the client feels.
iii. **Respect --** acceptance, unconditional positive regard towards the client.

*Abraham Harold Maslow (1908-1970)*

- ***American psychologist, and leading exponent of humanistic approach.***
- ***Gave comprehensive theory of motivation.***
- ***Found the prevalent psychology to be too pessimistic and negatively oriented.***

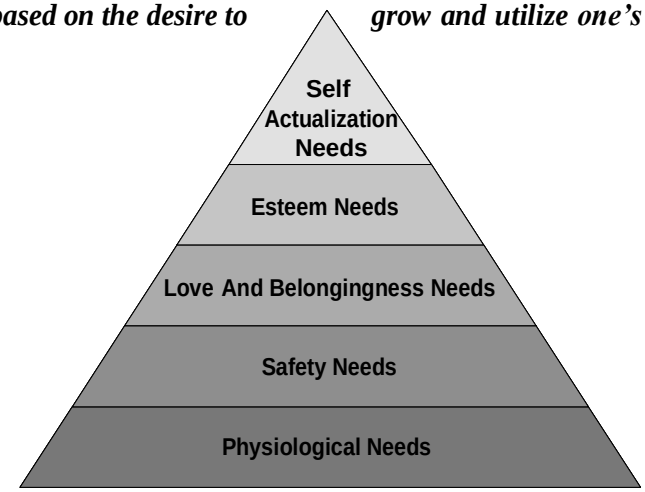
*Key Points of Maslow's Theory*

- ***Psychology and the psychologist should look at the positive side of the human beings.***
- ***There must be more to living than just being battered by a hostile environment, or by depraved instincts --- which may actually be leading to self-destruction.***
- ***People's needs are not low level and base. We have positive needs that may become neutral in the worst cases, but will not turn negative or base.***
- ***Human behavior does respond to needs but we will be wrong in saying that all our needs are only physiological in nature***
- ***Needs motivate human action; such needs are very few in number.***

*Maslow's Hierarchy of Needs*

- ***Basically a stage theory.***
- ***The needs at one level have to be met in order for one to move on to higher order.***
- ***The needs at the lowest/primary/base level are the physiological needs, whereas the highest order needs are the self-actualization needs.***

*Self-Actualization:* ***Most advanced human need based on the desire to grow and utilize one's potential up to the optimal level.***




© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Categories of Needs*

| Meta-needs | Deficiency needs |
|---|---|
| Based on a desire to grow rather than for meeting a deficiency: expressed in the need for self actualization | The absence of the underlying requirements triggers these needs e.g. physiological needs, love needs, or esteem needs |

*Interactions and needs of Behavior*

- *Physiological needs:* ***Fulfilled through = hunger/food: Pathology associated = Over-eating, Anorexia.***
- *Safety needs:* ***Fulfilled through = profession, job; Pathology associated = Phobias.***
- *Love and belongingness:* ***Fulfilled through = Marriage, Friendship: Pathology associated = Antisocial personality.***
- **Esteem needs:** Fulfilled through = Awards, Honors, Scholarships; Pathology associated = Depression.
- **Self-actualization needs:** Fulfilled through = Painting, writing, singing: Pathology associated = Isolation, Alienation, Cynicism.

*Criticism against Maslow's theory*

- Although a comprehensive and well formed theory, it has been criticized at some points
- Can we actually, for all case, distribute and neatly order these needs? There is little empirical evidence to support Maslow's way of ranking needs

*Extensions of Humanistic Approach*

- Existential Psychology (Jean Paul Sartre, Rollo May)
- Frankl's Logotherapy
- Positive Psychology (Martin Seligman)

**Cognitive Approach**

From the 1920s through the 1960s, behaviorism dominated psychology in the United States. Eventually, however, psychologists began to move away from strict behaviorism. Many became increasingly interested in cognition, a term used to describe all the mental processes involved in acquiring, storing, and using knowledge. Such processes include perception, memory, thinking, problem solving, imagining, and language. This shift in emphasis toward cognition had such a profound influence on psychology that it has often been called the cognitive revolution. The psychological study of cognition became known as cognitive psychology.

**Cognitive processes vs. computer**

One reason for psychologists' renewed interest in mental processes was the invention of the computer, which provided an intriguing metaphor for the human mind. The hardware of the computer was likened to the brain, and computer programs provided a step-by-step model of how information from the environment is put in, stored, and retrieved to produce a response. Based on the computer metaphor, psychologists began to formulate information-processing models of human thought and behavior.

The pioneering work of Swiss psychologist Jean Piaget also inspired psychologists to study cognition. During the 1920s, while administering intelligence tests in schools, Piaget became interested in how children think. He designed various tasks and interview questions to reveal how children of different ages reason about time, nature, numbers, causality, morality, and other concepts. Based on his many studies, Piaget theorized that from infancy to adolescence, children advance through a predictable series of cognitive stages.

The cognitive revolution also gained momentum from developments in the study of language. Behaviorist B. F. Skinner had claimed that language is acquired according to the laws of operant conditioning, in much the same way that rats learn to press a bar for food pellets. In 1959, however, American linguist Noam Chomsky charged that Skinner's account of language development was wrong. Chomsky noted that children all over the world start to speak at roughly the same age and proceed through roughly the same stages without being explicitly taught or rewarded for the effort. According to Chomsky, the human capacity for learning language is innate. He theorized that the human brain is "hardwired" for language as a product of evolution. By pointing to the primary importance of biological dispositions in the development of language, Chomsky's theory dealt a serious blow to the behaviorist assumption that all human behaviors are formed and maintained by reinforcement.

***Cognition means "the known", "knowledge", or "the process of knowing"***

***Cognitive approach emphasizes on:***

- Thoughts
- Feelings
- Thinking
- Values
- Expectations etc; factors that determine the personality of the individual

*Main Emphasis*

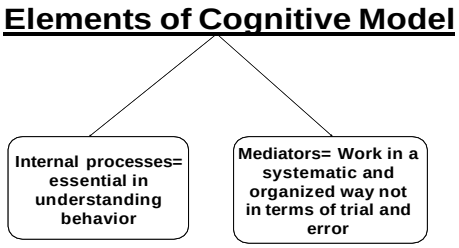
- ***For a proper understanding of behavior, the cognitive approach emphasizes the role of mediating processes in human behavior i.e., the processes that lie between the Environmental stimuli and the behavioral response***
- ***Focused on how we 'remember', how information processing takes place, how decision making appraisals are done***
- ***Unlike the behavioristic approach, this theory gives same importance to both the internal state of the person as well as the environmental events***
- ***Internal events are referred as "Mediators" or "Meditational Processes"***

*Areas of Special Interest*

***Cognitive approach mainly focuses on:***

- Emotions
- Social behavior
- Behavior modification

***Cognitive approach includes the elements of psychology, linguistics, computer science and physiology-- thus called a 'hybrid science'.***




***Experiments on apes by German scientist** Wolfgang Kohler**, discovered the use of insight by them in problem situations.***

- **Tolman talked about the 'cognitive maps' (relationship between stimulus) __it is not necessary to have an association between stimulus and response, a person can learn without showing any apparent response**
- **Both Kohler and Tolman played a vital role in laying the foundation of cognitive approach**

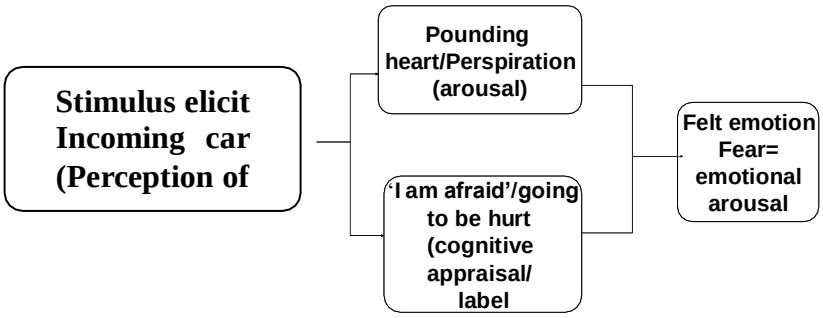
© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

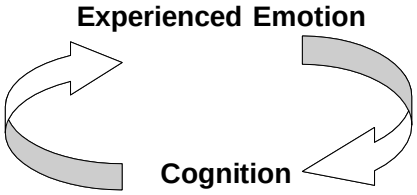
*Emotions and Cognitive Approach*

- ***Pioneer: Stanley Schacter (1971)***
- ***According to him, emotions result from the physiological arousal as well as the cognitive appraisal (evaluation) of the situation***
- ***Arousal comes first and is general in nature***
- ***In order to understand what one is feeling i.e., the title/label of the emotion, and the meaning of one's reaction in a particular setting the arousal is appraised cognitively***

*Schacter's Theory of Emotions*




Richard Lazarus (1984) maintains that emotional experience cannot be understood unless we understand how what goes on in the environment is be evaluated. Emotion leads to cognition and cognition in turn leads to emotional experience.




## Cognitive Approach to Social Behavior

***John Dollard and Neal Miller (1950) first ever emphasized the importance of cognitive processes in determining behavior***

**Kelly's Personal Construct Theory**

- ***Developed by George Kelly (1955.)***
- ***Emphasis on how a person cognitively constructs his world***
- Persons develop their behavior cognitively towards their world and develop attitudes and opinions accordingly known as' personal constructs'.
- The constructs then develop into a 'belief system' of a person.

**Mischel's Cognitive Social personality Theory**

- Walter Mischel was a student of George Kelly.
- According to him, how a person responds to the environmental stimulus depends on the following variables:

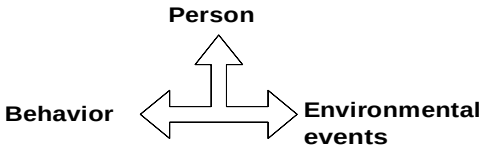
i. **Competencies**
   - What the person knows
   - What the person can do
   - How well the person generate the cognitive/ behavioral outcome

ii. **Encoding Strategies:** Ways of processing information

iii. **Expectations:** Anticipating the likely outcome (mainly positive)

iv. **Personal Values:** Importance of one's belief, also stimulus, people, events etc

v. **Self regulatory system:** maintaining rules for better performance
   - Setting goals
   - Evaluating performances




*Bandura's Cognitive-Social Learning Theory*

- ***Given by Albert Bandura (1986).***
- ***By combining the rules of learning, it emphasizes the complex human interactions in social settings.***

*Observational Learning*

- ***Main component of social-learning theory in which the person makes changes in his own behavior by watching/or imitating others i.e., a model/ a super star/favorite personality or cartoon character.***
- ***Effective in acquiring skills, attitudes, beliefs simply by watching others.***

*Cantor's Social Intelligence Theory*

- ***Given by Nancy Cantor and her colleagues (1987).***
- ***Refers to the expertise, which a person uses in different life situations/ tasks.***
- ***The theory explains several types of individual differences.***

i. ***Choice of Life Goal:*** Giving priority/ importance to the most important goal at a particular point of life. i.e., student -- 'Good grades'

***ii. Use of 'knowledge' in social interactions***

Use of life experiences and expertise in problem solving.

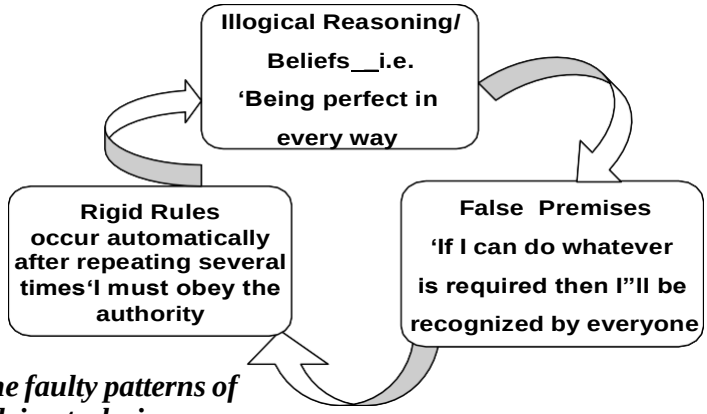
*Cognitive Approach in Behavior Modification*

- ***Negative and unacceptable behavior is modified through constructive strategies.***
- ***According to this approach, person's beliefs and attitudes effect the motivation and behavior of a person***
- ***In order to modify the behavior, reinforcement techniques are used.***
- ***For attaining the desired goal, realistic strategies are used with continuous feedback.***

*Altering the Belief System*

- ***Psychologists are of the view that psychological problems arise due to the way people perceive themselves in relation with the people they interact with.***
- ***Main focus of the therapist is to alter the irrational belief system of a person.***

*Cause of Psychological Illness*




*Cognitive Theory for Depression*

- ***Aaron Beck formulated the therapy for depression patients.***
- ***Therapist helps the depressive person to change the faulty patterns of thinking through problem- solving techniques***
- ***Believed that depression reoccurs in depressive patients because the negative thoughts occur automatically of which they are not aware.***

**The therapist uses four tactics**

- Challenging the patient's ill beliefs
- Evaluating the cause of depression
- Attributing the cause to the environmental situation/ event not to the person's in competencies
- Finding the alternative and effective solutions for the complex problems

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Rational-Emotive Behavior Therapy*

- ***Developed by Albert Ellis (1962, 1977).***
- ***Focused on altering the irrational beliefs into more acceptable ways.***
- ***Clients are forbidden to use "should", "must"," ought" etc.***
- ***Confrontation techniques are used which focus on changing the attitudes through rational reasoning.***
- Task is to protect the self worth, potential to be self-actualized, by blocking the irrational thinking patterns.

**In short,** in the last few decades, researchers have made significant breakthroughs in understanding the brain, nervous system, mental processes such as the nature of consciousness, memory distortions, competence and rationality, genetic influences on behavior, infancy, the nature of intelligence, human motivation, prejudice and discrimination, the benefits of psychotherapy, and the psychological influences on the immune system.

**LESSON 8**

# RESEARCH METHODS IN PSYCHOLOGY (I)

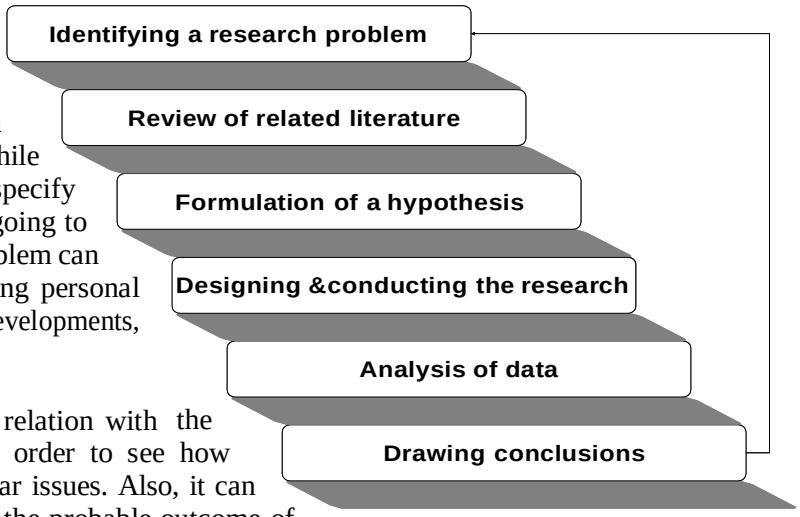
*Scientific method in psychology*

***The scientific method is an approach that practitioners of psychology are interested in for assessing, measuring, and predicting behavior. It is the process of appropriately framing and properly answering questions. It is used by psychologists and those engaged in other scientific disciplines, to come to an understanding about the world.***

*Scientific Nature of Psychology*

- Psychology is a science
- **Science:** An approach using the scientific method for the observation, description, understanding, and prediction of any phenomenon.
- **Scientific method:** The procedure employing a systematic, pre defined, series of steps for attaining optimal efficiency, accuracy, and objectivity in investigating the problem of interest
- **Systematic:** it follows a specified system, an organized ways of collecting and tabulating information.
- **Pre defined series of steps:** certain steps following a specific sequence that is not to be altered; disruption of the sequence will ruin the essence of the approach
- **Objectivity:** It is unbiased; the researcher's likes and dislikes do not interfere with the study or its findings

*Steps of Scientific Method*




**1. Identifying the research problem**

The most important step while conducting research is identify and specify the area of interest in which one is going to conduct a research. The research problem can be identified in many ways, including personal interest, brainstorming, scientific developments, knowledge etc.

**2. Review of the related literature**

Searching the research findings in relation with the research one is going to conduct, in order to see how others approached the same or similar issues. Also, it can give some idea as to what would be the probable outcome of one's research.

**3. Formulation of hypotheses**

A hypothesis is a speculative statement about the relationship between two or more variables. By reviewing the related literature, one is able to formulate the hypotheses pertaining to the variables of interest. Reviewing the related research articles helps one formulate various hypotheses.

**4. Designing and conducting the research**

After reviewing the related literature and making hypotheses, the research is conducted by using different strategies such as Questionnaires, mail interviews, telephonic interviews, face to face interviews etc. A variety of research designs is available to the researchers, who can choose the one that best suits their study.

**5. Analysis of data**

After collecting information, the data will be tabulated with the help of statistical methods and computation in order to see whether the finding prove or disprove the hypotheses.

**6. Drawing conclusions**

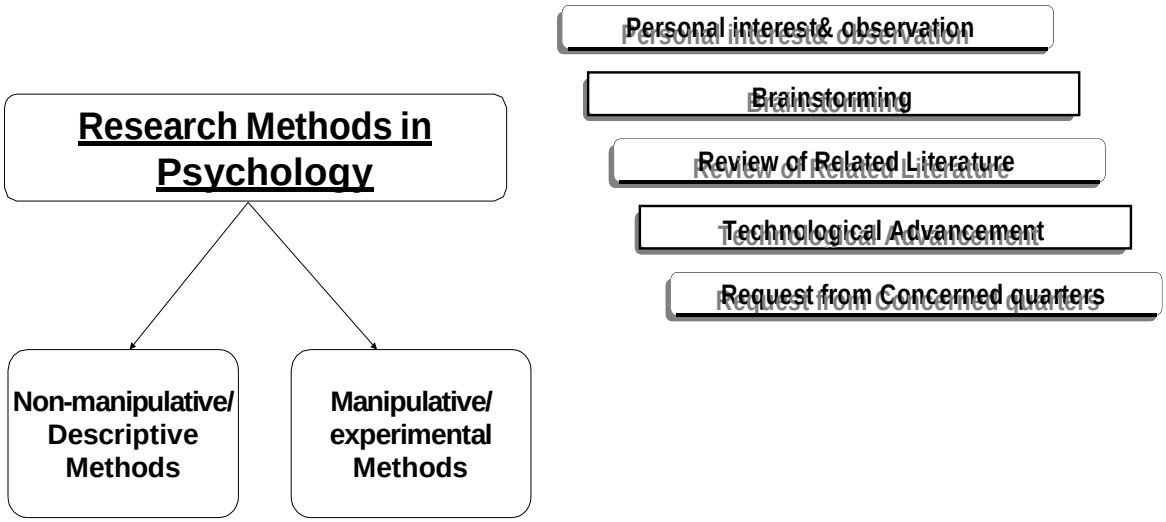
Conclusions are drawn after the statistical analysis of data. On the basis of this, a decision is made about the rejection or acceptance of the hypothesis.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Identifying a Research Problem*

**Research problems can be identified in a number of ways:**



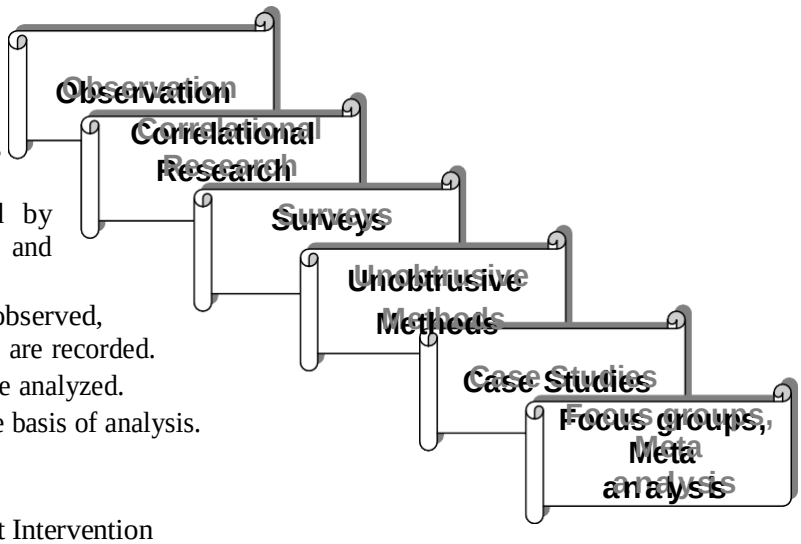

*Non-manipulative/descriptive Methods*

The methods in which the phenomenon of interest is studied the way it exists in nature. The researcher does not interfere with the events, and acts as a passive recorder.

*Manipulative/Experimental Methods*

The methods that is responsible for the scientific nature of psychology. In these methods the researcher exercises control over the variables and events. He may introduce variables of interest, or may withhold them. These methods are used for determining cause and effect relationships.

*Descriptive Research Methods*




*a) Observation*

- Systematic observation is used; one of the methods most frequently employed by anthropologists, sociologists and ethnologists.
- Phenomenon of interest is observed, studied, and the observations are recorded.
- The recorded observations are analyzed.
- Conclusions are drawn on the basis of analysis.

*Types of observation*

1. Observation without Intervention
2. Observation with Intervention

*Observation without Intervention*

**1. Naturalistic Observation**

Type of observation in which the phenomenon of interest is studied/observed in the natural setting without any interference by the observer; The observer may make narrative records, take field notes, use audio or video equipment, or may use a combination of some or all strategies.

*Observation with Intervention*

The observer intervenes, and manipulates the situation, events and/or variables in order to:

- Create a situation which does not occur frequently
- Test the impact of variables on behavior
- Gain access to a situation that is otherwise not accessible or open to observation

*Types of "Observation with Intervention"*

1. Participant Observation
2. Structured Observation
3. Field experiments

1. **Participant Observation**
   The observer becomes a part of the situation and plays an active and significant role in the situation, event, or context under study. It can be of two types:
   - Disguised Participant Observation
   - Undisguised Participant Observation

2. **Structured Observation**
   - Employed when the researcher intends to study a situation, which occurs infrequently or is inaccessible otherwise.
   - The observer may "create" a situation or initiate it.
   - The control exercised by the observer is less than that in many other techniques.
   - Mostly employed by clinical and developmental psychologists.

3. **Field Experiments**
   - Experiments in the natural setting; the degree of control is far less than that in laboratory experiments.
   - One or more independent variables are manipulated in the natural setting in order to see their impact on behavior.
   - **Confederate:** the researcher is assisted by one or more confederates who behave in a pre-planned manner so as to initiate an experimental condition.

*b) Correlation Research*

**A method used for identifying predictive relationships among naturally occurring variables**

*Correlation*

**Can be said to exist when two different measures of the same individuals, objects, or events vary together e.g. Relationship between** I.Q. score & academic achievement **or** entry test marks & academic achievement. **Correlation is a statistical concept.**

*Nature of Correlation*

- Positive Correlation
- Negative Correlation
- Zero Correlation

*Measures in Correlation Research*

**Questionnaires:** can be used in- person, can be mailed, or used via Internet.
**Interviews**: can be personal and face-to-face, or telephonic.
**Official Record**: Official statistics, raw data, crime records etc.
**Remember**!!! Correlation is not causation

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*C. Surveys*

***Most frequently used method for obtaining information quickly and evaluating people's interest, liking, disliking and opinions without indulging in long- term procedures and techniques. It is also easily used because it is a cheap method and information is gathered without much difficulty.***

- Surveys consist of presenting a series of questions or statements to the participants, and asking them to respond.
- Surveys are used when quick information is required in limited time e.g. opinion polls, product preference.
- Also useful when information is required from a large number of people e.g. population census
- More suitable when the goal of the study is to find out about public opinion, attitudes, preferences, likes and dislikes etc

*Sources of data/information in Surveys*

- **Questionnaires:** in person, mailed, internet
- **Interviews:** personal, telephonic
- **Newspaper Surveys**

**Steps involve in conducting the research:** There are mainly five steps, which are essential while conducting surveys i.e.,

i. **Conceiving the problem:** The purpose of the study must be carefully thought out and precisely defined. How is the information to be used? From whom it is obtained? What kind of information to be gathered etc.

ii. **Designing the instrument:** There are numerous ways by which information can be gathered form the general public such as mailed questionnaires, telephonic interviews, through internet etc. It must be carefully thought that which procedure is most effective in obtaining the needed information.

iii. **Sampling the population:** The problem of obtaining a representative sample of the population is one of the most difficult as well as significant in the field of measuring popular reactions. The sample to be studied must be drawn in such a manner the each individual has an equal chance of being selected, and that the drawing of one does not influence the chances of any other being drawn. With this procedure, each age, sex, income, religious and ethnic group in the population will be proportionately represented in the sample. Off course there are a number of ways of properly drawing a sample.

iv. **Conducting interviews:** Even when the questions are carefully worded and carefully designed, a poor interviewer can bias the results. Experiments have shown that females are the best interviewers: at least 21 years of age, who like people, who are unbiased, who are good listeners, who have some college education, and who are fairly familiar with the section they are working in.

v. **Interpreting the results:** Even when all the findings are carried out properly, there is always a chance of misinterpreting the results. Errors in questionnaires, statistical methods, and investigator's own subjectivity can easily bias the results

*d. Unobtrusive Measures of Behavior*

- Indirect ways of data collection
- The person/s who are the focus of interest may not be present at the time of investigation
- May be used for supplementing information collected through observation
- May be used as a replacement of observation
- In situations where direct observation is not possible

***Unobtrusive measures of behavior include:***

i. Archival data
ii. Physical Traces

**i. Archival data**

Already existing records, documents, different forms of literature, newspaper items, photographs, movies, documentaries, biographies, autobiographies etc are used as evidence/ information e.g. using newspaper records to study the rate of crime during the past 20 years. May be used to supplement data gathered through other sources

**ii. Physical Traces**

Remains, remnants, fragments, objects and products of past behavior are used as evidence; usually employed to supplement data from other sources.

**Physical traces can be of two types**

i. Use traces
ii. Products

*Use traces*

Cues to the use or nonuse of objects and items provide significant evidence e.g. wall chalking, graffiti on walls of public places, milk cartons or tissue boxes in the garbage bags

*Products*

Study of products, tools, weapons, sculpture etc used less frequently than physical traces

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**LESSON 9**

## RESEARCH METHODS IN PSYCHOLOGY (II)

*e. Content Analysis*

- Part of archival research: An approach for systematically categorizing and analyzing the content of the behavior or its related aspects/ variables being studied.
- The analysis may cover contents of live human behavior, books, journals, magazines, poetry, drama, movies, folktales, TV programs, school textbooks and curricula, advertisements etc.
- Inferences are made and conclusions are drawn after objective identification of specific characteristics of contents.
- Content analysis is done keeping specific goals, objectives, themes and constructs in mind.
- Example: Content analysis of textbooks with reference to gender equity and equality; analysis of TV programs with reference to portrayal of women.

*f. Focus Groups*

- A variety of interviews conducted in a group setting.
- The researcher talks to the participants in order to learn about their opinions, attitudes, preferences, likes/dislikes and tries to find out their reasons/cause.
- Used as a source of data collection in surveys but also used otherwise as well.

*g. Meta Analysis*

- A statistics based method
- A way of reviewing existing research literature in the same field, about the same phenomena
- The analysis covers the results of several independent experiments within the same field
- Computer aided statistical analysis yields overall conclusions

*Experimental Research*

- Experimental method: the use of experimentation for studying a phenomenon.
- Experimental design: the plan/structure/lay out of an experiment.
- Experiment: the variable of interest (independent variable) is manipulated/ altered and the effect of this manipulation is studied.

*Why experiments are conducted?*

- For testing hypotheses
- To test the impact of a treatment or a program on behavior
- The main feature of experimentation is CONTROL; keeping all those variables and conditions under control, that can have an impact on the findings of the study i.e., variables that can interfere with the impact of the independent variable.

*Variables*

i. Independent Variable
ii. Dependent Variable
iii. Control Variable

**Independent Variable (IV):** The variable whose impact is being studied; that is manipulated…in terms of kind or level

**Dependent Variable (DV):** The measure of behavior on which the impact of independent variable is being studied

**Control variable (CV):** A potential independent variable that can have an impact upon dependent variable; it has to be controlled

*Groups in a Typical Experiment*

i. Experimental Group: This is treated with the independent variable.
ii. Control Group; the no-treatment group that is kept under controlled conditions.

**Classical Experiment Design**

**Standard format:**

| | |
|---|---|
| **Ex. group measured on DV** | **Ex. group treated by IV & then measured on DV** |
| **Cont. group measured on DV** | **Control. group measured on DV** |

**Example of impact of music on stress:**

| | |
|---|---|
| **Ex. group measured on Stress level(DV)** | **Ex. group treated by soft music (IV) & then measured on DV** |
| **Cont. group measured on Stress level (DV)** | **Control. group measured on DV** |

*Experimental Designs*

i. Within- Subjects Design
ii. Between- Subjects Design

*Within Subject Design*

The experimental design in which the subjects' performance is compared with their own performance i.e., only one group of subjects is used.

**Before-After No Control Group Design:**

| | | | |
|---|---|---|---|
| A: DV | B: IV | A: IV | B: DV |

*Varieties of Before-after no control group designs:*

***ABABA and ABABABBA designs***

| | | | | |
|---|---|---|---|---|
| A: DV | B: IV | A: DV | B: IV | A: DV |

*Between Subjects Experimental Design*

The experimental design in which two or more groups of subjects are used and their performance is compared with each other:

i. Classical Experimental Design
ii. After- Only Experimental Design

| | | |
|---|---|---|
| B: IV | B: IV | A: DV |

*Problems associated with experimental research:*

- ***Artificiality of behavior is a possibility***
- Subjects may be under stress or pressure
- Time consuming and expensive
- Ethical issues: can we tell all about the nature of experiment to the subjects???

BUT…the very element of control gives edge to this approach, as this is what makes psychology a science.

*Applied Research: Quasi Experimentation*

- Kind of research that fits into the experimental framework, although it is not planned, initiated or controlled by the experimenter: it is "sort of experimentation".

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- It is the experimentation in which the independent variable occurs, or has occurred, naturally and the researcher studies its impact the way it is done in a laboratory experiment

*Groups in a Quasi- Experiment*

i. Exposure Group
ii. Comparison Group

*Quasi- experimental Design*

i. **Retrospective/Ex Post Facto Design:** Ex post facto means "after the fact". There are two groups, the exposure group and the comparison group. The process of "constructing" comparable exposure and comparison groups is called "matching". The subjects are already naturally divided like that. However, the experimenter selects the relevant subjects according to the nature of the research.

ii. **Prospective Design:** This design is similar to the retrospective design, except that in a prospective design, variations in the independent variable are measured as they occur, rather than retrospectively. Researchers are equally careful in interpreting the prospective and retrospective quasi- experiments. In neither case, the subjects are randomly assigned to the exposure and the control groups. Generally, prospective designs are more persuasive than retrospective designs, especially when the independent variable occurred long ago
iii. **Time series Design:** This design is mainly concerned with observing whether the values of the dependent variable change in apparent response to changes in an independent variable.

*Examples of Quasi Experimentation*

**i. Twin Studies**

Twin studies investigate different aspects of behavior and mental processes of twins, whether identical or fraternal. The studies on identical twins reared apart have generated very significant results. They have shown amazing similarities as well as differences among such twins.

**ii. Adoption Studies**

Most people have one set of parents. However 1% of the infants born in western countries every year are adopted at or near by persons unrelated to them. Such children have two sets of parents: parents who rear them and those who give them their genes. Social scientists have used this to help determine, with fascinating results, how much influence genetic factors and family environment have over behavior. Like twin studies, adoption studies suggested that many human behaviors are genetically influenced. That is why the nature- nurture issue is always remaining controversial.

*Applied Research: Single- Case Research Designs*

- A type of research in which a single case is focused upon and studied.
- This approach is employed in rarely occurring cases.

**LESSON 10**

## PHYSICAL DEVELOPMENT AND NATURE NURTURE ISSUE

**Development**

*"The process of growth and differentiation"*

***Development refers to the progressive changes in size, shape, and function during the life of an organism by which its genetic potentials (genotype) are translated into functioning mature systems (phenotype). Most modern philosophical outlooks would consider that development of some kind or other characterizes all things, in both the physical and biological worlds.***

*Developmental Psychology*

**The branch of psychology that studies how growth and physiological/ psychological/ social changes take place over the life span**

Also called Life-span Psychology, it is concerned with the changes in cognitive, motivational, psycho-physiological, and social functioning that occur throughout the human life span. During the 19th and early 20th centuries, developmental psychologists were concerned primarily with child psychology.

*Human Development*

- Biological sense: progressive change in size, shape, and function, of the body during the life span; the genetic potentials are translated into functioning adult systems
- Psychological sense: the ways by which physical, cognitive and psychosocial characteristics change over life span; such development is complex, systematic, and age- related
- Developmental changes can be quantitative and easy to measure such as height and weight and the expansion of vocabulary
- Developmental changes can be qualitative i.e., changes in kinds that are more complex and involve "leaps" in functioning. these distinguish a crawling baby from a walking child, a non-verbal child from a talking child, self- absorbed adolescent from a mature adult

Psychological changes include the growth of:

- Learning
- Cognition
- Intelligence
- Emotional maturity
- Creativity
- Sociability
- Morality…and much more

These small leaps are based upon small series of steps that we continue to take throughout our life span

*Issues of Interest to Developmental Psychologists*

**Is development continuous or discontinuous?**

Some psychologists believed that human functioning does not undergo fundamental changes but instead changes gradually in its efficiency and working capacity; initially a child spoke a few words but gradually these words become longer and more complicated, increasing the child's ability to remember and use them in sentences.

Other psychologists maintain that changes in development reflect psychological processes that mediate human functioning. These are qualitatively unique stages, in which the evolution of one stage may depend on the traits of the preceding stages. e.g. Roger Brown, psychologist, maintains that in the process of language acquisition, a child progresses systematically in five steps or stages. Each stage has its own set of rules and skills from which a higher level of language acquisition takes place.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

Jean Piaget maintained that cognitive development occurs in a series of steps in which the child acquires and uses unique sets of cognitive processes that allow the child to think in identifiable ways.

**Is development general or specific?**

- Many aspects of functioning show simultaneous changes; a co-occurrence of change in different situations.
- Changes occur in specific areas of functioning that do not occur in other level of functioning.
- Development may remain isolated in specific domains.e.g. Video game mastery in young boys

**Is development stable or changing?**

In some respects development is stable and stays there for very long, whereas in some ways it keeps moving.

**Temporal aspect:** degree of stability or change across the lifespan

**Situational aspect:** degree of stability or change across a wide variety of experiences.e.g. Aggressive behavior in children

**Humans active or passive beings?**

Psychologists maintain that humans are active recipients as well as participants in their course of development. Man seeks to understand the strategies that he can adopt in order to influence development Jean Piaget emphasized the active participation of the child in acquiring cognitive skills__ acquisition of knowledge and ability to use it effectively.

Some philosophers believed that humans are passive beings whose development is entirely dependent on the environmental stimuli/ forces. These conditions may be internal i.e. food, water, companionship etc or external i.e. previously experienced reward or punishment

These psychologists tend to view differences in the patterns of development in which an individual is exposed to different environmental situations

*Nature versus Nurture*

- Nature means hereditary influences.
- Nurture refers to environmental influences, in child development.
- Once, it was assumed that these were significant forces that operated independently of each other.
- In the 17th century the French philosopher René Descartes set out views which held that people possess certain inborn ideas that are long lasting and color people's approach to the world.
- The British philosophers Thomas Hobbes and John Locke, on the other hand, took a more empirical approach and emphasized the role of experience as fully contributing to behavioral development.
- Since the days of Descates, Hobbes, and Locke, the empirical "nature" approach has led to a lot of debate; many followers and many opponents.
- Mid to late 1800's, through to the early 1900's the nature approach was the sole standpoint; consistent with the scientific discoveries of the role of inheritance and natural selection by Mendel and Darwin
- The psychological argument developed later; Francis Galton "Hereditary Genius" (1869); "gifted individuals" tended to come from families, which had other gifted individuals. He went on to analyze biographical dictionaries and encyclopedias, and became convinced that talent in science, professions, and the arts, ran in families.
- Galton went even further arguing that it would be "quite practicable to produce a high gifted race of men by judicious marriages during several consecutive generations".
- Eugenics: "the study of the agencies under social control that may improve or repair the racial qualities of future generations, either physically or mentally."

*For Galton*

- "What Nature does blindly, slowly, and ruthlessly, man may do providently, quickly, and kindly"
- "Intelligence must be bred, not trained".

- Such arguments have had massive social consequences and have been used to support apartheid policies, sterilization programs, and other acts of withholding basic human rights from minority groups

The later scientists, especially the behaviorists contested such an approach and advocated the role and significance of environmental influences

*Prevalent Approach*

- Both influences are essential and are mutually influential. The role of interaction between heredity and environment together is important. e.g., how a child responds to parenting—an environmental influence—is partly determined by the child's temperament and other inherited characteristics.
- The environment influences how hereditary characteristics develop and are expressed e.g. increase in average height during the last century because of improved nutrition and medical care.
- Even though many features of personality are based on inherited temperament, the family environment is an important influence on a child's personality development.
- A child with a difficult or unpredictable temperament can develop positively in a warm and loving family environment.
- Intelligence is an inherited feature but the way it is utilized largely depends on the environmental conditions.

*Characteristics with Strong Genetic Components*

- Physical Characteristics
- Intellectual Characteristics
- Emotional Characteristics and Disorders

*Physical Characteristics*

- Height
- Weight
- Obesity
- Tone of voice
- Blood Pressure
- Tooth decay
- Athletic ability
- Firmness of hand shake
- Age of death
- Activity level

*Intellectual Characteristics*

- Memory
- Ability as measured on intelligence test
- Age of language acquisition
- Reading disability
- Mental retardation

*Emotional Characteristics and Disorders*

- Shyness
- Extraversion
- Emotionality
- Neuroticism
- Schizophrenia

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- Anxiety
- Alcoholism

*Prenatal Environmental Influences*

- Mother's nutrition and emotional state
- Illness of mother
- Mother's use of drugs
- Birth complications

*Studies to Determine the Relative Importance of Nature or Nurture*

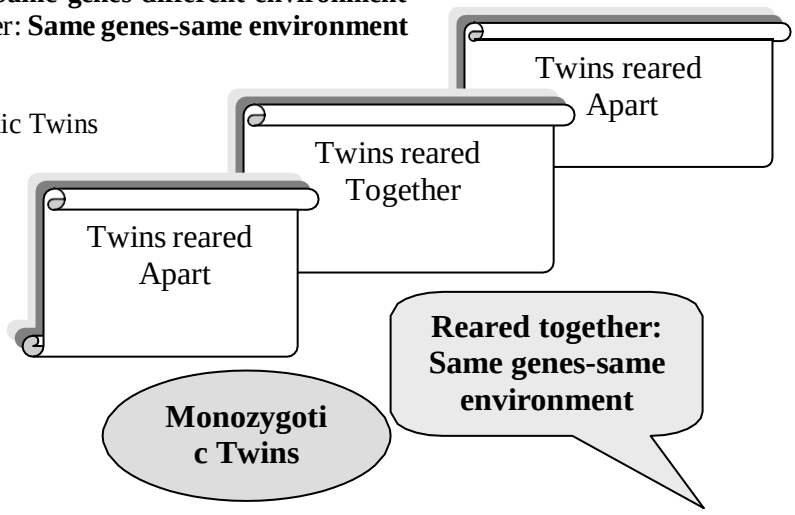
**i. Twin Studies**

- Studies making use of twins, identical or fraternal…reared apart and reared together
- The case of Gerald Levey and Mark Newman, twins reared apart, who had not seen each other before: When method, both were bald, 6 and a half feet tall, volunteer fire fighters, 250 pounds in weight, had droopy moustaches, wearing key rings on right side of their belts, liked to wear aviator style dark glasses; both had interest in similar subjects, had jobs in the supermarket, and liked tall, slender women with long hair; had similar hobbies, liked Chinese food and same drinks; showed similar mannerism, laugh similarly, and loved to fight fire

*Twin Studies with Monozygotic Twins*

**i.** Twins reared apart: **Same genes-different environment**
**ii.** Twins reared together: **Same genes-same environment**

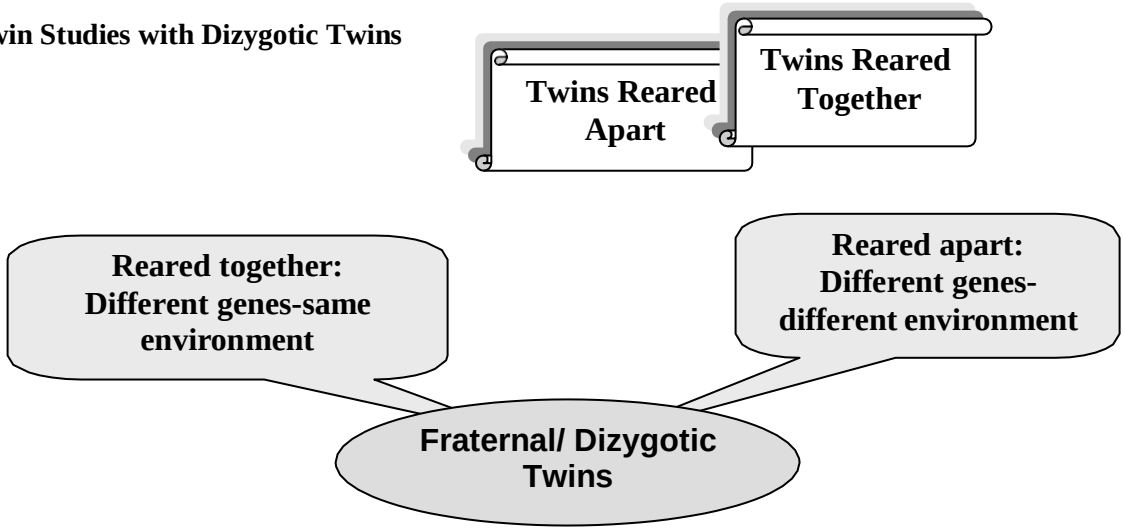
Twin Studies with Monozygotic Twins




*Twin Studies with Dizygotic Twins*

**a.** Twins reared apart: **Different genes-different environment**
**b.** Twins reared together: **Different genes-same environment**

**Twin Studies with Dizygotic Twins**



**i. Adoption Studies**

Children with different sets of genes, brought up by same parents…in same environment.

**ii. Consanguinity Studies**

Study of as many blood relatives as possible of a particular family; these study the extent to which certain features/ characteristics are shared.

**iii. Selective Breeding of Traits in Animals**

Certain characteristics are cultivated in animals (running in a maze, aggression, obesity etc) and if it is transmitted on to the next generation then that trait is partly inherited. These findings are then generalized to humans…. although its validity is doubtful

*Research on Nature- Nurture, Focusing on Environmental Issues*

- Research looking for possible environmental causes for certain traits/ behaviors
- These include prenatal studies, and studies involving manipulation of the environmental factors e.g. nutrition, exercise, drugs, pollution etc
- These involve comparing actual history: surveys etc.
-

*Limitations of Nature-Nurture Research*

- Ethical considerations in research with humans
- Not all animal research can be applied to humans

***The best solution probably is the ex-post facto/ retrospective studies***

**Heredity and Physical Development**

Researchers believe that although environment exerts an important influence on human development, physical traits are the ones more evidently influenced by heredity. Personality and intellectual characteristics are also affected by it

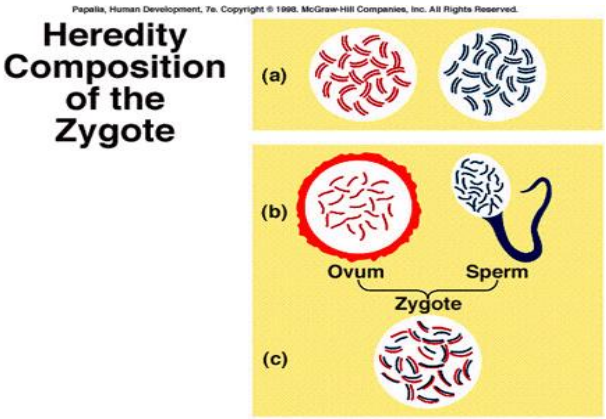
*Mechanism of Heredity: Transmission of Genetic Characteristics*

***The process begins from the moment of conception; a sperm from the father unites with the ovum/ egg of the mother to form <u>zygote</u>, a single-cell/one-celled product, containing the complete genetic package for the one to be born much later***

*The zygote contains 23 pairs of chromosomes*

*Chromosomes*

- Each sperm and ovum contains 23 chromosomes that are tiny rod- shaped particles containing genetic/ heredity information.
- Genetic/ heredity information is packed in the genes.
- ***Genes:*** parts of chromosome that are the transmitters of inheritance.
- Genes produce particular characteristics of the new being, either individually or in combination




**Genes may be dominant or recessive;** a dominant gene means that its characteristics will dominate those of the recessive one e.g. if father has brown eyes and mother has black eyes, and if the father's genes dominate then the baby will have brown eyes.

- Each zygote's 46 chromosomes contain about 30,000 segments strung along its


Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

beads i.e., "genes"

***Genes,*** made up of **Deoxyribonucleic Acid** ***(DNA,)*** determine all our heredity

*Prenatal Stages*

***EMBRYO:*** A developed zygote with a heart, a brain and other organs.
***Fetus:*** A developing child; 9 weeks after conception till birth.

*Determination of the Sex of the Embryo*

- A combination of chromosomes from the parents determines sex.
- An XX pair means a female will be born An XY pair means a male will be born.
- The mother's sex chromosome is always and 'X' but the father may be either 'X' or 'Y'. If X chromosome is being contributed by the father's side then the new being has to be a female; and if the father is contributing a 'Y' chromosome then the new being is going to be a male

*Genotype and Phenotype*

- ***Genotype:*** genetic composition of a person.
- ***Phenotype:*** observable characteristics.
- The characteristics that can be observed and seen, make up our "phenotype". They may not always be the same e.g. person may have brown eyes (phenotype) but carry genes for both brown and blue eyes (genotype) dominant gene is brown

*Alleles*

- This difference in color is due to the fact that genes come in alternative forms called "Alleles" (alternative forms of a gene). When alleles are identical, a person is homozygous for a trait; when alleles are dissimilar the person is heterozygous

*Patterns of Transmission of Characteristics*

**i. Homozygous and Heterozygous**

When the person inherits identical alleles he is said to be "homozygous" (possessing two identical alleles for a trait). When he inherits two different alleles then the person is "heterozygous" (possessing two different alleles for a trait).

**Example:** when a person is homozygous for brown eyes then he will transmit only genes for brown eyes to his offspring and if heterozygous for blue and brown eyes then although dominant one is brown, but he will transfer his both alleles to his offspring.

**a. Autosomal Dominant Inheritance**

- Patterns of inheritance in which a specific gene is dominant; if it is inherited; it manifests itself in the person.

**b. Autosomal Recessive Inheritance**

- Patterns of inheritance in which trait appears only if a person inherits two genes for it, one from each parent. If the person inherits only one gene for a trait, it will not appear in a person but may be passed on to his children.

**ii. Multi- Factorial Inheritance**

- Patterns of inheritance in which a trait is expressed either by a combination of several genes or through the interaction of genes with environmental factors.
- More complicated combination of genes or an interaction between genetic predispositions and environmental factors that bring them out.
- Some characteristics follows one of these patterns, other genes another.

© Copyright Virtual University of Pakistan

*Examples*

**Hair type** (curly or straight) is either autosomal dominant or autosomal recessive, baldness is sex-linked; height and weight are probably multi- factorial.
Some diseases and birth defect are inherited according to these patterns. Most prominent examples are:

**Achondroplasia:** a kind of dwarfism that is inherited by autosomal dominance.
**Tay- Sachs disease:** body's inability to break down fat; results into death by 3-4 years of age

**Huntington's disease**: 99.9% correlation between having the identified gene and the disease.

The blood- clotting disorder **hemophilia** is a sex- linked condition.
**Spina bifida:** a defect in the closure of the vertebral canal, that is believed to be the condition transmitted by sex- linked inheritance

**The process of development continues throughout the life span**

While considering aspects of development, individuality and interactions are the key terms in understanding it. All beings bring their unique genetic package into this world and have unique sets of experiences too.
An individual's strengths, abilities, and predispositions are affected by the influence of environment. These influences make a person act in ways that elicit new experiences

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**LESSON 11**

# COGNITIVE DEVELOPMENT

**Cognitive development is the process of the development of children understanding of the world as a function of age and experience.**

## Development of Cognition and Cognitive Ability

Cognition is the process of knowing as well as what is known. It includes "knowledge" which is innate/ inborn and present in the form of brain structures and functions. We 'remember' the physical environment in which we were brought up and develop perceptual constructs or knowledge accordingly (seeing, hearing, sounds etc

*Disciplines Interested in the Study and Use of Cognition*

**The interest in human cognition and its development has been developed and applied in a variety of scientific disciplines:**

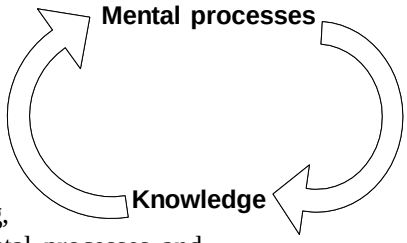
- **Anthropologists** focus on, and measure, how cognition develops in different cultures.
- **Sociologists** study how cognitions are acquired and used in various groups and institutional settings.
- **Computer scientists** target to create 'artificial intelligence'.

**Psychologists are interested in a better understanding of the human cognitive ability and potentials, how it is utilized in different situations and at different stages.**

*Nature of Cognition*

The very word cognitive refers to the process of knowing as well as the known. Cognition thus, has at least two main aspects/ features i.e.,

i. Cognition means 'mental processes' that people use to gather/ acquire knowledge, and
ii. Cognition refers to the knowledge that has been gathered/ acquired subsequently used in mental processes




*Cognition and Knowledge*

- There is probably no aspect of human life and behavior that is void of all sorts of cognition…not even sleep
- All human intellectual activities and potentials, i.e. thinking, communicating, problem solving, and learning require mental processes and knowledge

*Factors Influencing the Cognitive Development*

- Long term memory and information processing or working memory are traits of the human infant which exist and operate much earlier than when one is aware of it; these are intact even before birth but these contents of memory are unknown to consciousness.
- The ability to control 'mental processes' and 'innate/ inborn knowledge' develops after birth and this may occur largely due to the interaction of the child with the physical environment
- The child's interaction and bonding with the people around has a deep impact. Most often parents especially the mother, also including the caregivers/caretakers, are the most significant connections for the development of cognition.

*Significant Influences on Cognition*

**Socio- Cultural Factor**

- Given and debated in the early 1900s socio-cultural approach has now regained interest among cognitive scientists

- It states that cognitive ability does not start with the anatomy/ biology of the individual or only with the environment: the culture and society into which the individual is born provide the most important resources/ clues for human cognitive development.
- They provide the context into which the individual begins his experience of the world.
- Social groups help in person's cognitive development by placing value/ importance on learning certain skills, thereby providing all important motivation that the person needs and requires in order to learn and exhibit those skills or behaviors. This results in cognitive development
- One perspective about cognitive ability suggest that there is some sort of innate potential existing within an individual

Another suggests that there is potential within the socio- cultural context for development of the individual. The individual is born into a society of potential intellect. Knowledge will develop largely based on the evolution of intellect within the society and culture.

**Social Nature of Mind**

- Beside other psychological functions, the most important and influential is the interaction between individuals.
- In the beginning, the child has no means of understanding/ expressing or communicating his experiences. But as time passes, the teachings of parents and other family members enable a child to understand the world in which he lives. Knowledge is considered to be the experiences and the values that parents/ caregivers pass on to their off springs. It reflects their particular social and cultural norms and standards, which are incorporated in their understanding of their culture.

**Language and Cognitive Ability**

- The main and most important tool in acquiring cognitions in any culture is its language through which an organized body of knowledge is transmitted as "cognitive abilities". By learning the language, the child is able to share knowledge and experiences with the people he interacts with.
- Early learning takes place through internalizing and interpreting the world.
- Afterwards, the child is able to use those internalized skills such as language that have been taught to him by his parents, culture, or society. It further on helps him to think and function independently
- Language, including its written form, is the unifying tool for any culture. As language starts to develops, so do the social norms, cultural beliefs, and values

**Motivation, Cognition and Learning**

- It is believed that cognitive ability alone cannot account for achievement; motivation is also important in acquiring/ attaining cognitive skills and abilities.
- People learn information that corresponds to, and is in accordance with, their view of the world. They learn skills that are meaningful to them. e.g. children who are born in a poor family may not give any attention or importance to the formal education and as adults, they may pass on similar beliefs and attitudes to their off springs.
- Motivation determines whether or not one is capable of learning. Whether one learns well or not, depends on one's own view and that affects the ability to learn. The motivational condition largely depends on the way the culture responds to achievements and failures. There are culturally developed attitudes about the probability of learning successfully after one has initially failed to learn. These attitudes can greatly affect future learning.

**The Individual and the Group**

- These factors also influence the extent or direction of development.
- The culture of the individual, the community, the neighborhood, social organizations, and the family, all influence the experience of the individual. But these experiences have a certain uniqueness of their own and they may be perceived and viewed differently by different people.

*Cognitive Development*

- Cognitive development is the development of the 'thinking' and 'organizing systems' of the brain. It involves

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- Language,
- Mental imagery,
- Thinking,
- Reasoning,
- Problem solving and
- Memory development

*Jean Piaget's (1896-1980) Theory of Cognitive Development*

- Piaget was a Swiss psychologist. He was a very keen observer from the very beginning; got published his first research paper at age 15.
- As a result of his study of philosophy and logic, he became interested in epistemology i.e., knowledge and knowing; the interest in observation and epistemology made a foundation of his theory of cognitive development.
- Piaget was influenced by Henri Bergson's Creative Evolution, unlike most of the other psychologists who were impressed by Darwin's theory of evolution. Bergson believed in divine agency instead of chance as the force behind evolution: life possesses an inherent creative impulse.
- Piaget did his doctorate in Biological Science, but later became interested in psychology especially abnormal psychology.
- He secured a position in Alfred Binet's laboratory In Paris where he got a chance to observe children's performance, their right and wrong answers.
- Piaget's work and observation generated an interest in children's mental processes.
- The real shift took place when he started observing his own children from birth onwards. He kept records of their behavior and used them to trace the origins of children's thoughts to their behavior as babies; later on he became interested in the thought of adolescents as well

*Piagetian Method of Investigation*

- Known as the Clinical Approach; a form of a structured observation.
- Piaget used to present problems/tasks to children of different ages, asked them to explain their answers. Their explanations were further probed through carefully phrased question.

*Piaget's Theory of Cognitive Development*

- Cognitive Development takes place in stages.
- The organization of behavior is qualitatively different in different Stages. Children throughout the world pass through a series of four stages of cognitive development in a fixed order.

*Essential Points of Piaget's Theory*

1. The stages emerge in a sequence. There is a constant order of succession for their emergence.
2. The progressive development of mental structures can be explained by neither heredity nor environment by itself.

*Key Terms in Piaget's Theory*

According to Piaget, children's thinking develops through two simultaneous processes: assimilation and accommodation

- **Assimilation** means the incorporation of new knowledge into existing schemes.
- **Accommodation** means the modification of the child's existing schemes to incorporate new knowledge that does not fit in the scheme.
- **Schemes:** patterns of action that are involved in the acquisition and structuring of knowledge e.g. grasping, throwing, and rolling

*Piaget's Stages of Cognitive Development*

- Sensorimotor stage
- Preoperational stage
- Concrete operational stage
- Formal operational stage

**Sensorimotor stage**
**Age:** Infancy; Birth-2 years
**Major Characteristic:**

- Thought confined to action schemes.
- Development of object permanence.
- Development of motor skills.
- Little or no capacity for symbolic representation.

**Preoperational Stage**
**Age:** Preschool; 2-7 years
**Major characteristics:**

- Representational thought.
- Thought is intuitive not logical.
- Development of language and symbolic thinking takes place.
- Thinking is egocentric.

**Concrete Operational Stage**
**Age:** Childhood; 7-11 years
**Major Characteristics**

- Thought is systematic and logical, but only with regard to concrete objects.
- Development of conservation, and mastery of concept of reversibility.

**Formal Operational Stage**
**Age:** Adolescence and adulthood; 11 years onward
**Major Characteristics:**

- Abstract and logical thought develops.
- The person can deal with the abstract and the absent.

*Erik Erikson's Theory of Psychosocial Development*

- Student and follower of Sigmund Freud.
- Left his native land, Germany, in 1930's and immigrated to America, where he studied Native American traditions of human development, and continued his work as a psychoanalyst.
- Broke with his teacher over the fundamental view about what motivates/ drives human behavior. For Freud, it was 'biology' or more specifically the biological instincts of life and aggression (Eros and Thanatos). For Erikson, the most important force that drives human behavior and which helps in the development of personality was "social interaction".
- His developmental theory of the "Eight Stages of Man" (Erikson, 1950) was unique and different in the sense that it covered the entire lifespan rather than 'childhood' and 'adolescent development'.
- He believed that social environment combined with biological maturation results in a set of "crises" that must be resolved.
- The individual passes through the "sensitive period" and crisis at different stages, which has to be resolved successfully before a new crisis is presented. The results of the resolution, whether successful or not, are passed on to the next crisis and provide the foundation for its resolution

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Erikson's Psychosocial Developmental Stages*

*Basic Trust vs. Mistrust (Oral-Sensory Stage): Birth –18months: Infancy*

- The infant develops a sense of who and when to trust.
- He learns when to protect oneself and be cautious.

*Autonomy vs. Shame and Doubt: 18 months to 3 years: Early Childhood*

- The child develops a sense of independence and is able to understand and recognize his limitations. If independence is encouraged, he develops a sense of autonomy.
- If the child is overly restricted, over-protected, or criticized it may result into self-doubt and shame. Shame occurs when child is overly self-conscious when negatively exposed. Self-doubt occurs when parents overly shame the child, e.g. about elimination.

*Initiative vs. Guilt: 3 to 6 years: late Childhood*

- The child is able to tryout and explore various things.
- Indulges in various activities, both motor and intellectual.
- Guilt arises after doing the negative acts e.g. aggression.

*Industry vs. Inferiority: 6 to 11 years: School Age*

- Child is busy in
  - ***Building,***
  - ***Creating, and***
  - ***Accomplishing***
- Receives systematic instruction as well as fundamentals of technology.
- Learns norms and standards of the society in which he lives.
- Socially decisive age. The child gains self- esteem.

*Identity vs. Role confusion: Adolescence*

- The person has a coherent sense of self.
- ***Plans to actualize one's abilities or becomes confused when unable to accomplish task.***
- ***Problems may result in impulsive attitude or extended immaturity.***
- ***Indecisiveness may occur.***
- ***In extreme cases there can be a possibility of antisocial behavior.***

*Intimacy vs. Isolation: 18 to 25 years: Young adulthood (beginning in the early 20s and may extend to the 40s)*

Young adults focus on

- ***Maintaining one's individuality***
- ***Making friends***
- ***Relationships and intimacy***

*Adulthood Generativity vs. Stagnation: Middle adulthood (40-60 years)*

- Age of;
  - ***Creativity***
  - ***Productivity***
  - ***Concern about guiding and helping the next generation***
  - ***Concern for others or self-indulgence***
  - ***Impoverishment of self***

*Ego Integrity vs. despair: Old age*

- The person develops a sense of acceptance of life as it was lived.
- Importance of the people and relationships that individual developed over the lifespan.

- Comes to terms with approaching death.
- Some sort of despair is inevitable.

*Lawrence Kohlberg's theory of Moral development*

- A psychologist__ born in Bronxville New York.
- Served as a professor at Harvard University.
- Started as a developmental psychologist in the early 1970s and became famous for his later work in moral education and moral reasoning.
- His theory emphasizes on how moral reasoning develops in stages___similar with the theory of Piaget's cognitive development.
- Like Piaget, Kohlberg believed that development is flourished by social interaction.
- Moral education can be taught in formal education by confronting people with moral dilemmas that evoke/ arise cognitive conflicts.
- According to Kohlberg, discussion over these dilemmas promotes development, which further helps in higher stages of moral reasoning_ showing benefits of the higher stages of reasoning. He and others formulated dilemmas for this purpose.

*Kohlberg's Stages of Moral Development*

Moral reasoning, which Kohlberg thought is the basis for ethical behavior, has developmental stages. There are six identifiable stages of moral development. These stages can be classified into three levels.

*Stages of Moral Development*

**Level 1**

i. Obedience and Punishment Orientation
ii. Self- interest orientation

**Level 2**

i. Interpersonal accords
ii. Conformity (good boy/Good girl attitude)
iii. Authority
iv. Social order orientation (law and order morality)

**Level 3**

i. Social contract orientation
ii. Universal ethical principles (principled conscience)

Levels of Moral Development

a. Pre-Conventional

- Common in children, although adults can also exhibit this level of reasoning.
- Judging the morality of an action by its direct consequences.
- Pre-conventional level is divided into two stages:
  - *Stage One:* ***Obedience and punishment orientation***
  - *Stage two****: self-interest orientation***
- In stage one, individuals focus on the direct consequences that their actions will result into. They see and analyze as to what actions are morally wrong and, if the person commits them, gets punishment for it.
- In stage two, right behavior is what is defined as, 'what is in one's own best interest'. Limited or little interest is shown about other's needs.
- Concern for others is not based on loyalty or intrinsic respect.

b. Conventional

- Can easily be seen in adults and older children.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- Persons, who reason in a conventional way, judge the morality of actions by comparing these actions to social rules norms, standards, and expectations.
- The conventional level is divided into two further stages:
  - *Stage three:* ***conformity orientation***
  - *Stage four:* ***law-and-order morality***
- Individual, whose moral reasoning is in stage three, seeks approval from others. Tries to be a 'good boy' or 'good girl', having learned that there is inherent value in doing so.
- Judging the morality of an action by evaluating its consequences.
- In stage four, individual thinks that it is important to obey the laws and social conventions because it is important in maintaining society and thus does not require approval which is important in stage three.

c. Post-Conventional

- The post-conventional level is divided into two stages;
  - *Stage five:* ***social contract orientation***
  - *Stage six:* ***principled conscience***
- In stage five, people have certain principles or beliefs to which they may attach more value than laws e.g. human rights or social justice.
- In the sixth and final stage, moral reasoning is based on the use of 'abstract reasoning' using 'universal ethical principles'.
- Although Kohlberg insisted that sixth stage exists but he had difficulty finding people who used it. It appears that people rarely use it, if, ever they reach this sixth stage of Kohlberg's model

**LESSON 12**

## NERVOUS SYSTEM (1)

*Central Nervous System (CNS) and Peripheral Nervous System (PNS)*

The brain and its constituent parts are the most complex system ever known. With one trillion separate cells, each one in a continuous process of changing in response to chemical signals. From the moment of conception to the moment of death, the biology of the individual is changing. It is in this complexity that our species has found the capability to store the accumulated experience of thousands of generations – to create human culture. Our language, religions, governments, childrearing practices, technologies, economies are all man-made; yet all depend upon the remarkable capacity of the brain to make internal representations of the external world.

*Biological Bases of Behavior*

- The Nervous System
- Endocrine Glands

*The Nervous system*

- The system that controls and regulates the structure and function of the brain, spinal cord, nerves, and the nerve cells; it maintains coordination between the nervous system and the rest of the bodily systems.
- It is responsible for the internal communication system that ensures the integrated functioning of the various systems.

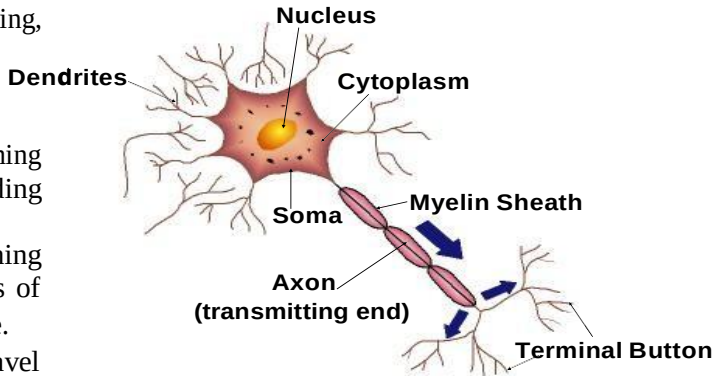
*Some Interesting Facts about the Nervous system*

- The nervous system consists of billions of highly specialized nerve cells called neurons.
- Nerve impulse is an electrical impulse that travels along the nerves at a speed of around 400km/ hour.
- Every second, a number of these impulses can pass along nerves.
- Brain cells never re grow; once destroyed or dead, they can not be replaced.
- Nerve fibers are very thin and fine in size; a hundred of them lying side by side would fit into just 1mm.
- The brain is divided into two visible parts or hemispheres; the left hemisphere controls the right side of the body, and the right controls the left side.
- The total surface area of the cerebral cortex is approximately 2.5sq.ft. if you spread it flat.

**The Nerve Cell**

*Neuron*

A nervous system cell is constituted in such a way that it is specialized in receiving, processing, and/or transmitting information to other cells.




**Structure of a Neuron**

- **Dendrites:** Receivers of incoming signals; branch fibers extending outward from the cell body.
- **Soma:** The cell body containing the cytoplasm and the nucleus of the cell; cytoplasm keeps it alive.
- **Axon:** The nerve impulses travel from the soma to the terminal buttons through the extended fiber of a neuron i.e., axon.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- **Terminal Buttons:** Swollen, bulblike structures at one end of the axon; the neuron stimulates the nearby glands, muscles, or other neurons

*Connection between nerve cells*

- **Synapse:** the gap between one neuron and the other.
- **Synaptic Transmission:** the procedure through which information is relayed from one neuron to another across the synaptic gap.
- **Neurotransmitters:** The post synaptic neuron is stimulated by the chemical messages released from neurons; they cross the synapse from one neuron to another.

*The Chemical Messages*

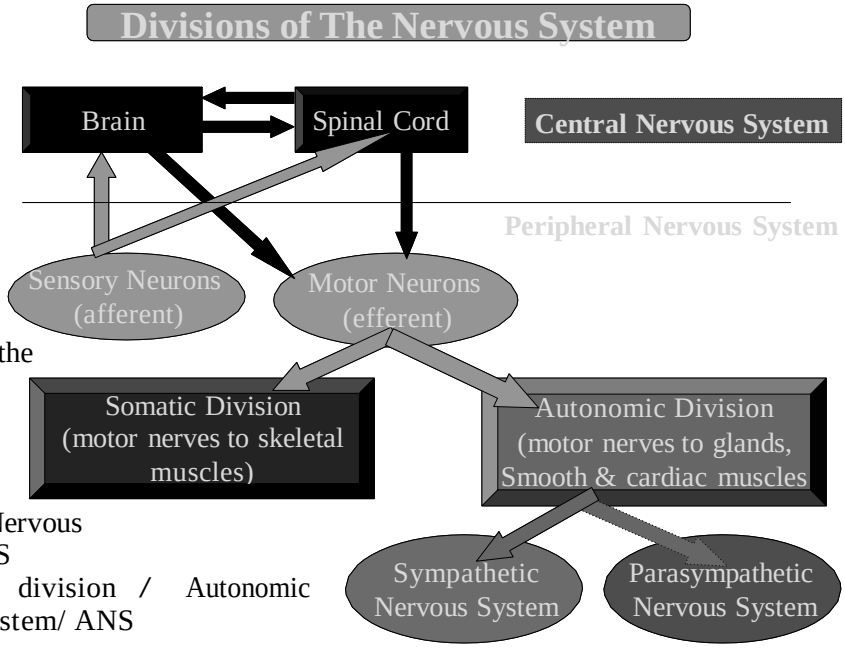
- The neurons follow an all-or-none law…. either a neuron will be firing or resting /off.
- **Excitatory Message:** The chemical message that makes it more likely that the receiving neuron will fire and the action potential will travel down its axon.
- **Inhibitory Message:** The chemical message that inhibits a receiving neuron from firing so that the action potential does not travel down its axon.

*Major Varieties of Neurons*

- **Sensory Neurons (afferent):** they carry messages toward the Central Nervous System from the sensory receptor cells.
- **Motor Neurons (efferent):** they carry messages away from the Central Nervous System toward the muscles and glands.
- **Inter-Neurons:** they relay messages from sensory neurons to other inter-neurons and/or to motor neurons.

*Main Parts of the Nervous System*

- The Peripheral Nervous System
- The Central Nervous System



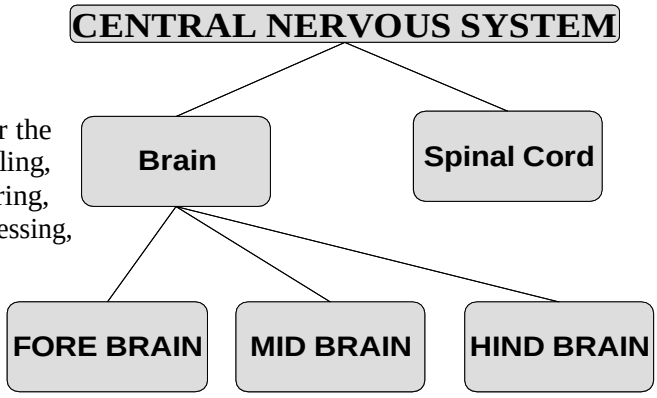

*The Peripheral Nervous System (PNS)*

- The part of the nervous system that includes all parts of the nervous system except the brain and the spinal cord
- Includes:
  i. Somatic Division / Somatic Nervous System/ SNS
  ii. Autonomic division / Autonomic Nervous System/ ANS

**Somatic Division:** controls the voluntary movements of the skeletal muscles.
**Autonomic division:** controls the involuntary movements all over the body; movements of the heart, lungs, stomach, glands and other organs.

*Central Nervous System (CNS)*

- Brain receives the information from all over the body (primarily in terms of stimulation via sensation), interprets it, and decides how to respond.
- The brain's function is similar to that of a computer; there is a central processing unit (CPU), the output comes in, and the CPU analyses it and responds to it.




*The Brain*

- The center of the nervous system.
- The vital organ that is responsible for the functions of seeing, hearing, smelling, tasting, thinking, feeling, remembering, speaking, dreaming, information processing, and a lot more.
- The regulator of basic survival functions such as breathing, resting and feeding.
- It is responsible for abstract level functions such as decision making, foresight, and problem solving.
- The spinal cord is an information highway connecting the PNS to the brain.
- Information travels to and from the brain by way of spinal cord.

*Functions of the Various Structures of the Brain*

- Regulation of the internal systems
- Reproduction
- Sensation
- Motion
- Adaptation to the varying environmental demands

*Structure of Brain*

- The deeply grooved structure lies safely and securely in our skull.
- The average adult human brain weighs 1.3 to 1.4 kg (approx. 3 pounds).
- If you look at it from the outside the brain is pinkish gray in color; soft, spongy, and mottled.
- The brain contains billions of nerve cells (neurons) and trillions of "support cells".

*Parts of the Brain*

The brain is made of three main parts:

a. **Fore brain**
b. **Mid brain**
c. **Hind brain**

*Fore Brain*

i. **Cerebrum**
ii. **Thalamus**
iii. **Hypothalamus**
iv. **Limbic system**

*Mid Brain*

i. **Tectum**
ii. **Tegmentum**
iii. **Reticular formation**
iv. **Substantia nigra**

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Hind Brain*

i. **Cerebellum**
ii. **Pons**
iii. **Medulla oblongata**

*Brain Stem and Cerebellum*

Located underneath the limbic system the brain stem, containing four structures, is found in all vertebrates. It contains four structures:

1. **Medulla**
2. **Pons**
3. **Reticular formation**
4. **Thalamus**

- Responsible for basic survival functions such as breathing, heartbeat, and blood pressure.

**1. Medulla/ Medulla Oblongata**

- Located at the top of the spinal cord and continuous with it.
- Damage to Medulla can be fatal as it is the center responsible for vital functions i.e., respiration, heart beat, and blood pressure.
- Contains ascending & descending tracts that communicate between the spinal cord & various parts of the brain.
- At medulla, nerves ascending from the body and descending from the brain cross over; hence the left side of the body is connected to the right side of the brain and vice versa.
- Contains 3 vital centers:
  **Cardio inhibitory center:** regulates heart rate.
  **Respiratory center:** regulates the basic rhythm of breathing.
  **Vasomotor center:** regulates the diameter of blood vessels.

**2. Pons**

**Pons = Latin word for bridge**

- Bridge connecting spinal cord with brain and parts of brain with each other.
- The pons seems to serve as a relay station carrying signals from various parts of the cerebral cortex to the cerebellum.
- Nerve impulses coming from the eyes, ears and touch receptors are sent on the cerebellum.
- The pons also participates in the reflexes that regulate breathing.
- It has parts that are important for the level of consciousness and for sleep.

**3. Reticular Formation**

- The reticular formation is a region running through the middle of the hindbrain and into the midbrain.
- A dense network of nerve cells.
- It keeps the brain alert even during sleep.
- It makes the cerebral cortex attend to new stimulation by arousing it.
- Long fibrous tracts of reticular formation run into the thalamus.
- Needed for arousal from sleep & to maintain consciousness.
- Serious damage to reticular formation may result into a coma.

**4. Thalamus**

The pair of egg-shaped structures located at the top of the brainstem.

- Incoming sensory information is channeled to the appropriate area of the cerebral cortex by thalamus, so that it is processed there.
- Thalamus acts like a relay station…. the brain's sensory switchboard; it directs messages to the sensory receiving areas in the cortex and transmits replies to the cerebellum and medulla.

© Copyright Virtual University of Pakistan

- It receives information from the sensory neurons and routes it to the higher brain regions that deal with vision, audition, taste and touch.

*Cerebellum*

- "Cerebellum" comes from the Latin word for "little brain". The cerebellum is located behind the brain stem.
- Cerebellum is somehow similar to the cerebral cortex: the cerebellum is divided into hemispheres and has a cortex that surrounds these hemispheres.
- It carries 10% of the weight of the brain.
- It contains as many neurons as in the rest of the brain.
- Its function is to coordinate body movements i.e. coordination, maintenance of posture & balance.
- Damage to cerebellum results into jerky and uncoordinated body movements.

*Limbic System*

- Evolutionarily the structure of limbic system is rather old.
- The limbic system, often referred to as the "emotional brain", is found buried within the cerebrum.
- At the border of the brainstem and cerebral hemispheres it is a doughnut-shaped system of neural structures; associated with emotions e.g. fear and aggression, and drives like hunger and sex; regulates body temperature, blood sugar level and blood pressure.

*Structures within the Limbic System*

i. Hippocampus
ii. Amygdala
iii. Hypothalamus

**Amygdala**

- Two almond-shaped neural clusters in the limbic system that are linked with emotions.
- They are related with aggression and fear.

**Hippocampus**

- The hippocampus is the part of the limbic system that is important for memory and learning.

**Hypothalamus**

- One of the smallest structures in the brain.
- The neural structure lying below (hypo) the thalamus; Composed of several nuclei. Small bundles of neurons that regulate physiological processes involved in motivated behavior e.g. hunger, thirst, regulation of body temperature.
- Hypothalamus acts as the body's Thermostat.
- Helps govern the endocrine system via the pituitary gland.
- Is linked to emotions.

**Homeostasis**

Hypothalamus maintains the body's internal equilibrium e.g. looking for food when energy levels are low, causing constriction of the blood vessels when body temperature falls.

*Cerebrum*

- Largest part of the human brain, associated with higher brain functions such as thought and action..
- Occupies 2/3 of the brain's total mass
- Consists of two symmetrical halves or hemispheres; The right cerebral hemisphere controls the left side of the body and vice versa.
- The hemispheres are connected by Corpus Callosum, a thick mass of nerve fibers.
- Cerebrum regulates the brain's higher cognitive and emotional functions.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Cerebral Cortex*

- Coming from the Latin word for "bark", cortex means covering, or sheath; the cortex is a sheet of tissue making up the outer layer of the brain.
- About 1/10 of an inch in thickness, the cortex is composed of some 30 billion nerve cells and 300 trillion synaptic connections.
- It is the body's ultimate control and information-processing center.

*Sulci and Gyrus*

- The cerebral cortex is greatly convoluted in humans. These convolutions include:

1. **Sulci (singular Sulcus)** i.e. small grooves.
2. **Gyri (singular Gyrus)** i.e. large grooves also called "**Fissures".**

*Grey matter*

- Cerebral cortex mostly consists of glia (glial cells), cell bodies, dendrites and interconnecting neurons; they give the cerebral cortex a grayish brown appearance, commonly known as 'Grey Matter".

*White Matter*

- Beneath the cerebral cortex lie millions of axons that connect the neurons of the cerebral cortex to those located elsewhere in the brain.
- The large myelin gives tissue an opaque white appearance known as "White Matter".

*Cerebral Lobes*

a. Frontal lobe
b. Parietal lobe
c. Temporal lobe
d. Occipital lobe

- Each lobe controls a different range of activities.
- Each hemisphere is vertically divided by the **central sulcus,** a groove.
- The lateral fissure, another groove divides each hemisphere horizontally.

**a. Frontal lobe**

Associated with motor control and cognitive activities; reasoning, planning, decision making, problem solving, movement and speech (Broca's Area).

**b. Parietal lobe**

Associated with controlling incoming sensory information; thus affecting movement, orientation, recognition, perception of stimuli.

**c. Temporal lobe**

Associated with perception and recognition of auditory stimuli, memory & speech.
Wernicke's area: concerned with the understanding of language is located here

**d. Occipital lobe**

Associated with visual processing.

*Cranium*

- The brain is enclosed in the cavity of skull or cranium consisting of eight hard bones; One frontal bone, two parietal bones, two temporal bones, one occipital bone, one sphenoid bone, and one ethmoid bone.

**LESSON 13**

## NERVOUS SYSTEM (2)

*Membranes of the Brain*

- Between the surfaces of the brain and the skull, there are three layers of membrane called the meanings, which completely cover the brain and spinal cord.
- These three membranes are:
  1. **Dura Matter**
  2. **Arachnoid**
  3. **Pia Matter**

*Cerebrospinal Fluid (CSF)*

- The subarachnoid space contains a fluid called cerebrospinal fluid (CSF), a clear, colorless fluid covering the entire surface of central nervous system.
- The total volume of CSF is 125-150 ml.
- Total production of CSF is about 400-500 ml/day (about 0.36ml/min).

*Association Areas*

- Areas in the cerebral cortex that are not involved in primary motor and sensory functions; rather they are involved in higher mental functions such as learning, remembering, thinking and speaking.
- Association areas in the Frontal Lobes are concerned with judging and planning;
- Damage may lead to intact memory but inability to plan out something. Personality
- may also be affected.
- Association areas of other lobes are related to other mental functions; i.e. Temporal Lobe enables us to recognize faces; damage to this area causes inability to identify people (although facial features can be described), and gender and approximate age too.
- Association areas in the posterior lobes are involved in perception and memory. Damage leads to difficulty in perceiving speech.

*Spinal Cord*

- Continuation of the Medulla Oblongata.
- The spinal cord is about 45 cm long in men and 43 cm long in women and weighs about 35-40 grams.
- The vertebral column (back bone), encapsulating the spinal cord, is about 70 cm long comprising vertebra in the vertebral column.
- The spinal cord is much shorter than the vertebral column.
- Signals arising in the motor areas of the brain travel back down the cord and leave in the motor neurons.
- The spinal cord also acts as a minor coordinating center responsible for some simple reflexes like the withdrawal reflex.

**Reflex -** rapid (and unconscious) response to changes in the internal or external environment, needed to maintain homeostasis

**Reflex arc:** the neural pathway over which impulses travel during a reflex. The components of a reflex arc include:

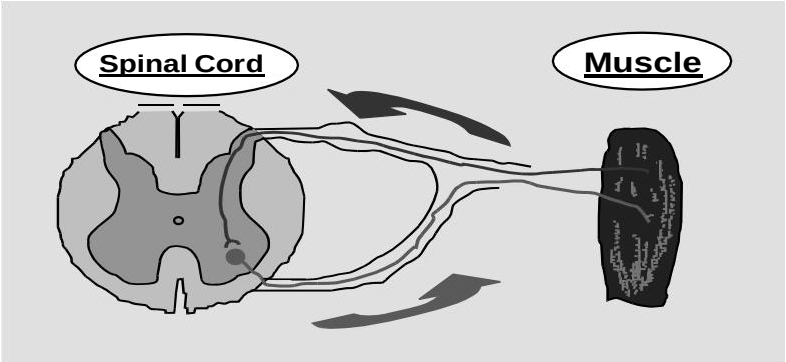
1. **Receptor -** responds to the stimulus
2. **Afferent pathway** -- sensory neuron
3. **Central Nervous System**

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

*Peripheral Nervous System (PNS)*

Consists of the spinal and cranial nerves; these connect the CNS to the rest of the body. PNS connects the body's sensory receptors to the CNS, and the CNS to the muscles and glands.




*Parts of Peripheral Nervous System*

***PNS has two important parts***

1. **Skeletal/Somatic Nervous System**
   - Controls the voluntary movements of our skeletal muscles.
   - It reports the current state of skeletal muscles and carries instructions back.

2. **Autonomic Nervous System (ANS)**
   - Considered as the "self governing or self-regulatory mechanism" because of its involuntary operation.
   - Controls the glands and muscles of internal organs e.g. heart, stomach, and glandular activity.
   - A.N.S. has a dual function; i.e. both arousing and calming.
   - Comprises two sub systems; Sympathetic and parasympathetic nervous systems.

***a. Sympathetic Nervous System (SNS)***

- This part of ANS arouses us for defensive action…. fight or flight.
- If something alarms, endangers, excites, or enrages a person, the sympathetic nervous system accelerates heart beat, slows digestion, raises the sugar level in blood, dilates the arteries and cools the body through perspiration; makes one alert and ready for action.

***b. Parasympathetic Nervous System (PNS)***

***When the stressful situation subsides, parasympathetic nervous system begins its activity.***

- It produces an effect opposite to that of sympathetic nervous system.
- It conserves energy by decreasing heart beat, lowering blood pressure, lowering blood sugar and so on.

In daily life situations, both sympathetic and parasympathetic systems work together to keep us in steady internal state maintaining the homeostasis.

**Studying the Structure and Function of the Brain**

- **Electroencephalogram (EEG):** recording of the electrical signals being transmitted within the brain, through electrodes attached to the skull.

- **Computerized Axial Tomography (CAT):** a computer constructs an image of the brain by combining thousands of separate X-rays taken from slightly different angles.
- **Magnetic Resonance Imaging (MRI):** the scan produces a powerful magnetic field to provide a computer generated, detailed image of the structure of the brain.

- **Super Conducting Quantum Interference Device (SQUID*):*** a scan sensitive to minute changes in the magnetic field occurring when neurons are firing.

- **Positron Emission Tomography (PET)*:*** a scan showing biochemical activity within the brain at any given moment.

**LESSON 14**

## ENDOCRINE SYSTEM

Endocrine system is a collection of glands that produce hormones that regulate body's growth, metabolism, and sexual development and function. The hormones are released into the bloodstream and transported to tissues and organs throughout the body.
Although there are eight major endocrine glands scattered throughout the body, they are still considered to be one system because they have similar functions, similar mechanisms of influence, and many important interrelationships.

- Endocrine glands are known as the "**Managers of Human Body".**
- Endocrine system is the system in which a number of glands secrets numerous hormones directly into the blood stream which regulate:

O Body's growth

O Metabolism

O Sexual development and functions, and

O Other vital functions of the body

- Endocrine glands are ductless glands that secrete their hormones directly into the bloodstream.
- Hormones act as chemical messenger controlling various functions, reaching to the tissues and other vital organs of the body.

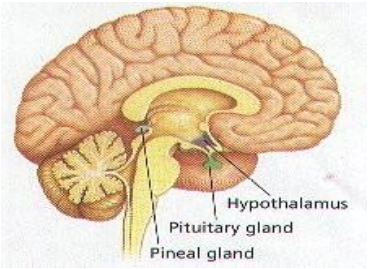
**Pineal Gland**

- The pineal gland, also known as pineal body, is found in the brain stem.
- It is small and cone-shaped in structure

Main function:

O Affects reproductive development

O Daily physiologic/ biological cycles




**Pituitary Gland**
Size and shape
It is a small gland_ diameter of about 1 centimeter or size of a pea.

**Location**

- It is connected with the hypothalamus by a slender stalk and also surrounded by bone.
- Secretes a number of different hormones that influence/affect various other endocrine glands.
- There are two distinguishable regions in the gland that have different secretions and functions:
  a. The anterior lobe
  b. The posterior lobe

**a. Hormones of Anterior Lobe**
**Growth Hormone:** Protein that regulates and also stimulates the:

- growth of bones,
- muscles, and other organs of the body by promoting protein synthesis.

The effect of this hormone is important and very much apparent because it affects height.
**Growth Hormonal Problems**

**Dwarfism**
If there is very little or no secretion of this hormone in a child, then the child may become a pituitary dwarf_ small in stature.
**Gigantism**

- If there is too much secretion of this hormone in the body, then there is exaggerated bone growth in a person and the person become exceptionally tall or a giant.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- This rare condition is usually caused by a pituitary tumor and can be treated by removing the tumor.
- When the pituitary gland fails to produce adequate amounts of growth hormone, a child's growth in height is impaired/ disturbed.
- Hypoglycemia (low blood sugar) may also occur in children who have deficiency of this growth hormone_ affects particularly infants and young children with this condition.

**Thyroid-stimulating hormone:** Affects the glandular cells of the thyroid so that it secretes thyroid hormone. The thyroid gland become enlarged and secretes too much thyroid hormone if there is hyper secretion of thyroid- stimulating hormone.

**Adrenocorticotropic hormone:** Cortical hormones especially cortisol are secreted when it reacts with the receptor cells in the cortex of the adrenal gland.

**Gonadotropic hormones**: Regulate the development, growth, and function of gonads and ovaries by reacting along with receptor cells present in these organs.

**Prolactin Hormone:** Helps in promoting the development of glandular tissues in the female breasts during pregnancy and as a result stimulates milk production after the birth of the infant.

**b. Hormones of the Posterior Lobe**

**These hormones are:**

**i. Antidiuretic hormone**

- Helps in the reabsorption of water by the kidney tubules_ as a result of which less amount of water is lost from the body as urine.
- This system/ mechanism conserves water for the body.

**ii. Oxytocin**

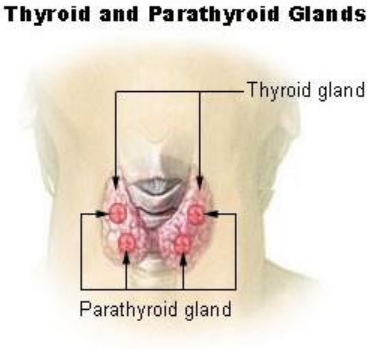
- Helps in the contraction of smooth muscles in the walls of the uterus.
- It also stimulates the ejection of milk from the lactating breast.

**3. Hypothalamus**

- Part of the central nervous system that is involved in controlling and activating involuntary functions of the body such as,
- Hormonal system
- Other body functions as well_ regulating sleep and stimulating appetite

**Thyroid Gland**

Type, Location and Lobes




- Very vascular organ and is located in the neck.
- Consists of two parts/ lobes, one on each side of the trachea, just below the larynx or voice box.
- These two lobes are connected by a narrow band of tissue, called the 'isthmus'.
- This gland consists of follicles, which produce thyroxin and triiodothyronine hormones.
- These hormones contain iodine--- about 95% of most functioning hormone is thyroxin and the remaining 5% is triiodothyronine_ both require iodine for their synthesis.
- Secretion is regulated by a negative feedback mechanism.

**Calcitonin**

- Secreted by Para follicular cells of the thyroid gland.

- Opposes the action of the parathyroid glands by reducing the calcium level in the blood.
- If calcium level in the blood becomes too high, calcitonin is secreted until calcium ion levels decreases to normal.

**Iodine Deficiency**

- Thyroid enlargement is called "goiter" or "iodine deficiency goiter".
- If there is a deficiency of iodine in the body, then thyroid produce insufficient hormones required by the body_ causing the thyroid- stimulating hormone of the pituitary gland (anterior lobe) to secrete its hormone. This results in the increase in size of the thyroid gland but it is unable to make enough hormones, because it is lacking the raw material for production i.e. iodine.

**Parathyroid Gland**

Location, Type, Amount, Hormone

- Parathyroid gland consists of four small masses of epithelial tissue that are embedded in the connective tissue capsule, on the posterior side of the thyroid glands.
- Secretes 'parathyroid hormone' or 'parathormone'.
- Most important regulator of blood calcium levels, secreted in response to low blood calcium levels, and its function is to increase calcium levels in the body.

**Deficiency/ insufficient secretion of parathyroid gland**

- Insufficient secretion of parathyroid hormone 'hypoparathyroidisms', leads to increased nerve excitability.
- Low blood calcium level in the body triggers spontaneous and continuous nerve impulses, which in turn stimulate muscle contraction.

**Pancreas--- Islets of Langerhans**

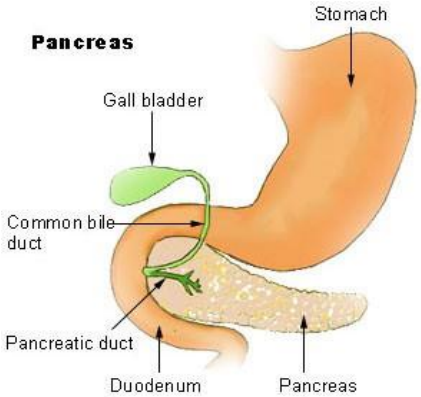
- A long, soft organ that lies transversely along the posterior abdominal wall, posterior to the stomach, and extends from the region of the duodenum to the spleen.

a. Exocrine portion of this hormone secretes digestive enzymes that are carried by a duct to the duodenum

b. The endocrine portion consists of the pancreatic islets, and

c. secretes glucagons and insulin.**Alpha Cells in Pancreatic Islets**

Secrete hormone called 'glucagons' when there is a low concentration of glucose in the blood.



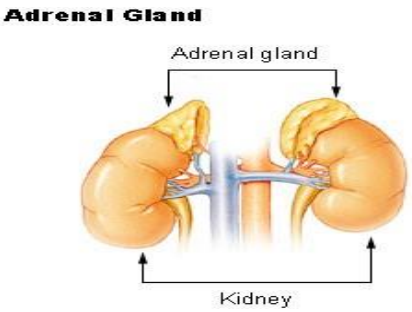

**Beta Cells in the Pancreatic Islets**

After the alpha cells, beta cells secrete hormone called 'insulin' as a result of high concentration of glucose in the blood.

**Adrenal Gland**

Synthesis and Location

- Developed from different embryonic tissues, it secretes various hormones.
- The adrenal/ suprarenal is a paired gland and located near the upper portion of each kidney.




**Division of Adrenal Gland**

Each gland is divided into two parts

a. An outer cortex and

b. An inner medulla

- The cortex and medulla of the adrenal gland are just like the anterior and posterior lobes of the pituitary gland.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- The adrenal cortex is essential to life because it has very important functions to perform, but the medulla may be removed with no life-threatening effects.
- Hypothalamus effects and influences both portions of the adrenal gland but it involves different mechanisms i.e. adrenal cortex is regulated by negative feedback which involves hypothalamus and adrenocorticotropic hormone.
- Medulla is regulated by nerve impulses of hypothalamus.

**Hormones of the Adrenal Cortex**

- The adrenal cortex consists of three different portions/ regions, each region produce different type of hormones.
- Chemically, all these cortical hormones are steroid.

**a. Mineralocorticoids**

- Secreted by the outermost region of the adrenal cortex.
- The main/ principal hormone of mineralocorticoid is aldosterone, which acts to store/ conserve sodium ions and water in the body.

**b. Glucocorticoids**

- Secreted by the middle region of the adrenal cortex.
- The main/ principal hormone of glucocorticoid is cortisol, which increases blood glucose/ sugar level in the body.

**c. Gonadocorticoids**

- Also known as the sex hormones.
- These are secreted by the innermost region of the adrenal cortex.
- Adrenal cortex hormones, androgens (male hormones) and estrogens (female hormones), are secreted in minimal amounts in both sexes, but their effect is usually influenced by the hormones from the testes and ovaries.
- In females, the masculinization effect may become more evident after menopause. This occurs because the estrogen levels from the ovaries decrease.

Hormones of Adrenal Medulla

- Develops from neural tissues.
- Secretes two types of hormones,

O Epinephrine and

O Nor epinephrine

- These are secreted in response to stimulation by sympathetic nerve, especially during stressful situations.
- Lack of hormones from the adrenal medulla produces no significant effects,
- Hyper secretion, e.g., in case of a tumor, results in prolonged or continual sympathetic responses.

**Gonads**

- Primary reproductive organs are testes in the male and the ovaries in the female.
- These organs are responsible for producing the sperm and ova, but they also secrete other hormones, and that is why they are considered to be endocrine glands.

**Testes**

- Male sex hormones (as groups) are called androgens of which the most important and influential is 'testosterone'; secreted by the testes.
- Small amount is also produced by the adrenal cortex.
- Production of testosterone begins before birth. i.e. during fetal development that continues for a short time after birth, nearly ceases during childhood, and then resumes at puberty.

© Copyright Virtual University of Pakistan

- This steroid hormone is responsible for:

O The growth and development of the male reproductive organs.
O Increase in the size of skeleton and muscular growth.
O Larynx enlargement, accompanied by voice changes.
O Growth and distribution of body hair.
O Increased male sexual drive.

- It's secretion is controlled and regulated by a negative feedback system and involves release of hormones from the hypothalamus and gonadotropins from the anterior pituitary.

**Ovaries**

- Two groups of female sex hormones are produced in the ovaries i.e.,

OEstrogens and

OProgesterone

Contribute to the development and function of the female reproductive organs and sex characteristics

**i.** Estrogen

**Estrogen (on the onset of puberty) activates/ promotes:**

- Development of female bodily characteristics.
- Distribution of fats in the body.
- Maturation of reproductive organs .

**ii.** Progesterone

Causes the uterine lining to become thick, preparing uterus for pregnancy.

- Together both progesterone and estrogen are responsible for a number of changes occurring in the uterus.

**Other Endocrine Glands**

- In addition to the major endocrine glands and their system, there are various other organs, which are involved, in some hormonal activity or function. These include:
  i. Thymus
  ii. Stomach
  iii. Small intestines
  iv. Heart, and
  v. Placenta

**i. Thymosin**

Hormone produced by the thymus gland, which has an important role in the development of the body's immune system.

**ii. Gastrin**

- Gastric mucosa (lining of the stomach) produces a hormone, called gastrin that is secreted when the food is present in the stomach.

- Stimulates the production of 'hydrochloric acid' and the enzyme 'pepsin', which are involved in the digestion of food.

**iii. Secretin and Cholecystokinin:** The mucosa of the small intestine secretes these hormones.

- Secretin stimulates the pancreas to produce a neutralizing agent_ bicarbonate-rich fluid that neutralizes the stomach acid.

**Cholecystokinin**

- Stimulates contraction of the gallbladder, which result in the releases of bile.
- Also activate the pancreas to secrete digestive enzyme.
- Atrial Natriiuretic Hormone, or Atriopeptin
- Heart also function as an endocrine organ

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- In addition to its major role of pumping blood, has special cells in the wall of the upper chambers of the heart 'atria', secretes hormone called atrial natriiuretic hormone, or atriopeptin.

**Placenta**
Develops in the pregnant female
It is a source of nourishment and gaseous exchange for the developing fetus
Also serves as a temporary endocrine gland
**Chorionic gonadotropin:** One hormone that placenta secretes in human beings.

**Diseases Resulting from Abnormal Secretion of Endocrine Glands**

- Too much or too less secretions of endocrine glands can be harmful for the body.
- These secretions can be treated by controlling the over production, providing the essentials for production, or replacing hormones.
- Some of such abnormalities are:

**1. Cretinism**

- Occurs due to the lack of thyroid gland secretions.
- Prevalent mostly in Southern France, Spain, Italy, and Switzerland.
- Its symptoms are:

**O Marked dwarfism and imbecility.**
O The adult who remains untreated remains about as large as a four-year-old child and has the mental level/ intelligence of that age.
O Hair becomes coarse.
O Feeling no or little emotion.

2. Hyperthyroidism

- Occurs when thyroid becomes overactive

**The major symptoms are:**

- Person becomes restless and thin
- Shows excessive emotionality
- Sleeplessness
- Rapid heart beat
- Tremors
- Thyroid becomes swollen (goiter)
- Nervousness
- Excessive sweating,
- Blood pressure
- Protruding eyes

In children and teens, **GRAVES' DISEASE** usually causes this condition,
an autoimmune disorder in which specific antibodies produced by the child's immune system stimulate the thyroid gland to become overactive.

**Method of treatment**

- Removal of some of the gland surgically.
- Radiotherapy

In early times, the entire gland was also removed, but by doing this, the chances of myxoedema become probable.

- With the proper dosage of the gland substance i.e. iodine, the patient remains normal, but with low dosage the person becomes dull and stupid. When too much is given, become unstable and emotional.

**3.Hypothyroidism**
Condition in which the levels of thyroid hormones in the blood are abnormally low. Symptoms are:

- Slows body processes that may lead to fatigue

- Slow heart rate
- Dry skin
- Weight gain
- Constipation
- In children, it may result in
- Slow growth and delayed puberty

**"Hashimoto thyroiditis"** results from an autoimmune process that damages the thyroid and blocks thyroid hormone production/ secretions. It is the most common cause of hypothyroidism in children.

- Infants can also be born with an absent or underdeveloped thyroid gland, resulting in hypothyroidism.
- The condition can be treated with oral thyroid hormone replacement.

**4. Myxoedema**

- Occurs particularly in women___also due to a deficiency in the thyroid gland's secretion.
- When it occurs, the patient, who was earlier a bright, capable, energetic person, full of the eager purposes and emotions of life, gradually becomes,

O Dull
O Stupid O Apathetic
O Without fear, anger, love, joy or sorrow
O Without purpose or striving
O Hair becomes coarse and scanty
O Skin thick and swollen (hence the name of the disease) and
O Various changes take place in the sweat secretion, the heart action, etc

**5.Acromegaly**

Occurs due to an abnormality/ change in the pituitary gland.
The major and apparent symptoms are:
O Melancholic tendencies
O Loss of memory and
O Mental and physical torpor
O Profound effect on character and personality, exclusive of intelligence, and that of sex glands

**6.Adrenal insufficiency**

- Condition occurring due to the decreased function of the adrenal cortex, and consequently underproduction of adrenal corticosteroid hormones.
- The symptoms of adrenal insufficiency may include,

O Weakness

O Fatigue

O Abdominal pain

O Nausea

O Dehydration

O Skin changes

**Treatment**

Doctors treat adrenal insufficiency by giving replacement corticosteroid hormones.

**7. Cushing syndrome**

- When excessive amounts of glucocorticoid hormones are secreted in the body, then it causes this syndrome.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- If this condition is due to a tumor in the pituitary gland that produces excessive amounts of corticotropin and stimulates the adrenals to overproduce corticosteroids, then it is known as Cushing disease.

- In children, it most often occurs when a child has been given large doses of synthetic corticosteroid drugs (such as prednisone) to treat autoimmune diseases such as lupus.
- Symptoms that may take years to develop include:

O Obesity
O Growth failure
O Muscle weakness
O Easy bruising of the skin
O Acne
O High blood pressure
O And psychological changes

**Treatment:**
Depending on the specific cause, doctors may treat this condition with:
O Surgery
O Radiation therapy
O Chemotherapy
O Or drugs that block the production of hormones
**8.Diabetes**

**Type 1 Diabetes**
- Develops when pancreas fails to produce enough insulin.
- **Symptoms include excessive:**

O Thirst

O Hunger

O Urination, and

O weight loss

- In children and teens, the condition is usually an 'autoimmune disorder"___specific immune system cells and antibodies produced by the child's immune system that attack and destroy the cells of the pancreas that produces insulin.
- Can cause long-term complications such as:

O Kidney problems
O Nerve damage
O Blindness
O And early coronary heart disease and stroke

**Treatment**
In order to control blood sugar levels and reduce the risk of developing diabetes complications, children with this condition need regular injections of insulin
**Type 2 diabetes**
In this, the body is unable to respond to insulin normally, like in type 1 diabetes
- Children and teens with this condition are overweight.
    - It is also believed that excess body fat plays a role in the insulin resistance that characterizes the disease.
    - In recent years the rising prevalence of this type of diabetes in children played a crucial role in increasing rates of obesity among children and teens.The symptoms and possible complications of type 2 are the same as those of **type 1.**
    -

**Some children and teens can control their blood sugar level with:**

O Dietary changes
O Exercise
O Oral medications
O But many have need to take insulin injections like patients with type 1 diabetes.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**LESSON 15**

## SENSATION

Traditionally, the five special senses have been defined as taste, smell, sight, hearing and feeling. However, touch is now considered to reflect the activity of the general senses, and equilibrium, or balance, can be thought of as a new fifth special sense. In contrast to the general sensory receptors, most of which are modified dendrites of sensory neurons, the special sensory receptors are distinct receptor cells. They are either localized within complex sensory organs such as the eyes and ears, or within epithelial structures such as the taste buds and olfactory epithelium.

The principle function of the special sensory receptors is to detect environmental stimuli and transfer their energy into electrical impulses. These are then conveyed along sensory neurons to the central nervous system, where they are integrated and processed, and a response is produced.

There is no firm agreement amongst neurologists as to exactly how many senses there are. The disagreements stems from a lack of consensus as to what the definition of a sense should be. Although it is still routinely taught that there are five senses (sight, hearing, touch, smell, taste; a classification first devised by Aristotle, it is generally agreed that there are at least nine different senses in humans, and a minimum of two more observed in other organisms.

A broadly acceptable definition of a sense would be "**a system that consists of a sensory cell type (or group of cell types) that respond to a specific kind of physical energy, and that correspond to a defined region (or group of regions) within the brain where the signals are received and interpreted".** Where disputes arise is with regard to the exact classification of the various cell types and their mapping to regions of the brain. It can also be defined as:

- Sensation is a process that makes possible, and facilitates our contact with reality
- 'To sense' means to become aware of something
- All living organisms have sense organs. Sensation is the process by which our sense organs respond to different stimuli
- It is the mechanism through which stimuli from outside or inside the body are received and felt by different faculties e.g., hearing, sight, smell, touch, taste, and equilibrium.

In the process of sensation the incoming (afferent) nerve impulse is registered in that part of the brain, which has a potential of such reception. The awareness of a stimulus results from the perception of the sensory receptors

**The five senses**

- Vision
- Hearing/ Auditory sense or Audition; also associated with maintenance of bodily balance
- Smell/ Olfaction
- Taste
- The skin sensations/ Kinesthetic sense; touch, pressure, temperature, and pain

**Vision/The visual Sensation**

- The sensation that takes place through the function of eyes; eyes receive the visual messages or stimulation, that is carried by nerves to the concerned part of the brain that processes the received information.

**The Human Eye**

- The eye is a very complex, delicate, and vital structure, that is responsible for an organism's interaction with the external world. It is the most important and influential sense organ.
- It receives information from the outside world in the form of light, and sends loads of information to the brain all the time
- The human eye is a little less than one inch in diameter and almost spherical
- The eye has a very specific design or form, which captures and processes light coming from outside…light reflected by the stimuli

- Eyes function like a camera, which has its aperture, and a lens through which the light enters and cells present in it process the received light just as do the intricate internal parts of the camera.

**Anatomy/ Structure of the Eye**

The anatomy of the eye is broadly divided into three parts along with its chambers

i. **The external structure of the eye**
ii. **The immediate structure of the eye**
iii. **The internal structure of the eye**

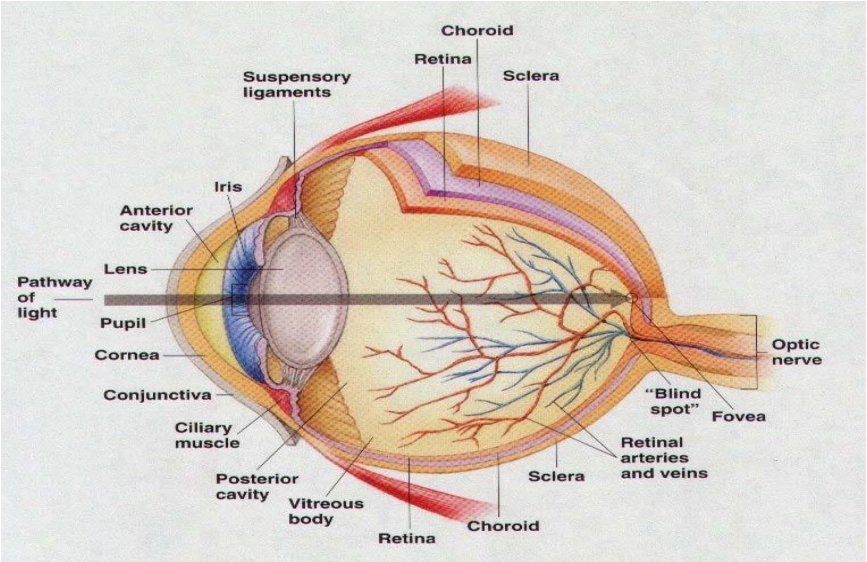
All structures are important in terms of their processing and functioning

**The External Structure**

The entire external structure of the eye is a "light-tight" box

**Cornea**

- A transparent external surface, a five-layered membrane that covers both the pupil and the iris.
- It is the first and most powerful lens or layer of the visual apparatus that helps to form the sharp image on the retinal photoreceptor cells, along with the crystalline lens




**Sclera**

- Outer walls of the eye are formed by a hard, white substance called 'sclera', hence sclerotic coat that covers 5/6th of the surface of the eye
- The outside of the eye is light-tight and its mechanism is designed in such a manner that only small amount of light can enter into a small opening that enables the production of a clearer vision, because a smaller opening also acting as the 'aperture', creates a sharper image

**The Immediate Part**

**Pupil**

- A dark, adjustable opening in the center of the eye through which the light enters. It changes its size as the amount of light entering the eye varies
- It looks dark and black in appearance, because of the absorbing pigments in the retina

**Iris**

- Around the pupil of the eye, there is a ring of muscle tissue that controls the size of the pupil opening, through its contraction and expansion
- It contains the color pigments and thus gives color to the eye_ the color which the eyes possess such as brown, black, green, blue etc are due to the iris muscles

**Lens**

- The transparent part of the eye that is located behind the pupil that changes it shape in order to focus images on the retina

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- The lens changes its own thickness in order to focus image properly on retina__ this ability of the lens is called **" accommodation"**
- The process of accommodation depends largely on the location of the object with respect to the observer's body__ distant objects require a relatively flat lens and the muscles that are controlling it are relaxing as compared to when focusing the nearer objects, when muscles contract, taking tensions off the lens thus making the lens more round shaped

**Fluids in the Chambers of the Eye**

- Eye has three important layers or chambers:

i. **Anterior layer that lies between the cornea and iris**
ii. **Posterior layer that lies between iris and lens**
iii. **Vitreous layer that lies between the lens and the retina**

- **Anterior and posterior** chambers are filled with aqueous humor
- Whereas the **vitreous chamber** is filled with a more viscous fluid, the vitreous humor
- The eye is filled with these two liquids that are important because they help maintain the shape of the eye and provide nourishment to the cells present in the eye
- The function of these fluids is the same as that of blood in other parts of the body; the difference being that these liquids are nearly transparent, so that they can nourish the cells of the eye without interfering with the light that enters in the eye

**Choroid**

It is the middle layer of the eye, and the lining of the 3/5th of the eyeball

- The choroid serves two important functions; i.e. nourishment and absorption
- The choroid carries blood to the retina and the humors in order to provide nourishment to the eye
- The other important function is that choroid absorbs any light that strikes on it__ this is extremely important, because light that passes through the rods and cones does not reflect back. But, in any case, if it (light) reflects back, the photo-sensitive cells would receive the light message twice, and would percept wrong, that there was twice as much light as there really was.

**Internal Structure of the Eye**

- Includes the most important structure**; "the retina".**
- Retina is the light- sensitive inner surface or chamber of the eye that converts the electromagnetic energy of the light into useful information for the brain.
- It contains about 130 million nerve cells.
- It contains the receptors rods and cones plus the neurons; these cells are very important as they initiate the processing of visual information.
- The retina has an area of 5 square centimeters located at the back of the eye, which is a location where all light detection takes place.
- The retina is a network of nerve cells connected with over 100 million photosensitive rod and cones.The signals generated by these rods and cones are then sent, via the optic nerve, to the visual areas in the brain

**Plexiform Layer**

- It is the top layer of the retina, which does not interpret the light striking this part
- A web of optical nerves that carry signals of rods and cones to the optic nerves
- It is located between the photosensitive cells and the vitreous humor so that the web's cells can be nourished
- These cells are nearly transparent so only minimal interference takes place when light strikes on the photosensitive cells

© Copyright Virtual University of Pakistan

**Rods and Cones**

**a. Rods**

- Retinal receptors which are long, cylindrical, and light sensitive; that can only detect black, white and gray; they functions well in dim light, and are largely insensitive to color and small details__ functions when cones do not respond
- Rods are used for 'peripheral vision', i.e. the objects that are outside the main center of focus, and for night vision

**b. Cones**

- Retinal receptors, cone- shaped and light sensitive, concentrated near the center of the retina that is concerned with sharp focusing, fine details and color sensation; they work well in well- lit conditions i.e., bright or sufficient light
- Rods and cones are distributed unevenly throughout the retina
- There are fewer cones i.e. about seven million than rods i.e., 125 million

**Important Regions of Retina; Fovea and Blind Spot**

**a. Fovea**

- The very sensitive and important part of the retina that aids in focusing; it is the area of best vision.
- The largest concentration of cones is present in fovea
- There are no rods present in fovea

**b. Blind Spot**

- The area/ point where the optic nerve leaves the eye; no receptor cells are located here, thus creating a " blind" spot__ area of no vision

| *The Human Eye* | *Rods* | *Cones* |
|---|---|---|
| Number | **125-Million** | **6-7Million** |
| Location in the | *Center* | Periphery |
| Sensitivity in dim | *Low* | *High* |
| Color sensitive | *Yes* | *No* |

**Transfer of Visual Information from the Eye to the Brain**

- As the light strikes the receptor cells i.e. rods and cones, the chain of events begin, which transforms the light impulses into the neural impulses, which are then sent to the brain via the optic nerve
- Before reaching the brain, some initial transformation in the visual information takes place
- Rods contain **"RHODOPSIN"__** a reddish- purple substance, in which chemical reaction/ changes occur when activated by light
- Substance in the cones is different from that of rods__ but their principles of functioning are similar
- Functioning of the neural impulses begins when stimulation of nerve cells in the eye takes place information is transmitted to the brain by **" bipolar cells"** and " **ganglion cells"Bipolar cells** are the nerve cells leading to the brain__ triggered by the nerve cells in the eye; they receive information directly from rods and cones and then that information is transferred to the ganglion cells

- **Ganglion cells** are the nerve cells that collect and summarize visual information from rods and cones and then transfer it to the brain; the visual information is moved out from the eyeball through the optic nerves

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- **Optic nerve** contains bundled ganglion axons; located at the back of the eye, optic nerve carries information to the brain

- When optic nerve leaves the eyeball, it does not take the direct route to the brain, instead, the optic nerves of both eyes meet, or intersect, at a point called "optic chiasm"_ point where the optic nerves are reversed and ' righted' in the brain
- When the optic nerves split at this point, the nerve impulses from the right half of each retina go to the right side of the brain and those from the left half to the left side of the brain

**Processing of Visual Information**

- When information reaches the brain, it passes through a number of stages
- At first, the ganglion cells are activated (summarize information from rods and cones)
- In some cases, ganglion cells are activated by light in the middle/ center, whereas, some ganglion cells are activated when there is darkness in the center and light in the surrounding areas; the ultimate function is to maximize the detection of variations in light and darkness
- The entire processing of visual information takes place in the visual cortex of the brain which is quite complex

**Feature detection** occurs when the neurons in the visual cortex are activated on seeing the particular shape/ pattern; discovered by the Nobel- prize winners David Hubel and Torsten Wiesel

- They found out that some cells are activated only on particular shape/ pattern, while only moving stimuli activates other cells

**Adaptation**

- The process of the eye becoming used to a certain amount of light is called adaptation
- What will happen when you enter into the movie theatre/ a dark room and hardly see anything? The isle, other people, or your seat. And what happens after a few moments? It is an example of adaptation to darkness
- Dark Adaptation means a heightened sensitivity to light resulting from being in low level of light for some duration
- On the contrary, you can see quite well in light after coming from the darkness_ dark adaptation
- The speed of processing from dark to light and light to dark adaptation is largely dependent on the rate at which the chemical composition in the rods and cones takes place

**Color Vision: Color, Effects and Uses**

**Color**

- In reality, in the physical world, there exist no colors only light waves of different wavelengths are what we perceive as colors
- When our eyes look at an object, we actually see the reflection of light after striking some object
- The normal human eye has the ability to differentiate/ distinguish among hundreds of such bands of wavelengths as they are received by the cones (sensory cells) of the retina___this ability makes it possible to perceive the world in color
- Human eye has the ability to distinguish among hundreds of wavelengths but our ability is quite limited, and the way we describe it is even more restricted
- A color name refers to attributing the colors of what we perceive in prototype of the range of different wavelengths e.g. "red" refers to colors that have more red attributes than orange/ yellow attributes, and the word "orange" refers to colors that have more orange attributes, so as the "yellow" as there really is no clear-cut distinction

**Perception of Color**

- Depends on subjective experience
- The wavelengths referred to by two people using the same color name almost always differ
- Also, due to the biological basis of our color vision, there is a high degree of universality in the use of color terms across cultures and languages

**Is There Any Psychological Effects of Color**

- Do colors have any effect/ impact on our emotions and behavior?___the answer is yes. But what kind of effect and how it affects our emotions and behavior is not yet conclusive
- Our reactions to colors are affected by a combination of biological, physiological, psychological, social and cultural factors
- Certain colors seem to be more universal in their effects on mood and behavior___they are known as "warm" and "cool" colors

***Warm colors:*** include magenta, red, orange, yellow, and yellow-green mainly; these speed up our perception of time and produce feelings that are warm, cozy, and inviting.
These colors are the associated with excitement, happiness and comfort
***Cool Colors:*** include violet, blue, light blue, and sea green generally
Emotions associated with these colors range from soothing, calmness, and peacefulness to sadness, withdrawal and repression
Different cultures and societies use specific colors for particular occasions, which symbolize their culture and tradition. e.g. White color

**The Use of Color and in professional and everyday life**
Color is one of the most effective tools in

- Fashion
- Advertising
- Presentations etc

Psychologists believed that color impression could account for 60% or more of the acceptance or rejection of that product or service

**Color Vision**

- Not only a exciting and pleasurable experience but it also helps in locating and identifying objects in the visual scene that would be hard to be identified if only in shades of gray
- The ability to detect, differentiate and discern different colors (wavelengths) gives us more information for detecting and identifying objects than would be provided solely by black and white vision
- Color vision is mediated by specialized nerve cells in the retina known as “cones” that function only in bright light
- When light becomes dim, rods take over, and they provide neither color vision nor high acuity (ability to detect fine detail, such as that needed for reading)

**Color Vision Needs Several Different Pigments**

- During the 1800's, visual pigments were discovered in the retina
- Both rods and cones possesses visual pigments
- This pigment molecule (embedded in the cell membrane of the photoreceptor), is a large protein called an **‘opsin’,** and is coupled with a small molecule called a **‘chromophore’** (a form of Vitamin A) that absorbs light
- When the chromophore absorbs light, it changes its shape which, in turns, activates the large opsin molecule___leads to a molecular event that culminates in an electrical change in the cell membrane
- The electrical signal is, then send to the retinal ganglion cells, whose axons take the information about light (electrical signals) to the brain
- Researches have shown that mainly three pigments (photoreceptor cells) with different combinations could produce vision that is capable of detecting all colors of the visible spectrum
- Scientists found that the human retina has three types of cones, each containing a different visual pigment. They are **red, green, and blue cones**, each containing a pigment similar to rhodopsin (pigment found in rods)Cone cells detect primary colors, but our brain mixes these colors in seemingly infinite variable proportions due to which we are able to perceive a wide range of colors
- Red cones absorb ‘longer wavelengths’, green cones ‘medium wavelengths’, and blue cones ‘shorter wavelengths’

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**Theories of Color Vision**

- A realistic and useful understanding about the structure and the function of the eye began in around 17th century when the gross anatomy of the eye was firmly established
- The two most prominent German and French researchers Johannes Kepler and Rene' Descartes made many discoveries/ advances in understanding vision
- Most of their work concentrated on the physical concepts of light rays and geometric optics in the visual process
- Kepler was the first to propose that the lens of the eye focuses images onto the retina Kepler's investigations were found correct when, after few decades, Descartes did experiments on this
- He postulated that the image was inverted as a result of being focused onto the retina by the eye's lens
- In his landmark experiment, Descartes surgically removed an eye from an ox and scraped the back of the eye to make it transparent. He then placed the eye on a window ledge as if the ox were looking out of the window. He looked at the back of the eye and saw an inverted image of the scenery outside_ he, then, correctly postulated that the image was inverted as a result of being focused onto the retina by the eye's lens

**Goethe's Theory of Color**

- Writer and scientist
- Wrote 1400-page treatise on color__ published in 1810
- Goethe believed that the color sensations that reach our brain were shaped by our perception — by the mechanism of human vision and by the ways our brain processes information
- Therefore what we see of an object largely depends on the object, the lighting and our perceptionStudied after-images, colored shadows and complementary colorsSought to derive laws about
- Color harmony,
- Methods/ ways of characterizing physiological colors (how colors affect us) and
- Subjective visual phenomena

**Thomas Young**

- Thomas Young introduced the original theory of color vision around 1790, prior to the discovery of the cone cells in the retina
- Young was the first to propose that the human eye sees only the three primary colors, red, blue and yellow and that all of the other visible colors are combinations of these
- It is now known that color vision is more complicated than this, but Young's work formed the foundation of color vision theory for the later scientists

**Three Main Theories of Color Vision**

- There are a number of theories related to color vision and color blindness, but the three very important and famous theories are;

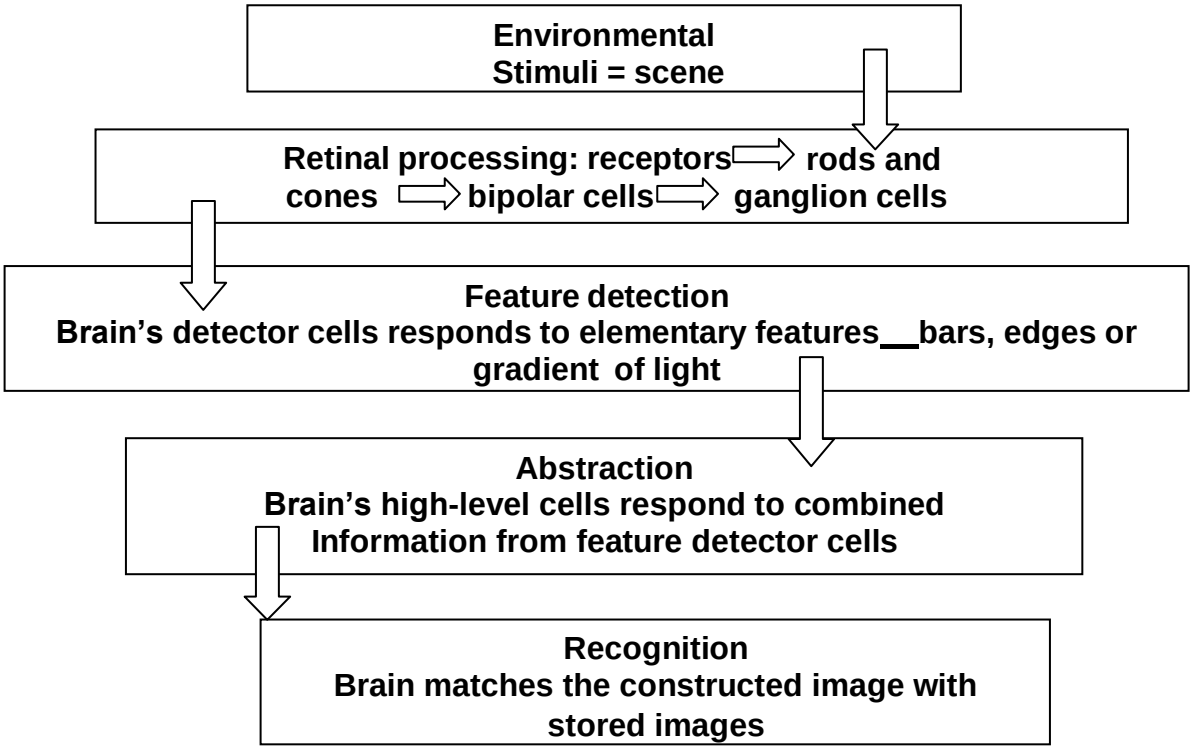
1. **Parallel processing theory of vision**
2. **Trichromatic theory of color vision**
3. **Opponent- process theory of color vision**

**I. Parallel Processing Theory of Vision**

- The brain's distinctive and natural way of processing information in which various aspects of information are processed simultaneously_ includes many brain functions such as vision; contrasts with the serial/ step- by- step processing of most computers and of conscious problem solving
- Unlike most computers, which work/ processes information instantly through step- by- step serial processing, humans do parallel processing means do several things at one time

- Our brain is capable of dividing visual information into various dimensions/ categories such as color, depth, movement etc and works on each aspect/ part simultaneously
- Visual information is processed in the following manner. i.e.
  - One looks at someone/ something
  - Information is sent to the brain
  - The component features are reassembled and,
  - In, still not a clearly and exactly known way, the scene is combined/ composed into the consciously perceived meaningful image

**Parallel Processing Theory of Vision**




**Trichromatic Theory**

- Initially by Sir Thomas Young, and later developed as Young-Helmholtz Trichromatic Theory of Color vision
- The retina contains three types of cones. Each type responds to specific range of wave length

**Hering's Opponent- Process Theory**

- The receptor cells are linked in pairs and they work in opposition to each other
- There is a black- white pairing, a blue- yellow pairing, and a red- green pairing
- If an object reflects light containing more green than red, it will stimulates the firing of the cells sensitive to green, at the same time inhibiting the firing of red- sensitive cells; the object will thus appear green
- This theory explains the phenomenon of after- image very well

**Color Vision Deficiencies: Congenital And Acquired**

- Color vision deficiencies are classified into congenital and acquired
- Congenital deficiencies are due to the inborn abnormality of cone photoreceptor cells
- Acquired deficiencies results any time after birth___occur due to the disorders that affect the eye or/ and the brain
- In both of these deficiencies, people experience colors differently from those with normal trichromatic color vision

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- Three main congenital color deficiencies are;

I.**Dichromacy**
**II.Anomalous trichromacy**
**III.Rod monochromacy**

**I. <u>Dichromacy</u>**

- Individuals with this deficiency are able to match all the colors using two primaries rather than three
- Dichromatic miss one of the three cone types

There are the following three main types of dichromacy, which are named on the basis of cone photo pigment that is missing. They are;

1. **Protanopia**
2. **Deuteranopia**
3. **Tritanopia**

- Both protanopia and deuteranopia are sex-linked i.e. inherited recessively from a gene located on the X chromosome
- If this deficiency is inherited, males (XY) will manifest it because they have only one X chromosome_females (XX) have two X chromosomes, so they will only be color deficient if the deficiency is carried on to both X chromosomes. They can pass this condition to their male offspring without being color deficient themselves **Protanopia**Red photo pigment is absent and is replaced by the medium green photo pigment due to this; people with this deficiency confuse red and green color
- See shorter wavelengths such as blue

**Deuteranopia**Also confuse red and green
It is sex- linked deficiency and effect about 1% of males and .01% of females
**Tritanopia**
Basis of this deficiency is not yet clear_ may occur due to the absence of short wavelengths such as blue
People with this deficiency are insensitive to blues and yellows and see the world in red and green
A very rare condition and occur only in .002% of males and .001% of females

**Anomalous trichromacy**

- People with this deficiency mix the primaries in different proportions
- Like normal trichromats, these people also need three wave lengths___but due to spectral sensitivities, they often mingled them up

**Rod monochromacy**

- Extremely rare hereditary condition which occurs due to the absence of cones in the eye
- As vision is dependent on the rods photoreceptors, the acuity is very weak because of the absence of cones
- Absence of cones are also responsible for poor fixation, erratic eye movements, visual fields defects and serious refractive error

**Color Blindness**

- Inability to see specific colors
- 25 of men and 2 out of 10,000 women are color blind
- Red- green color blindness; inability to distinguish red from green
- Yellow-blue; the person can not differentiate between yellow and blue
- Monochromatic color blindness; inability to perceive any color at all
- The Trichromatic theory explains this phenomenon very well

© Copyright Virtual University of Pakistan

**Every Day Experiences and Color Vision Deficiencies**

- Our daily routine is highly dependent on the efficient ability to discriminate among colors such as selecting clothes, matching paint colors etc, that requires efficient color vision___inability/ deficiency can seriously effect individual's ability to learn, to work or to move freely from one place to another
- Colors play an influential role in child's initial/ primary education because it is used to categorize the educational materials
- Good color judgment is also important as far as the occupation of the person is concerned__ essential for the painter, pilots, surgeons, military men, safety officer, dermatologists, pharmacists, chemist, buyer of textiles, food inspectors, electricians and marine navigator
- Extensively used for communicating safety information_ color coded targets are easily noticed and quickly detected

Red stands out for fire, danger, or stop
Yellow for amber
Blue indicates need for caution
Green to signal safety
Orange to communicate potential danger and
Purple to warn about for radiation hazards

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**LESSON 16**

## HEARING (AUDITION) AND BALANCE

Hearing or audition is the sense of sound perception and results from tiny hair fibers in the inner ear detecting the motion of a membrane which vibrates in response to changes in the pressure exerted by atmospheric particles within (at best) a range of 20 to 20000 Hz. Sound can also be detected as vibrations conducted through the body by tactician. Lower and higher frequencies than can be heard are detected this way only. The main features regarding ear are:

- Ear is regarded as the organ of hearing.
- Like our other senses, our hearing or audition, is highly adaptive
- Sense of motion and balance is regarded as the main and important function of the ear
- Organisms have the ability to hear a wide range of sounds with different frequencies (ranging from higher to very low faint voice) but more importantly we can easily detect different voices of people whom we know or met
- For this, the important question is how we do it? How the transformation of sound waves into neural messages takes place?

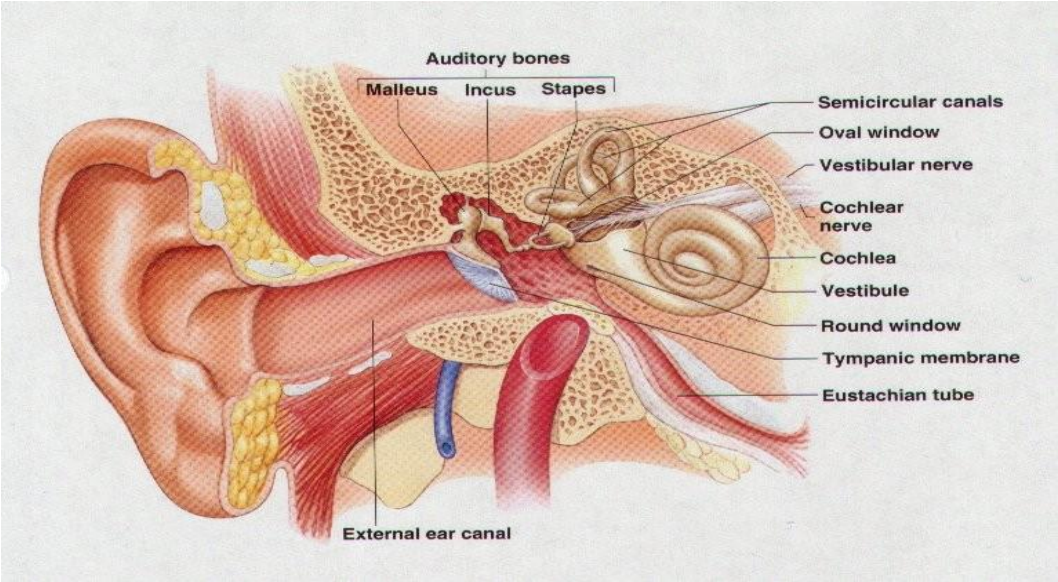
**Some Interesting Facts about Hearing**

- Animals have the capability of hearing more sounds than humans
- Dolphins have the best sense of hearing among all animals
- When people go up high in the mountains, the changes in pressure cause the ear to pop
- Babies can get ear aches because of the milk deposit in the eustachian tube, which helps the bacteria to grow there and may cause problems later in life
- Children can hear more noises than adults, as their ears are more sensitive than that of adults
- Ear aches result when too much fluid causes pressure in the eardrum often occur due to allergies, virus or some sort of infection

**The Human Ear: Anatomy/ Structure**

The primary apparatus of hearing i.e., the ear is divided into three parts

1. The outer ear
2. The middle ear
3. The inner ear




**1. The Outer Ear**

- The outer ear serves the function of collecting the sound waves from the environment to the internal portions of the ear. It is shaped like a reverse megaphone
- It also plays an important role in locating the sound direction from which it originates

**Auditory Canal**

- When sound waves originate from the vibrating object, they then pass through the auditory canal, which is a tube like passage through which the sound travels to the inner part of the ear or " the eardrum".

**Eardrum**

- The part of the ear that starts vibrating when sound waves strike/ hit it.
- Its intensity of vibration is dependent on how intense the sound waves are___the more intense the sound, the more intensely it vibrates.
- These vibrations are then transmitted to the " middle ear".

**2. Middle Ear**

- A tiny chamber between the eardrum and cochlea containing three bones -----the hammer, the anvil, and the stirrup, which transmit vibrations to the oval window.
- These three bones have only one function, i.e. to convey/ transmit the message to the inner ear.

These bones are also effective in the sense that they strengthen the stimulus (vibration) so that it can be easily heard. Information (Vibration) Travels Through These Three

**Bones**

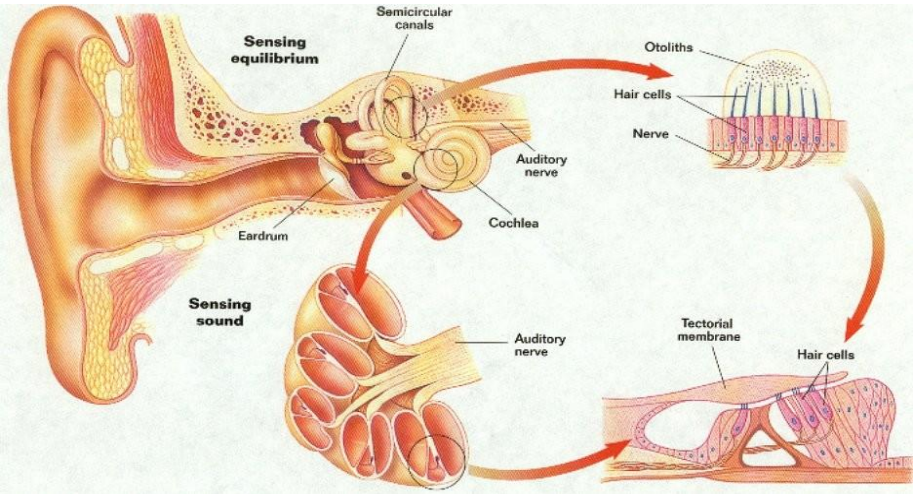
Hammer ➡ Anvil ➡ Stirrup ➡ Oval window

**Oval Window**

- A membrane between the middle and the inner ear that increases the strength of the stimulus (vibration) while transmitting them.
- Serves as the amplifier so that tiny or hiss voices could be heard, which otherwise may remain unnoticed.

**3.** Inner Ear

- The innermost region/ part of the ear that contains important structures such as cochlea, semi circular canals and vestibular sacs, and that changes/ transforms the sound waves into the neural impulse.
- Organs that are present in it help us to determine in locating our position and how we are moving in space.
- In the inner ear, the sound enters into the cochlea a coiled, bony tube filled with the fluid that receives information (sound) from the oval window or through bone conduction. The sound waves that reach here help in triggering the nerve impulse. **Basal Membrane**
- Inside the cochlea is the basal membrane passing from the middle of cochlea a structure that divides the cochlea into the upper and lower chambers/ parts.
- This basal membrane is covered/ surrounded by the tiny hair cells that are bent on the vibration, so that neural message reaches the brain without any hindrance or difficulty; helps to transmit information to the temporal lobe's auditory region.
- Another means of hearing sound besides cochlea is through bone conduction. As ear is directly connected with the skull's bones, the cochlea is then able to pickup subtle voices (such as one's own voice). This is largely due to





Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

bone conduction. Why one's own voice seems different to one's self than to others is due to this phenomenon. This may also occur because voice reaches one's self through the air and also through bone conduction.

**Sound and Its Physical and Psychological Aspects and Impacts**

- Sound is the primary stimulus for hearing.
- Sound actually refers to the physical movement of air molecules in regular and wave like pattern/ sequence.
- When an object creates/ produces sound, it results in the back and forth vibration of its surface, creating sound waves in the surrounding air. These dense and thin sound waves serve as the stimulus for the ear/ for hearing process.
- Sound waves that are being produced differ in their intensity, amplitude, frequency and complexity they afterwards produce corresponding dimensions of sound. i.e. pitch, volume and timbre.

**Frequency**

- Frequency is the prominent feature/ characteristic of sound and refers to the number of complete wave lengths/ crests that occur or pass a point in each second.
- In low frequency of sounds, there are relatively fewer and slower up- and- down wave patterns per second_ these low frequencies are then translated in what is called " pitch".

**Pitch**

- Primarily related with the frequency and refers to the quality of sound that is being produced by the frequency of the sound wave; expressed in cycles per second the trait that makes the sound "high" or " low".
- The lowest and highest frequencies that humans can hear range from 20 cycles per second to 20,000 cycles per second.

**Volume/ Intensity/ Loudness**

- Volume or loudness can be described as " strong" or " weak"__ determined by the amount of pressure difference between the compressed part of the sound wave and the prominent part
- Waves that have low peaks create soft sound as compared to the waves with higher peaks
- The range within which humans can hear is extensive measured in unit called decibel (db).
- If the sound exceeds 120 decibels then it become painful to human ear.

**Timbre**

- When fundamental tones are combined with the weaker tones, they are then to be known as over tones.
- Partials and harmonic tones are the audible tones that help to make up timbre quality of sound determined by the complexity of sound waves
- The difference in quality or timbre is determined by the complexity and arrangements of the overtones that any instrument/ object produces which largely depends on its design and material from which it is made.

**Theories of Hearing/ Theories of Pitch Perception**

**Place Theory of Hearing**

- The most frequent question that comes to mind is that how can our brain sort out the sound waves of different frequencies and intensities without any hindrance or problem?
- The answer lies in the studies done in this regard. They show that the basal membrane (inner most region of the ear near the cochlea) and its associated areas are most sensitive to high pitched frequency sounds, and the area near the cochlea is more sensitive to low- frequency sounds.

© Copyright Virtual University of Pakistan

- The findings of these studies led to the formation of place theory of hearing, which says that different areas in the basal membrane respond to different frequencies of sound; pitch corresponds to the location of greatest stimulation along the basilar membrane.
- The most important shortcoming of this theory is that it is unable to explain the process of hearing, i.e. sounds of low frequencies also trigger the neurons in the basal membrane and its associated areas.
- Due to this incomplete explanation of auditory phenomena, an additional explanation came in the form of " frequency theory of hearing".

**Frequency Theory of Hearing**

- This theory explains that the entire basal membrane acts as a microphone, vibrating in response to sound i.e. activation occurs in the whole area in response to the vibration.
- The theory tends to explain that the nerve impulses in that region are directly connected/ associated with the frequencies of sound to which they are exposed_ so the higher the pitch of the sound, the more the nerves trigger and send messages to the brain.
- Both theories are important and useful in the sense that they provide the accurate description of the whole auditory phenomena.Specifically, place theory gives a better explanation of processing the high- frequency sounds and frequency theory tells us that how the low- frequency sounds are encountered and dealt with.

**Auditory Information Processing**

- After leaving the ear, the auditory message is directly transmitted to the auditory cortex of the brain with the complex series of neural interconnections
- Within the cortex, there are neurons that respond to selective sounds having specific features there are neurons also that respond only to specific pattern/ sort of sounds and not to the intermittent sounds.
- Auditory cortex provides us with the " map" of sound frequencies that furnishes our response to the environmental stimuli.**Auditory/ Hearing Damage**
- Auditory damage occurs largely due to the following three major reasons besides some others:

1. Prolonged exposure to loud noise
2. Severe/ hard blow to the ear sensitive regions
3. Old age

(Others include illness, or damage to the middle or inner ear)

1. Prolonged Exposure to the Loud Noise
    - It is also called stimulation deafness
    - It includes various types of loud tones/ sounds such as speech, music, machinery,
    - and other complex sounds
    - The damage is irreversible as the receptors which are damaged do not regenerate
    - Large amount of damage occurs between the frequency of 1000 Hz to 2000 Hz

**2. Severe/ Hard Blow to the Ear Sensitive Regions**

- Tinnitus refers to a "ringing in the ears"_____it is usually a high-pitched tone.
- The origins of it may lie in either extreme stimulation (above 130 db) or in vascular
- blockage, or in muscle spasms i.e., in the tympanic muscles.

**3. Old Age**

- As people progress towards their old age, their hearing capability weakens in higher frequency ranges. This is primarily due to an over all degeneration .
- Environmental factors also play role in causing auditory damage along with old age.

**Types of Hearing Impairment**

1. Conduction Deafness: problem in conduction of air vibrations to the cochlea; the bones in the middle ear do not function properly.
Treatment: microsurgery for replacing the affected bone with an artificial one.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

2. Nerve Deafness: deafness caused by a damage to the neural mechanism that creates nerve impulses or relays them to the auditory cortex; deafness may also be caused by a damage to the auditory cortex itself.

**Balance and the Role of Ear**

- Several ear structures are related with the sense of balance of the person much more than playing their roles in hearing phenomena
- Three tubes or the semi circular canals (inner ear) contain the fluid that moves when the head moves; the rotational or angular movements are signaled to the brain.

The semicircular canals contain otoliths that are tiny motion- sensitive crystals. The otoliths can sense the pull on our body exerted by gravity, as well as that by the acceleration of forward, backward, or up-and-down motion. When the person moves these crystals also move. Thus the system is familiar with the feeling in case of different moves, and constantly strives for a perfectly balanced position; the otoliths can sense immediately.

© Copyright Virtual University of Pakistan

**LESSON 17**

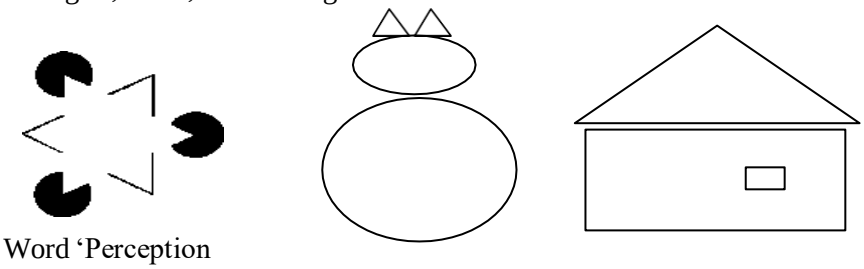
## PERCEPTION I

"Perception is not determined simply by stimulus patterns; rather it is a dynamic searching for the best interpretation of the available data."
Gregory (1966)

**The process of selecting, organizing, and interpreting stimuli; it includes identification, recognition, and images of the stimulus in question; previous experiences have a role to play in it.**

Perception is holistic. Perception is the mental organization and interpretation of sensory information. The Gestalt psychologists studied extensively the ways in which people organize and select from the vast array of stimuli that are presented to them, concentrating particularly on visual stimuli. Perception is influenced by a variety of factors, including the intensity and physical dimensions of the stimulus e.g. such activities of the sense organs as effects of preceding stimulation; the subject's past experience; attention factors such as readiness to respond to a stimulus; and motivation and emotional state of the subject. Stimulus elements in visual organization form perceived patterns according to their nearness to each other, their similarity, the tendency for the subject to perceive complete figures, and the ability of the subject to distinguish important figures from background.

If you look at the following figures you may see two overlapping triangles, a cat, and a hut. Why don't we see them as different separate triangles, ovals, and rectangles???



Different Connotations of the Word 'Perception

- Process, act, or faculty of perceiving.
- Effect or product of perceiving.
- Represents what is being perceived.
- Awareness of something with the help of sense organs/ sensations.
- Feelings, attitudes, opinions, and images people possess about different places, people, and environment of various kinds.
- Immediate or intuitive cognition or comprehension__ capacity to "analyze"/ "see" with the help of experience.
- The ability to process or use information coming/ received from the senses
- Process of classifying sensations.

**A Comprehensive Definition of Perception** would be that of a cognitive process involving:

- Acquisition,
- Interpretation,
- Selection, and
- Organization of sensory information,

that involves past experiences as well as neurological processes that affect recognition and interpretation.

**Gestalt Psychology**

The Gestaltists made an important and lasting contribution to our understanding of perceptual processes. They did show that certain, explicit, factors do affect the way in which incoming stimuli are organized into figures.

- It developed as a reaction to structuralism in the early 1900s.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- In contrast to the structuralist approach of breaking down conscious experience into elements, or focusing upon the structure of mind, the Gestalt school emphasized the significance of studying any phenomenon in its overall form.
- **Gestalt means "Configuration".**
- Gestalt psychology emphasized that the **"WHOLE"** is more than the sum of its parts, and it is different from it too.
- Concentrated on how people consider individual elements together as units or wholes.
- The concept of Gestalt applies to everything, objects, ideas, thinking processes and human relationships.
- Any phenomenon in its entirety may be much greater than when seen in a disintegrated form.

**Max Wertheimer**

- The founder of Gestalt psychology; Kurt Koffka and Wolfgang Kohler followed Wertheimer.
- Wertheimer became aware of a form of apparent motion that was called **"phi phenomenon".**

**Phi phenomenon** = when two lights are in close proximity to each other, flashing alternately, appear to be one light moving back and forth; therefore the whole was different from the separate parts.

- Movement is perceived whereas it never occurred.
- Explanation of phi phenomenon led to a separate school of thought that had deep rooted impact on learning, ethics, and social psychology.
- We perceive experiences in a way that calls for the simplest explanation, even though reality may be entirely different. We tend to organize our experience so that it is as simple as possible. = **Gestalt Law of Minimum Principle.**
- Gestalt Psychology maintained that the main task of psychology is to explain attitudes, events, behaviors etc as 'complete' or 'whole' not in terms of elements or disintegrated parts; the overall impact is what makes perception.

**Figure and Ground**

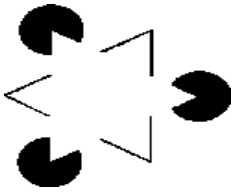
- How do we perceive a figure against a background?
- Certain processes are involved in distinguishing a certain figure or object from a ground.
- We do not just passively receive what is reflected on to our retinas; we try to give a meaning to what we see, and therefore 'understand' our sensations

**Gestalt Laws of Perceptual Organization**

**Organizing raw sensory stimuli into meaningful experiences involve "cognition", a set of mental activities that includes thinking, knowing, and remembering. Knowledge and experiences are extremely important for perception, because they help us make sense of the input to our sensory systems.**

- We organize our experiences according to certain rules, in a simple way:

I. The Law of Closure.
II. The Law of Proximity.
III. The Law of Continuity.
IV. The Law of Similarity.
V. The Law of Simplicity.
VI. The Law of Common Fate.
VII. The Law of Enclosure/ Connectivity.



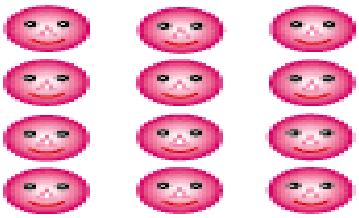
**I. Law of Closure**

The perceptual tendency to fill in the gaps and complete the contours; perceiving the disconnected parts as the whole object. We mentally close the gaps and perceive the figure given below as wholes.

This tendency enables us to perceive whole objects from incomplete and imperfect forms

**II. Law of Proximity**

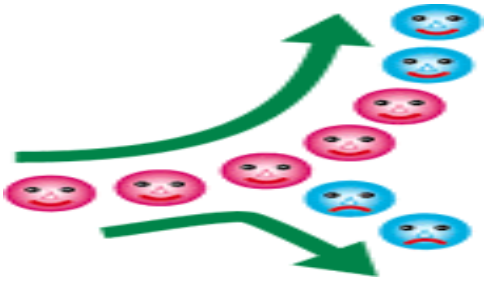
We have the perceptual tendency to group together the auditory and visual events that are close or near one another; they are perceived as a coherent object. In the figures below, we see that on the left, there appears to be three horizontal rows, versus three columns on the right.



**III. Law of Continuity/ Good Continuation**

We tend to group the stimuli into smooth and continuous patterns or parts. Humans have a capability to continue contours whenever the elements of the pattern establish an implied direction.

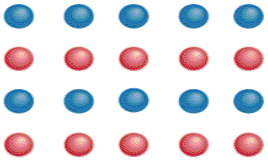
In the drawing below, we see a curved line with a straight line running through it. In the other, we do not see the drawing as consisting of the two segments and perceive it as a continuous pattern.



**IV. Law of Similarity**

The tendency to perceive objects, patterns or stimuli which are similar in appearance as a group; parts of the visual field that are similar in color, light, texture, shape, or any other quality are seen as one.

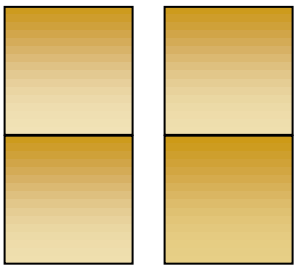
Elements that appear similar will be perceived as part of the same form/ sequence; there seems to be a triangle in the circles and the smaller triangles are perceived as one group.



**V. Law of Simplicity/ Law of Prägnanz**

People intuitively prefer the simplest, most stable, straightforward, and basic form of possible organizations**.** A stimulus is organized into as good and simple a form as possible; 'good' refers to **symmetrical, simple, and regular.**

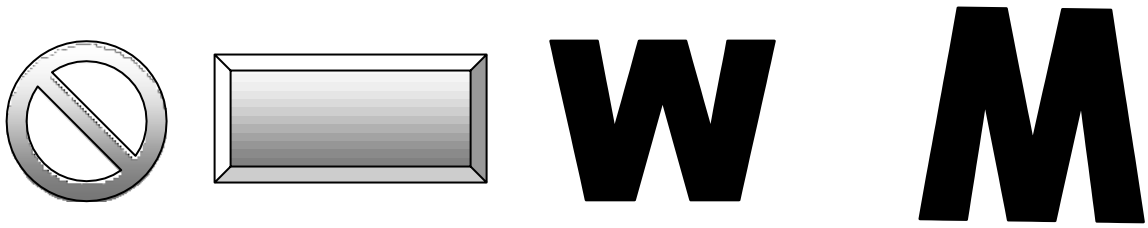
In the following figure you tend to see four squares rather than ends of logs of wood or biscuit packs.



© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

In this one you tend to see two separate shapes rather than different separate parts joined together.



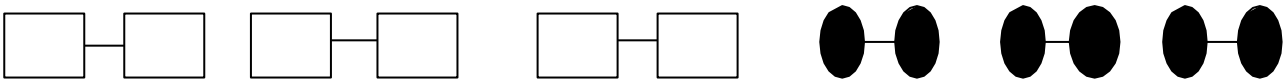
In the figure on the right you see a diamond inside black lines and not as an 'M' under a 'W', which actually is the case.

### VI. Law of Common Fate

It is the tendency to group together the objects that move together, or seem to move together, and in the same direction**.** When they are being seen in actual motion, humans' will mentally group them as moving in the same direction. Because of this we often see flocks of birds or herds of cattle, or boys or girls playing together as one group

### VII. Law of Enclosure/ Connectivity

It is our perceptual tendency to perceive features/ patterns, such as dots or objects as a single unit when uniform and linke; lines, dots, areas, objects etc are perceived as single or same unit when combined or linked.

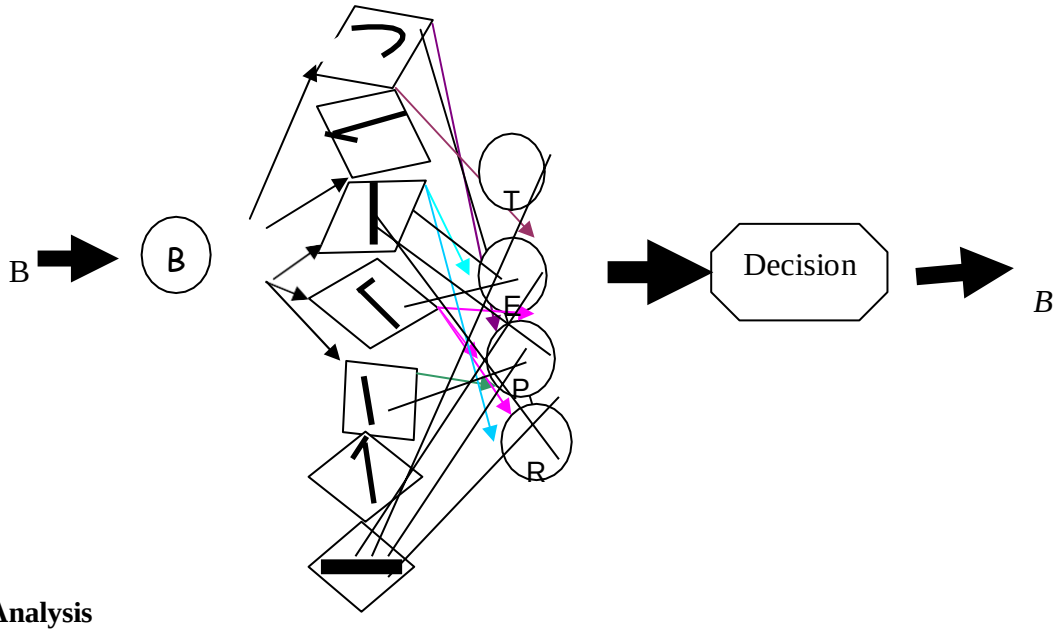


**Feature Analysis**

- The process of perceiving a shape, pattern, object, or scene by attending to the individual elements making it up.
- The Gestaltist emphasis was upon the way we interpret the individual elements as a pattern/ sequence which has some sort of meaning; The organized or well formed sequence gives a different percept or meaning as compared to when separate parts or elements are observed.
- The approach of feature analysis looks into the individual components in order to understand the entire nature of what we perceive.
- The feature analysis starts with the activation of the neurons in the brain, as they are sensitive to particular spatial configurations such as circles, angles, edges, curves etc. Since these neurons are individually present, it is taken to be the evidence of the idea that any pattern, sequence or component can be broken down into simpler events or parts e.g. the letter "P" is the combination of a vertical line, and a semi- circle; or an "X" is a combination of a "v' on an inverted "V".
- 150 million objects can be produced out of just 36 fundamental components.

**In summary**

- Stimuli are first broken down into their component parts; these parts are then compared to data stored in our memory in order to find a match; the stimulus is identified and recognized once a match is found.
- The feature analysis starts with the activation of the neurons in the brain, as they are sensitive to particular spatial configurations such as circles, angles, edges, curves etc. Since these neurons are individually present, it is taken to be the evidence of the idea that any pattern, sequence or component can be broken down into simpler events or parts e.g. the letter "P" is the combination of a vertical line, and a semi- circle; or an "X" is a combination of a "v' on an inverted "V".
- 150 million objects can be produced out of just 36 fundamental components.
- The figure below shows the process of how we perceive a 'B' as a 'B'.




**Steps in Feature Analysis**

a. Identify the feature, shape of any object, of which the image falls on the retina.
b. Combine/ gather object in some form/pattern so that some sort of representation can be formed.
c. In the final stage, we identify/ compare each component/element/ object with the help of past experiences or memories.

**Top- Down and Bottom- Up Processing**

'Top- Down' processing refers to the perceptual phenomenon guided/ and influenced by;

- Knowledge,
- Experience,
- Motivation and
- Expectation

A-e- yo- g-o - ng t- sc—l?

Top- down processing is guided by the higher mental/ knowledge faculty such as meaning of the sentence of which the important letters are missing individuals are able to understand the meaning of the sentence and fill in the gaps by using their prior experiences and memories.

**Bottom- Up processing refers to the**

Process of recognizing and processing of information about the individual component/ part of the stimulus.

Humans will be unable to identify the object component unless they are able to recognize and understand the shape and features of each element that makes it up; in the sentence "A-e- yo- g-o - ng t- sc—l?" you will not be able to identify the sentence unless you recognize the individual shapes making up the overall form of the letters.

Top- down and bottom- up processing occur simultaneously and have an interaction with each other, which makes it possible to understand the complex perceptual phenomena.

The process of perception involves the environmental stimuli, which is interpreted, analyzed and integrated with the help of past experiences.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**LESSON 18**

# PERCEPTION II

## Depth Perception

- **Depth perception is the perceptual tendency/ ability to see objects in three dimensions, although the image that falls on the retina of the eye is two-dimensional; thus enabling us to perceive distance.**
- "Depth Perception" is the skill to perceive depth and distance e.g. we are able to judge the distance of the incoming car, height of the cliff or of a roof top, size of an object, weight of a sand bag etc, in a glance, just by having a look at it.
- This sort of perception is largely due to the fact that we have two eyes which are slightly distant from each other, so the brain integrates the two slightly different images and combines them into one consolidated view; However the differences in images or 'Binocular Disparity' is not ignored by the brain.Eleanor Gibson and Richard Walk discovered this phenomena in 1960 by using the miniature cliff with a drop- off covered by sturdy glass.
- Placed the young infants of 6- 14 months at the edge of visual cliff. Their mothers motivated them to crawl on the glass, but most of them refused to do so, indicating that they could perceive depth this may be due to the fact that they learned to perceive depth in the crawling age.

**Physiological depth cues** are formed by our visual system with the help of muscular movements or adjustments. It is yet difficult to tell how these cues contribute to the depth perception. The adjustments, which the eyes and eye muscles make, are assumed to be of weak nature. These include: **accommodation and convergence.**

**The psychological depth cues**: are based on the interpretation and analysis of the retinal image that is caused by the working of the visual cortex in the brain. **Depth Cues to Perception**

There are two important cues for the perception of depth. These include:

I. **Monocular cues for depth perception.**
II. **Binocular cues for depth perception.**

## I. Monocular Cues for Depth Perception

- Also known as " pictorial cues" because painters use these cues in order to tell about depth; these lead to three- dimensional information.
- These generate the ability to judge distance and depth such as linear perspective and interposition with only one eye.
- Depth and location can be perceived with single eye also.

### *i. Relative motion*

- **A monocular cue for perceiving depth and distance in which when we move, the objects at different distances change their relative positions with the visual image____ with those that are closest seem to be moving faster.**

### *Relative Size*

The monocular cue for depth perception in which we assume that the two objects are similar in size, the one that make the smaller image appears to be more distant.

### *Interposition*

A monocular cue for perceiving depth in which the nearer objects partially block/ hinder our image of the more distant objects.

### *Relative Height*

- A monocular cue to depth perception and distance in which higher objects appear to be more distant.
- Can be explained by doing practically as we are moving in car, train, bus etc. Fixate your gaze at some point (fixation point) say a tree, the objects that are closer than the tree seems to be moving backwards and also seem to move faster. The objects that are beyond the fixation point

seem to move along but at lower speed and seem as farther away. Brain has the capability to compute these speed and distance clues in order to perceive distances.

***Linear Perspective***

- The monocular cue for the perception of depth and distance in which two parallel lines seem to be converging at some point indicating increasing distance.
- Rail road tracks, highway tracks etc appear to be converging at some distance and so, contribute to the rail- crossing accidents by making people to over estimate the train's distance: a massive train size makes the perception that it is moving slowly.

***Relative Brightness***

A monocular cue for depth perception in which the dimmer objects seem to be more distant.
Nearby objects seem to reflect more light than the farther ones. When going for a walk in a thick-fog morning, one may judge distance wrongly as due to fog the objects may be perceived to be farther than they do on the clear shiny morning. That is why they contribute to increasing accidents.

***Light and Shadow***

Perceptual phenomenon for the perception of depth and distance in which when light strikes an irregular object, certain parts are brightly illuminated whereas others lay in shadow. These shadowed parts tell us about the depth of the parts concerned___ painters use this phenomenon when portraying something on the canvas such as human face and its various structures.

***Texture Gradient***

**An American psychologist, James J. Gibson was the ever first individual who emphasized the importance of texture gradient for perceiving depth.**
Mainly applied to textures (structures) of surfaces and arises when we observe the surface when in slant rather than from a straight angle or from above. **Pictorial Cues for Depth Perception**

Monocular cues are used for the perception of depth and distance

- We can get an extensive 3-D impression in 2-D pictures on a flat surface

**Atmospheric Perspective**

Particles and vapors in the atmosphere result/ cause the scattering of light that makes a very distant surface appear hazy.
The other techniques they use are;

a. **Occlusion:** near objects overlap far surfaces.
b. **Relative height and size:** objects further away from the horizon seem nearer and larger objects seem closer.
c. **Linear perspective:** provides a strong cue to distance that can effect perception.
d. **Shading:** provides a cue for shape rather than distance.

**Motion Parallax**

The change in the position of the retinal image with the side-to-side movement of the head; providing a cue to the distance.
Occurs when objects are at different distances and we are also moving at different rates when in motion. The object nearer to the person appears to move backward but the more distant objects appears to be static as we move. The rate of an object's movement provides a cue to its distance.
Although motion plays an important role in depth perception, the perception of motion is an important phenomenon in its own right. It allows a baseball outfielder to calculate the speed and trajectory of a ball with extraordinary accuracy. Automobile drivers rely on motion perception to judge the speeds of other cars and avoid collisions. A cheetah must be able to detect and respond to the motion of antelopes, its chief prey, in order to survive.
How does your brain know which movement on the retina is due to your own motion and which is due to motion in the world? Understanding that distinction is the problem that is faced by psychologists who want to explain motion perception.
One explanation of motion perception involves a form of unconscious inference. That is, when we walk around or move our head in a particular way, we unconsciously expect that images of stationary objects will

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

move on our retina. We discount such movement on the retina as due to our own bodily motion and perceive the objects as stationary.

Psychologist James J. Gibson's explanation of motion perception was too complicated. He reasoned that perception does not depend on internal thought processes. He thought, instead, that the objects in our environment contain all the information necessary for perception e.g. aerial acrobatics of a fly. Clearly, the fly is a master of motion and depth perception, yet few people would say the fly makes unconscious inferences. Gibson identified a number of cues for motion detection, including the covering and uncovering of background. Research has shown that motion detection is, in fact, much easier against a background. Thus, as a person moves in front of you, that person first covers and then uncovers portions of the background and this reflects movement.

People may perceive motion when none actually exists. For example, motion pictures are really a series of slightly different still pictures flashed on a screen at a rate of 24 pictures, or frames, per second. From this rapid succession of still images, our brain perceives fluid motion—a phenomenon known as stroboscopic movement.

**Binocular Cues for Depth Perception**

- The ability to judge distance and depth such as retinal disparity and convergence with two eyes, which are slightly apart from each other.
- Our eyes are slightly apart from each other having a distance of about 2 ½ inches or 6 cm, so the images that fall on the two retinas are slightly different.
- These two slightly different images are then integrated and processed by the brain, but it does not ignore the possibility of difference in images_ known as " binocular disparity".

**i. Retinal/ Binocular Disparity**

- The cue to depth perception, the greater the disparity (difference) between the two images the retinas receive of an object, the closer the object seems to us this disparity allows the brain to judge distance.
- This can be proved with the help of simple experiments done by you. i.e. hold a pencil directly in front of your nose; the retinas of yours will receive different views/ images. Now make them closer firstly to one eye and then to the other. At greater distance, the disparity is smaller.
- This discrepancy of the two images that falls on the retinas varies with respect to the distance from which the object is being perceived used for determining distance e.g. if we see two objects in which one is considerably closer than the other, the retinal disparity will be greater and we perceive the greater depth between the two.
- On the contrary, if the two objects were at similar distance, the retinal disparity will be minor/ smaller and we perceive the objects at similar distance.
- Movie directors use these phenomena in order to create depth illusions by using two cameras, spaced highly apart, to produce slightly different images, each image for each eye.
- In 3-D movies, the two images are presented simultaneously which produces a double image; special glasses are worn for this purpose to provide us with the genuine sense of the depth phenomena.**Convergence and Accommodation**

**A binocular cue for depth perception that illustrates, that when we assume that the two objects are of same size, the one that produces a relatively smaller image will be perceived as distant.**

It is a neuromuscular cue in which the more the eyes converge inwards, the nearer the object seems.

The eye lens becomes thicker due to the activation of ciliary muscles to focus on the nearer object____the degree of activation of ciliary muscles gives us the cue to depth.

Convergence and accommodation are only effective at close distances and can tell only the distance to a single object in the visual field.

**Selective Attention**

- Perceptual process in which the person chooses the stimulus which he is interested in; paying attention to only the stimulus of interest.

- Humans give attention to the objects that are exceptionally bright, loud, novel, or high in contrast we are also motivated to give attention to the objects that are meaningful as well as relevant e.g. if we are thirsty, we will give more attention to water and the like.
- Advertisers extensively use this phenomena of selective attention using bright contrasts, high volumes and more rapid speech than usual and most importantly broadcast at that time when people are particularly sensitive to their content e.g. the food- related ads are shown at lunch or dinner times.**Stroop Task**
- Difficult and frustrating exercise in which one is confronted with two powerful and competing stimuli the meaning of the word and the colors in which they are written e.g. I LIKE YOU, if written in red ink.
- In these cases, it has been observed the people pay more attention to the reading/ content of the stimulus rather than the color from which it has been written (because they are experienced with reading than with naming colors).

**b. Dichotic Listening**

- A procedure in which individual wears earphones in which different messages are sent to each ear at the same time.
- After hearing the stimuli, the individual is asked to reproduce them aloud as it comes to one ear: " shadowing".
- In this process, individual can easily identify the talking person as man or woman and whether change in voices takes place during the message or not.
- Experiments suggest that although people pay full attention to one stimulus at a time, they also pay some level of attention to the other stimuli as well; it shows the possibility of learning something although being unaware of it.The phenomenon

of selective attention is of particular importance for the people who have to constantly monitor e.g. such as pilots, traffic controllers, rescue workers, and firemen.

**Form-Perception**

- A perceptual phenomenon in which we perceive the shape, form or pattern of any object___give name to objects as house, tree, table, chair etc
- Mainly it involves two important principles:
- Figure- ground relationship
- Contours

**Figure- Ground Relationship**

- Our perceptual tendency to see objects with the foreground as well as the background the object is being recognized with respect to its back ground e.g. Black board and chalk, car parked in front of a wall, painting against the wall etc.
- Contrasting figures and their grounds are early and quickly perceived
- It is a vise- versa relationship i.e., figure cannot be observed without a ground and ground cannot be recognized without having a figure.

**Contours**

- Perceptual phenomenon in which we are able to maintain a difference of the form from its background due to the perception of contours e.g. In observing the paper, which has two colors, white and black there is no contour at all. But as it becomes lighter rather than becoming dark, a person can simply identify the difference. And when the difference is much apparent, we simply divide into two parts as light and dark and skip different shades as lighter or darker where brightness changes abruptly, we perceive contours.

**Motion Perception**

- Motion simply means the relative/ progressive change in the position of the person in space with time. Objects cannot be perceived fully when in motion. It is also difficult due to the fact that our eyes cannot follow the moving object with great precision and efficiency all the time.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**Relative Motion**

- While looking at moving automobiles, the ones that are nearer seem to be moving more rapidly than those at a moderate distance, and those that are more distant seem to be moving along.
- Relative motion can also be interpreted through experience, when one can fairly tell the speed of a train or a bus by noticing outside the window as to how rapidly the nearby objects are passing.

**Radical Motion**

- A movement directly towards or away from the observer. Continuous and radical motion is being perceived when the retinal image continuously changes.
- The change in size of the retinal image gives the perception of motion.

**Perceptual Constancy**

- A perceptual tendency to perceive object as unchanging in size, shape, color, lightness etc., even though changes in illumination and retinal image do take place.

There are a number of constancies identified by psychologists

I. **Lightness Constancy**: Means that the object's lightness or brightness remains the same in spite of changes in illumination.

Lightness constancy illustrates an important perceptual principle: Perception is relative. Lightness constancy may occur because the white piece of paper reflects more light than any of the other objects in the room—regardless of the different lighting conditions. Another explanation, proposed by 19th-century German physiologist Hermann von Helmholtz, is that we unconsciously take the lighting of the room into consideration when judging the lightness of objects.

II .**Color Constancy**: Closely related with lightness constancy and refers to the perception of color of the object remaining the same in spite of changes in lighting conditions.

Color constancy can be seen if one has worn a pair of sunglasses with colored lenses. In spite of the fact that the colored lenses change the color of light reaching your retina, you still perceive white objects as white and red objects as red. The explanations for color constancy parallel those for lightness constancy. One proposed explanation is that because the lenses tint everything with the same color, we unconsciously "subtract" that color from the scene, leaving the original colors.

III. **Shape Constancy**: Means the shape of the object remains the same in spite of some changes in its orientation.

To understand shape constancy, hold a book in front of your face so that you are looking directly at the cover. The rectangular nature of the book should be very clear. Now, rotate the book away from you so that the bottom edge of the cover is much closer to you than the top edge. The image of the book on your retina will now be quite different. In fact, the image will now be trapezoidal, with the bottom edge of the book larger on your retina than the top edge. (Try to see the trapezoid by closing one eye and imagining the cover as a two-dimensional shape.) In spite of this trapezoidal retinal image, you will continue to see the book as rectangular. In large measure, shape constancy occurs because your visual system takes depth into consideration.

IV. **Size Constancy**: refers to our ability or tendency to perceive objects as remaining of the same size despite having distance from the observer.

When an object is near to us, its image on the retina is large. When that same object is far away, its image on the retina is small. In spite of the changes in the size of the retinal image, we perceive the object as of the same size. For example, when you see a person at a great distance from you, you do not perceive that person as very small. Instead, you think that the person is of normal size and far away. Similarly, when we view a skyscraper from far away, its image on our retina is very small—yet we perceive the building as very large.

**Visual Illusion**

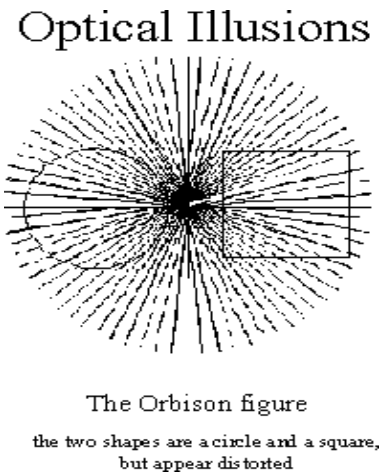
- Also known as optical illusion.
  Illusion is misperception, or false perception.
- It is when the physical stimulus constantly and persistently produces error in perception.
- There are various types of illusion of which the most famous are as follows;

**i. Muller- Lyer Illusion**

The visual illusion in which the two lines of the same lengths appear different because of the change in position of arrows at each end of two lines arrows pointing out appear shorter than the arrows pointing inwards.

**Causes of Illusions**

Sensory deficits and defects
Readiness and expectation
Atmospheric variables
Effect of drugs
Artistic manipulation




© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**LESSON 19**

# ALTERED STATES OF CONSCIOUSNESS

## Significance of Wakefulness, Sleep, and Fatigue

**Wakefulness is the productive part of our life. At the same time sleep is also an essential aspect. When we are awake, we are consuming our physical energy, and after some time we begin to experience fatigue. All these are the various faces of consciousness .Psychologists agree that we may experience different states of consciousness at different times of the day.**

## Consciousness

- The awareness of the sensations, thoughts, feelings and emotions, events, and surroundings that are experienced by a person. Consciousness is the subjective experience and understanding of both the environment around our private internal world, unobservable to outside and us. The nature of consciousness spans several dimensions. It can range from our perceptions while wide-awake to the dreams we have during sleep, with wide variation in how aware we are of outside stimuli. Some psychologists argue that 'consciousness' is a term that should be applied even to mental experiences, which we are not aware of.

Consequently, some psychologist argue that the definition of consciousness ought to be expanded to include all mental experiences, whether we aware of them.

Altered States of Consciousness

The states when an individual is either fully or partially unaware of the sensations, thoughts, feelings and emotions, events, and surroundings that are experienced by a person; this may be due to various reasons.

## Consciousness is a continuum

Total conscious ——————————————————————— Unconsciousness

The Study of Consciousness Has Long Been in Question

**In the olden times it was not possible to study this phenomenon in a scientific manner. Today a number of scientific techniques are available for assessing, testing, judging, and analyzing consciousness and its altered states e.g. EEG.**

## Varied States of Consciousness

- Sleep
- Dreaming
- Hypnosis and Meditation
- Drug induced states

## Characteristics of the Variations in States of Consciousness

- Affected sensations.
- Impaired thinking: may become shallow, superficial, illogical and irrational.
- Altered emotional response; that may affect personal relationships.
- Abnormal perceptual processing; the sense of time and space may suffer.
- Impaired physiological processes.

## Sleep

- A state of total or partial unawareness ranging from slight wakefulness to light tranquility, to nearly total detachment from the external world.
- Sleep is the time of rest and rejuvenation for the body.
- The muscles and the nerves relax.

© Copyright Virtual University of Pakistan

- The body recharges its energy for the hours of work to come the next day.
- People may need a siesta in the afternoon too, depending upon the climate, culture, age, and their health status.**The Stages of Sleep**

OStage- 1

OStage- 2

OStage- 3

OStage- 4

- These stages move in cycles of about 90 minutes duration each.
- The person passes through regular transitions between these stages.
- The sleep becomes less and less deep as the night passes.
- These stages can be studied through an electroencephalogram (EEG).

**Electroencephalogram (EEG)**

- An apparatus/machine that measure records and displays electrical activity within the brain of a person.
- Brain wave activity, or electrical charge, is recorded in the form of a graphic pattern.

***Stage-1 Sleep***

- The initial stage when one is in transition between wakefulness and sleep.
- The brain waves during this phase are quite rapid and low-voltage.
- In the beginning of this stage one does not dream, although photograph like images may appear.
- Heart rate is elevated and irregular; breathing is rapid, and the blood pressure high.
- Rapid eye movement takes place.

***Stage-2 Sleep***

- A level of sleep deeper than stage-1.
- The wave pattern becomes more regular, that may momentarily show sharp peaks, or waves that are sharply pointed, called ‘ sleep spindles’.
- If a person is at stage-2 sleep, it becomes difficult to wake him up.

***Stage-3 Sleep***

- The brain waves are slower.
- Higher peaks and lower valleys are shown by the wave pattern.
- Stage-3 and stage-4 sleep dominate the first half of the night.

***Stage-4 Sleep***

- In this stage the person is almost cut off from the external world, and is least responsive to stimulation from outside: the deepest sleep.
- The brain wave pattern now is more regular and even slower.
- The time during which this stage is most likely to occur is the early part of the night.
- Lighter stages of sleep dominate the last half of night.

**How much sleep do we need?**

**Circadian Rhythm**

- An internal pace maker and biological control system: Biological processes that repeatedly occur on roughly a 24-hour cycle. e.g. sleep, body temperature etc.
- Circadian Rhythm may vary from person to person in terms of its pattern; some people feel like going to sleep early and some late; even during the day some need a midday nap and some do not.

**REM: Rapid Eye Movement Sleep**

- Sleep characterized by rapid movement of the eyes.
- REM dominates a little more than twenty percent of an adult’s sleeping time.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- Occurs during stage-1 sleep.
- Eyes move back and forth.
- Sleep is very deep and the major muscles seem as if paralyzed.
- Difficult to wake up the person during REM sleep.
- Usually people dream during REM.
- It is thought that eyes move back and forth during REM because they are following the action-taking place in dreams.
- REM sleep plays an important part in a person's life, both physical and psychological, as the body needs a certain amount of REM sleep.
- Experiments have shown that people whose REM sleep was interrupted and disturbed by being awakened, exhibit a rebound effect: they try to avail every chance to get REM sleep whenever they get a chance. **How much of sleep is required?**
- At least some amount of sleep is necessary.
- The number of hours people need to go to sleep my range from 3 to 9 hours, and even less or more: But on average people sleep for 7-8 hours at night.
- Sleep has a cumulative effect. The person tries to make up for the hours of sleep that he missed in previous nights.
- Sleep deprivation in humans as well as animals has adverse effects although temporary.
- Sleep deprivation affects all faculties, mental and physical: causes fatigue, and irritability; concentration and logical thinking are adversely affected.
- Reaction time is slowed.
- Sleep Deprivation may have serious consequences in case of academic performance, automobile driving, and certain professions requiring sharp alertness of mind and body.
- **A good night's sleep keeps one fresh and ready for facing stresses of everyday life.**

**Sleep Disorders**

- Sleep related problems ranging from inability to sleep, to difficulty falling to sleep, to interrupted sleep, to feeling sleepy even when one has had enough hours of deep sleep; Generally known by the name of Insomnia, sleep disorders include sleep walking and sleep talking as well.

**Causes of Sleep Disorders**

- Sleep disorders or slumbering problems may be due to various reasons:
- Stress
- Preoccupation (concern or fear etc.)
- Mental illness
- Noise pollution
- Digestive problems
- Physical illness
- Drug abuse and medication
- High caffeine intake, and many other

**How to Handle and Treat Sleep Disorders?**

**REMEMBER:** The actual problem of most people suffering from sleep disorders is not that they can not fall asleep, but the concern that " I will not be able to sleep today too."

**Practical Steps for Getting Rid of Most Sleep Problems**

- **Avoid taking sleeping pills.**
- Fix a place/room where you will go to sleep every night, and do not do anything else over there.
- Do not "think" about going to sleep.
- Keep television away from your sleeping place, and if it is there **NEVER EVER** watch an interesting movie or program at sleep time.
- Develop a habit of reading at bedtime, but **NEVER EVER** read an interesting or exciting book.

© Copyright Virtual University of Pakistan

- If you are in your bed and still can't go to sleep, then get out of the bed and take a round around the house and come back.Develop a habit of rising early in the morning every day, at the same time.
- Do not change your sleep time.
- Learn some relaxation exercises.
- Avoid caffeine.
- Avoid heavy meals at night, and eat your dinner about two hours before bedtime.
- A glass of warm milk helps quite often.

**Dreams and Sleeping**

- Dreams are mental experiences during sleep.
- Every body dreams though they may forget the contents.

**Why do we dream?**

- Different psychologists have tried to explain this phenomenon, thus pointing towards the significance of dreams. The main explanations are:
- **Theory of unconscious wish fulfillment: Sigmund Freud**
- **Reverse Learning Theory**
- **Dreams for Survival Theory**
- **Activation Synthesis Theory**

**Freud's Theory of Unconscious Wish Fulfillment**

- Unconscious wishes that cannot be fulfilled in real life and are repressed, find an expression in the dreams.
- The manifest content represents the latent content. However the manifest part is different from the latent part, and represents the unfulfilled wishes in a symbolic form.
- The psychoanalyst is trained in digging out the hidden content, and can bring it to the conscious level.

**Reverse Learning Theory**

- There are loads of irrelevant information that accumulates in our mental repertoire throughout the day. If we let this information keep piling up, it will confuse us and hinder clearer thinking. Dreams are a way of getting rid of this accumulation.
- Dreams do not mean anything more than a scavenger.
- We are in a way unlearning what we had learnt unintentionally.

**Dreams-for-Survival Theory**

- Dreams are a source of reconsidering and reprocessing important information.
- Dreams do have a meaning with reference to our daily living, and represent our concerns, decisions, uncertainties etc.
- It is a capacity inherited from our non human ancestors who had limited capacity for processing information during daytime due to smaller brains; hence the mechanism of information processing during sleep as well.

**Activation- Synthesis Theory**

- Dreams are a by-product of fundamental biological processes.
- During REM sleep our brain generates random electric energy that stimulates memories stored in various portions of the brain.
- The brain puts these random memories into such an order that forms a comprehendible storyline. The gaps in the story are filled in so that the consequent scenario becomes logical.
- Theory proposed by Hobson.

**Other Altered States of Consciousness**

- Hypnosis and Meditation

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

- Drug Induced States

**Hypnosis**

- A condition in which the person is in a highly suggestible state.
- Following a number of instructions by the hypnotist, the person enters a trance and follows the suggestions or further instructions without resistance.
- The instructions are followed even after the person is out of the trance.
- However, a hypnotic state does not mean total loss of will; people may not follow instructions that clash with their moral/ethical ideology.
- It is primarily a varied state of consciousness in which one is not fully awake.
- Self-hypnosis is also taught.

**Why Do People Go For Hypnosis?**

People may choose hypnosis as a therapy for various reasons:, e.g. for:

- Quitting smoking
- Quitting alcohol
- Pain management
- Assertiveness training/overcoming shyness
- Improving sport performance
- Treatment of psychological problems (fears/ phobias)
- Eating Disorders
- Recalling events

**How Effective Is Hypnosis?**

There is no conclusive evidence available in this regard.

**Meditation**

- The person learns (after instruction) to refocus attention and to concentrate in such a way that he/she is totally detached from all the unwanted stimulation for as long as he/she desires.
- Its history can be traced in many religions.
- For focusing attention a word, syllable, or sound may be repeated e.g. the way we do in transcendental meditation(TM).
- In some forms of meditation some object e.g. a marble, crystal, candle flame, or picture may be used
- The main idea is to concentrate.

**Physiological changes due to meditation**

- Decreased heart rate
- Lowered blood pressure
- Lessened oxygen usage
- Changed brainwave pattern

**How does meditation affect?**

- It gives a heightened feeling of relief and relaxation.
- Concentration is sharper.
- Insight is improved and problem solving better.
- It has a positive effect on health, and in some studies longevity has been found to be associated with prolonged practice of TM.

**Drug Induced States**

- Changes in consciousness due to use/abuse of different drugs.

**Psychoactive drugs**

- Drugs that affect behavior and mental processes including cognitions, emotions and perceptions.

© Copyright Virtual University of Pakistan

- More deep rooted and adverse effects are caused by the addictive drugs; drugs causing dependence.

**Effects of Drugs**

Main effects:

- Withdrawal effects
- Overdose effects

The withdrawal effects determine, to a great extent, the success of a quitting program.

**Categories of Drugs**

- Stimulants
- Depressants
- Narcotics
- Hallucinogens

**Stimulants**

- They give you a "high' feeling; they influence the CNS, and the person's heart rate, Blood pressure, and muscle tension is increased.
- Cocaine
- Amphetamines
- Benzedrine
- Dexedrine

**Depressants**

Depressants' intake leads to a slowed down nervous system. These include:

- Barbiturates
- Alcohol

**Narcotics**

Create a feeling of relaxation, and alleviate anxiety and pain. Are highly addictive.

- Heroin
- Morphine

**Hallucinogens**

Drugs that produce hallucinations; affecting perceptual processes:

- Cannabis
- Marijuana (bhang)
- Hashish
- Hash oil
- LSD
- PCP (Phencyclidine)

**Why do people take drugs?**

Addiction
Role modeling
Peer pressure
Stress/ Relaxation
Thrill/Excitement/Experimenting

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**LESSON 20**

# LEARNING

- Learning is commonly understood as the act, process, or experience of gaining knowledge or skill. For a layperson it is knowledge or skill gained through schooling or study. *With reference to Psychology;* it is the behavioral modification especially through experience or conditioning
- The best definition of learning is that: **Learning is a relatively permanent change in behavior, and the frequency of its occurrence; this change is not automatic and results from practice or experience**
- Learning usually refers to improved performance, acquisition of skills, and a positive change in behavior; however the change may also be negative in nature
- Learning is distinguished from behavioral changes arising from such processes as maturation and illness, but does apply to motor skills, such as driving a car, to intellectual skills, such as reading, and to attitudes and values, such as prejudice.
- There is evidence that neurotic symptoms and patterns of mental illness are also learned behaviors. Learning occurs throughout the life span in humans and animals, and learned behavior accounts for a large proportion of all behavior in the higher animals, especially in humans.

**Types/ Forms of Learning: In Terms of the Content**

Considering the content of what has been learnt, there are varieties of learning:

I. Verbal learning
**ii.** Motor learning
**iii.** Problem solving

**Verbal Learning**

Basically man is a verbal learner who learns about the environment through experiences.

- Verbal learning involves the person's own association, experiences and relations with the phenomenon that has been learned.

**ii. Motor Learning**

- It involves the practical application of the learned phenomena.
- There are various tasks/ activities in which motor skills are of primary importance as compared to the ones requiring verbally learned material; e.g. learning the skills like playing football, tennis, cricket etc; or the training of technicians whose motor skills need to be highly efficient.
- In learning motor skills two things are important; quickness of movements and the results that are achieved through it.

**iii. Problem Solving**

- Problem solving tasks usually involves trial and error and primarily include verbal processes.
- While doing the problem-solving task, individual learns many responses that can be helpful for him in different situations

**How Do We Learn?**

Three main explanations of learning are:

- Classical conditioning
- Operant conditioning
- Cognitive approaches to learning.

**Basic Terminology**

**Stimulus**

A physical energy source that has an effect on a sense organ, thus producing a response.

**i. Response**

- The action, behavior, or reaction triggered by a stimulus.

**Environment**

- External factors, variables, conditions, influences, or circumstance affecting one's development or behavior.

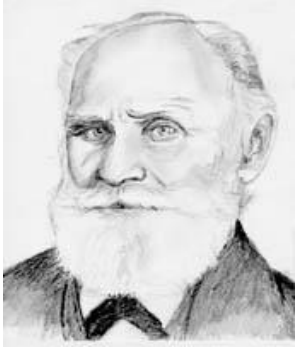
**Variable**

- A behavior, factor, setting, or event that can change/ vary in amount or kind.**Classical Conditioning**
    - Why are children scared of darkness?
    - Why some children jump with joy at the sight of a cat and some start screaming in fright?
    - Why does one coming from office start feeling relaxed at the very sight of his home?
    - Why does one start feeling bad at the thought of going to a dentist?
    - Why does one starts feeling hungry at the sight of one's favorite fast food joint?

**Classical conditioning provides answers to all these questions**

**Classical conditioning forms an association between two stimuli.**

*Classical Conditioning* is when a stimulus acquires the ability to cause a response that was previously caused by another stimulus. This learning process essentially allows us to predict what is going to happen.

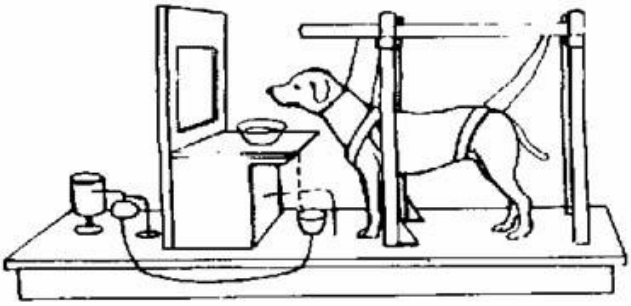


**Historical background**

- In 1879 Ivan Pavlov, the Russian physiologist and pioneer of classical conditioning, began his research work on the digestive process, primarily that of dogs.
- He won Nobel Prize for that in 1904.
- The focal point of his investigation was the salivation reflex in dogs.
- It was already known that the dogs would salivate if food powder were led into their mouths, as it was a ***'reflex.'***
- The dogs would salivate every time the food powder was presented.
- Pavlov observed that after some time, the dogs at times salivated just before food was put into their mouths. They also salivated at the sight of the food, and even at the sight of the lab assistant who brought food for them.
- This is where the concept of classical conditioning emerged.

**Classical Conditioning: The Theory**

- A type of learning in which a previously neutral stimulus starts eliciting a response that was originally the response to a natural stimulus i.e., a stimulus that was meant to produce that response; it so happens because the neutral stimulus had been closely associated with the natural stimulus.



Basic Terminology in Classical Conditioning:

***i.Reflex***

- An automatic, unlearned response resulting from a specific stimulus.

***ii. Un Conditioned Stimulus (UCS)***

A stimulus that elicits a response reflexively, naturally, and reliably.

© Copyright Virtual University of Pakistan

Join VU Group: https://chat.whatsapp.com/FFVUAQDoQYW4Z0bL1pcQtT

**iii. Un Conditioned Response (UCR)**

- A natural, reflexive, reliable, response of the UCS.

**iv. Conditioned Stimulus (CS)**

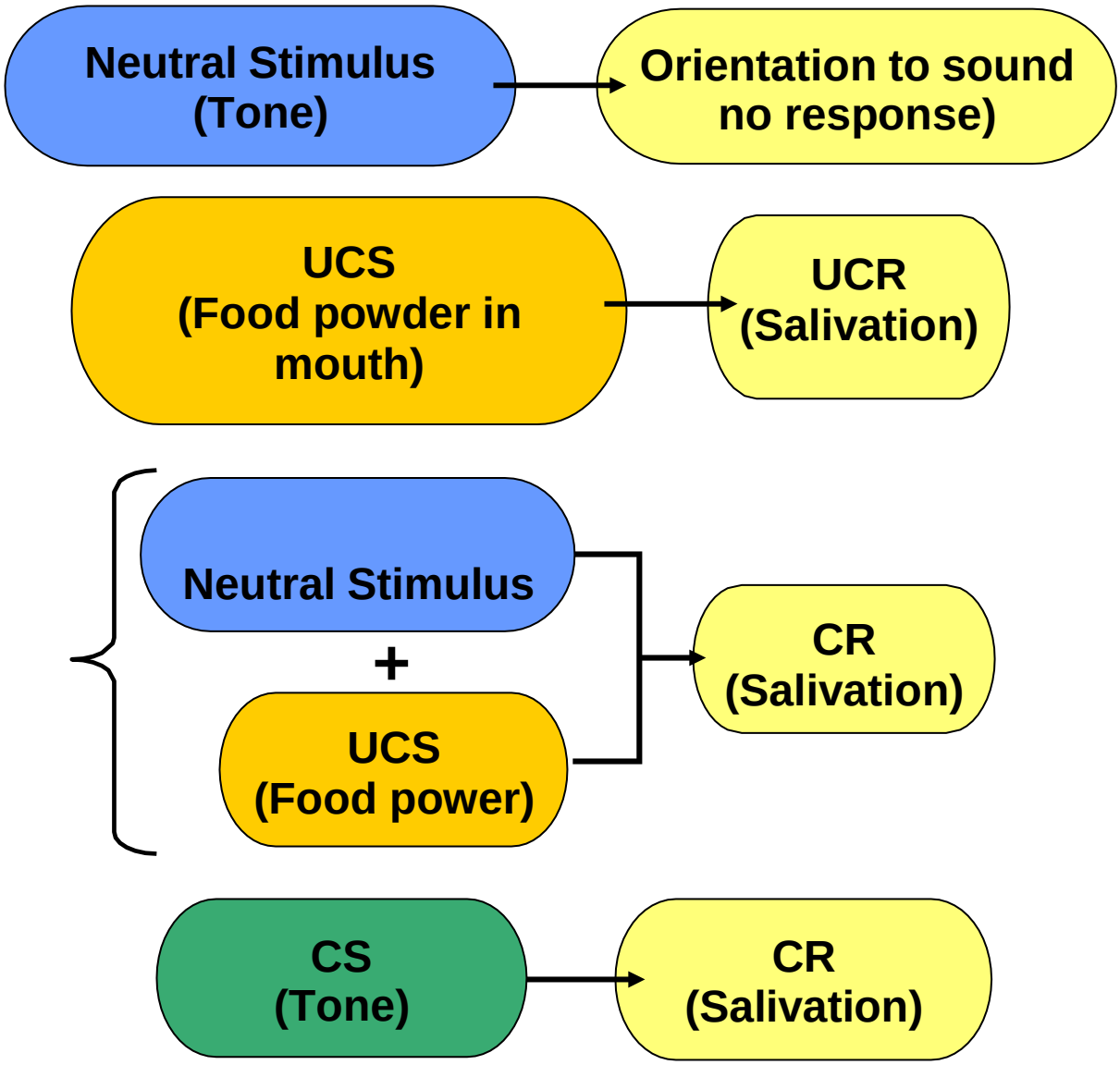
- A primarily neutral stimulus which, when paired with the UCS, starts evoking a response (different from its own natural response) and the same as UCR.

**v. Conditioned Response (CR)**

- After conditioning, the CS begins to elicit a new, learned response i.e., CR.

**Pavlovian Classical Conditioning**

**Before Conditioning**




**John.B.Watson: (1878- 1958)**

- American psychologist initially trained in introspection at the University of Chicago but found it extremely vague and mentalistic.
- He became interested in experimental research with animals.
- Gave a revolutionary, pragmatic approach often known as 'radical behaviorism'.
- For Watson, observable behavior is all that psychology should be looking at.
- Environment and external world (environmental stimuli) is what shapes and determines behavior.

- Learning is what matters in what a person is, and not the inborn instincts, impulses, drive, id, or unconscious motivation. An understanding of learning will encompass all aspects of personality

**Impact of Learning Experience**

"Give me a dozen healthy infants, well formed, and my own specified world to bring them up in, and I'll guarantee to take any one at random and train him to become any type of specialist I might select doctor, lawyer, artist, merchant- chief, and yes, even beggar- man and thief, regardless of his talents, penchants, tendencies, abilities, vocations and race of his ancestors" **(Watson, 1924).**

**Little Albert's Case**

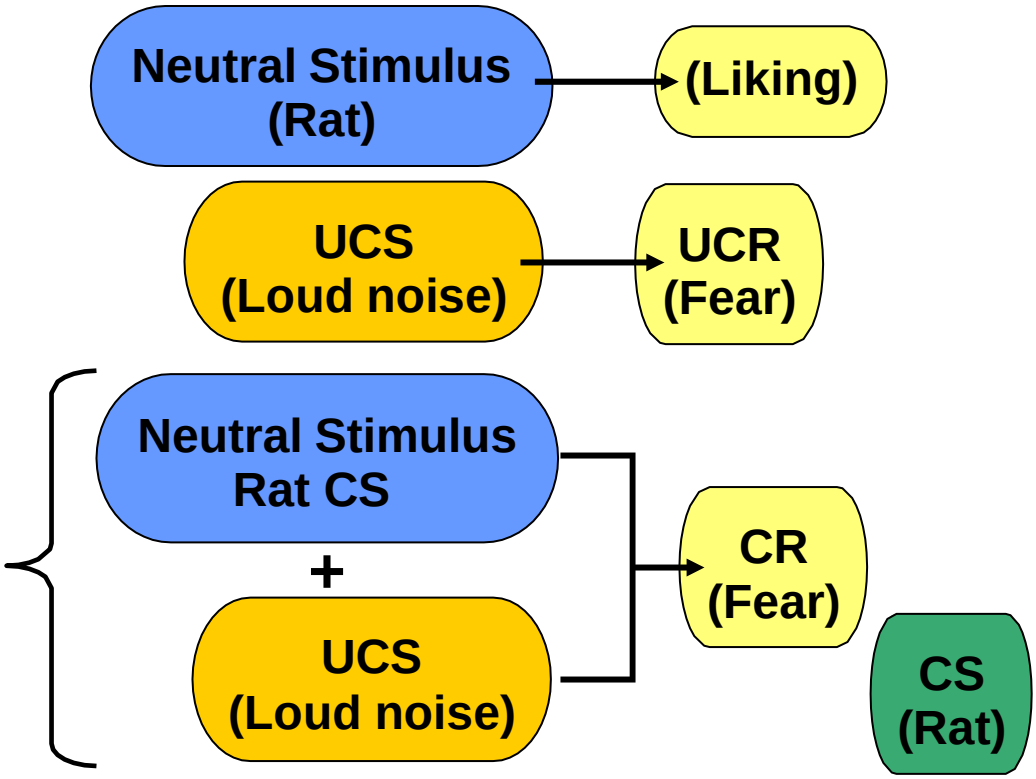
**Learned Fear**

- 1920: Developing Fear: Watson and Rosalie Rayner's experimen
- Eleven- month old Albert who enjoyed playing with a cute white rat was made afraid of it by linking a loud frightening sound with the appearance of the rat.
- The experiment was further expanded and Watson and Rayner demonstrated that the fear of the rat could be generalized to all sorts of stimuli: a dog, a cotton ball and a Santa Clause. In Albert's case, the same sequence of events i.e., presenting the rat with the gong was repeated three times; on all repetitions he began crying, showing that a classical association had been established.
- Seven conditioning trials were repeated on two occasions and then the rat was presented without the gong; Albert still cried.
- Watson called this 'conditioned emotional response'.
- Watson and Rayner worked with Albert once again after about a week.
- He was presented with the same objects.
- This time he showed the same fear response towards other objects similar to the rat i.e., cotton balls, white fur, and a Santa Clause mask having a white beard.

**This indicated that 'stimulus generalization' had taken place**

- The researchers had plans to experiment on unlearning the emotional response
- For three weeks they worked on extinguishing the response using Pavlov's 'extinction' procedure: presenting the rat without gong. But could not achieve success.
- Watson and Rayner could not get a chance to undo the learning as the child's mother removed him from the hospital.

**Before Conditioning:**



**Stages and Extensions of Classical Conditioning**Acquisition

- Extinction
- Spontaneous recovery
- Stimulus generalization
- Stimulus discrimination
- Higher Order Conditioning

**Acquisition**

The stage when the stimulus in question generates a conditioned response; The stage of initial learning when responses are established and then gradually strengthened as a result of repeated pairing and presentation.

- This is when classical conditioning can be said to have taken place.**Extinction**
- The unlearning of the conditioned response by weakening it, leading to its disappearance; using the same principles as those for learning the response.
- The state when the conditioned stimulus i.e. bell, buzzer, gong etc does not accompany the unconditioned stimulus e.g. food.
- The response gradually diminishes, extinguishes, or declines, as the UCS repeatedly does not appear with the CS.

**Spontaneous Recovery**

- Does the response disappear permanently, once extinction has taken place? Not always!
- Pavlovian experiments showed that some days after extinction, the dog salivated again on hearing the bell/ buzzer.

**Consider the case of someone who left smoking but the very sight of someone else who is smoking makes him feel like smoking.**

The **same may happen with a child whose fear of dogs had been treated.**

The re occurring responses are comparatively weaker in nature than they initially were; similarly their extinction takes place sooner and easily.

**Generalization**

- Stimuli similar to the original CS may elicit the same response as to the CS or UCS e.g. a buzzer responded to as a bell.
- Pavlovian experiments showed that the dogs also salivated on the tones that were similar to the original tone but were never used while presenting the food.
- Such responses are not as strong as the original ones.
- Consider **the case of Albert's fear of all white- furry objects**

**Discrimination**

•The process whereby the organism learns to restrict its response to one specific stimulus; differentiating between similar stimuli.

- Pavlov's dogs salivated only at the tones, which were similar in nature.
- **Consider the case of a child who is scared of the neighbor's dog alone (that barks every time the child passes by), and not all dogs.**

**Higher Order Conditioning**

- A process when an already conditioned stimulus is repeatedly paired with a neutral stimulus, and ultimately the neutral stimulus begins to evoke the same response as to the original stimulus.
- **Consider the case of a child who was scared of the neighbor's dog, became scared of all dogs, and finally started screaming at the mere name of a dog.**

**Applications of Classical Conditioning in Everyday Life**

- Negative emotional responses: fears, phobias -----fear of reptiles, dark places, and school phobia.

- Positive emotional responses: Feelings of relaxation, and happiness----thinking of going on a holiday.
- Advertising: Associating model with the product.
- Psychotherapy; Systematic desensitization, aversive therapy.

**Conditioned Drug Response**

•Vomiting inducing drugs were repeatedly paired with the sound of a tone; eventually the mere sound of that tone could produce the same vomiting response. Consider the children who vomit at the name of cough syrup, or who faint at the name of a clinic.

**Smoking, Coffee, and Tea**

•People who are addicted to caffeine and nicotine start feeling relaxed and stimulated even before the intake.

**Over Eating**

•Most obese people start feeling hungry at the sight of a restaurant or at the smell of food.

**Classical Conditioning and the Immune System**

•Studies on rats have shown that a neutral stimulus like saccharin sweetened water when repeatedly paired with an immuno-suppressant drug, started eliciting the same response; the very taste of saccharin had the same effect on immune system. functioning.

•Objects associated with a state of low immunity may lead to a low immunity state in future.

**Classical Conditioning and the School Psychology**

An overly strict school atmosphere may lead to school phobia, or test fear

The same rule can be applied to develop a positive feeling for school by making the school environment pleasant.

© Copyright Virtual University of Pakistan

**LESSON 21**

## OPERANT CONDITIONING

- Type of learning in which a voluntary response becomes stronger or weaker depending on its positive or negative consequences.
- The organism plays an active role and 'operates' on environment to produce the desired outcome.

**Operant *conditioning*** forms an association between a behavior and a consequence.
Consequences have to be immediate, or clearly linked to the behavior. With verbal humans, we can explain the connection between the consequence and the behavior, even if they are separated in time. For example, you might tell your friends that you'll buy dinner for them since they helped you move, or a parent might explain that the child can't go to summer camp because of her bad grades. With very young children, humans who don't have verbal skills, and animals, you can't explain the connection between the consequence and the behavior. For the animal, the consequence has to be immediate.

**Four Possible Consequences**

There are four possible consequences of any behavior:

**Something Good can start or be presented**
**Something Good can end or be taken away**
**Something Bad can start or be presented**
**Something Bad can end or be taken away**

Applying these terms to the Four Possible Consequences

- Something Good can start or be presented: behavior increases **= Positive Reinforcement (R+).**
- Something Good can end or be taken away: behavior decreases **= Negative Punishment (P-).**
- Something Bad can start or be presented: behavior decreases **= Positive Punishment (P+).**
- Something Bad can end or be taken away, so behavior increases **= Negative Reinforcement (R-).**

**Thorndike's Law of Effect**

Any response leading to an outcome that is satisfying for the organism is likely to be repeated; a response leading to an outcome that is not satisfying is not likely to be repeated.

**Association by Contiguity**

- The organism forms an association or connection between the response and its consequences. For it to be effective, the response and the outcome have to be closely linked__ both in time and space.
- The theory drew attention towards the significance of reward and punishment in learning new behavior.

**Criticism against Thorndike's Approach**

**It was not clear about what exactly 'satisfying' meant**

**Some points to ponder**

Have you ever thought?

- Why do teachers give silver and gold stars on children's workbooks?
- Why do horses gallop faster when the rider whips them?
- Why do parents allow children to watch cartoons when they finish their homework in time?
- Why do we find surprise gifts in the packs of detergents?
- Why do employees who earn profit to the organization get a bonus at the end of year? And,
- Why do children show temper tantrums in the presence of guests even when they know the mother is going to scold and punish?

**The answers to all these questions can be found in the operant conditioning approach**

**Burrhus Frederic Skinner: 1904-1990**

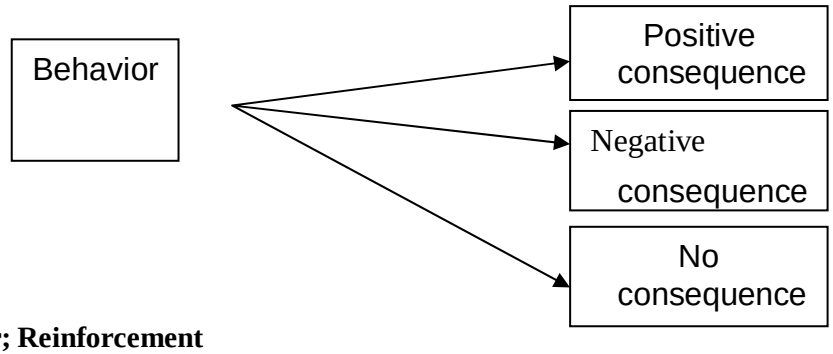
© Copyright Virtual University of Pakistan

- American Psychologist and the founder of Operant Conditioning.
- His theory is somewhat similar to Thorndike's, but it was actually Watson who impressed him.

**The Typical procedure in Skinner's Operant conditioning experiments**

- A special apparatus usually known as skinner's box is used.
- Laboratory animals learn to press a lever so that food is delivered to them.
- The environment is controlled.
- The animal operates on the environment, and as a result of its behavior it may be rewarded or punished. Food is the reward.
- The consequence determines if the response will be repeated or not.

*Consequences of Behavior*




**Consequences of Behavior; Reinforcement**

Reinforcement is used for increasing the probability that the preceding behavior will be repeated through a stimulus. Also some consequences may deter the re occurrence of behavior. Reinforcement can be in the form of:

- Positive reinforcement
- Negative reinforcement

Other consequences may be:

- Punishment
- No reinforcement

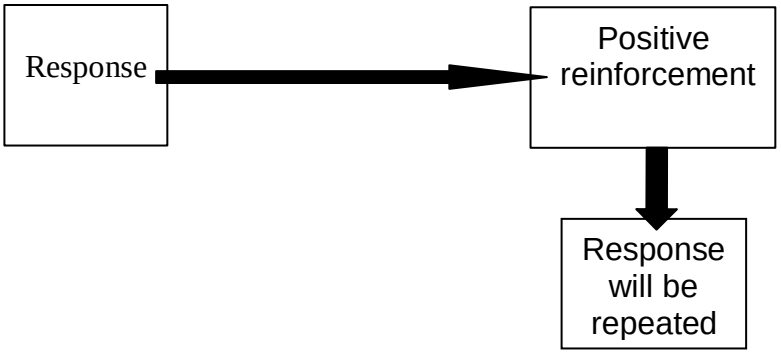
**Reinforcer**

- The stimulus that increases the probability of repetition or re occurrence of a behavior
- It can be material as well a non material in nature.

**Positive Reinforcer/ Reward**

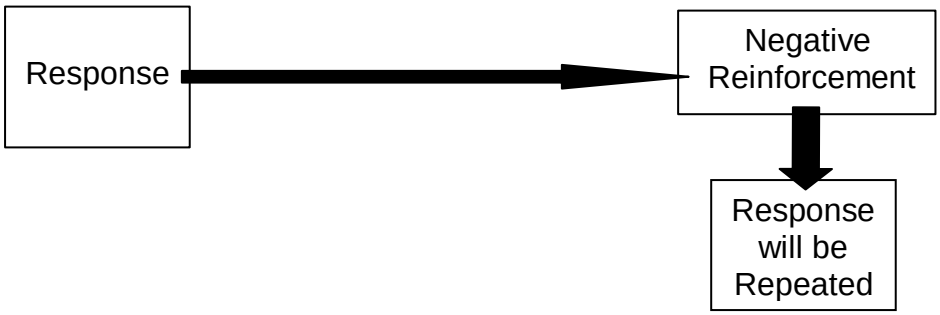
It is a stimulus whose introduction brings about an increase in the preceding response.

**<u>CONSEQUENCES OF BEHAVIOR AND THEIR IMPACT</u>**



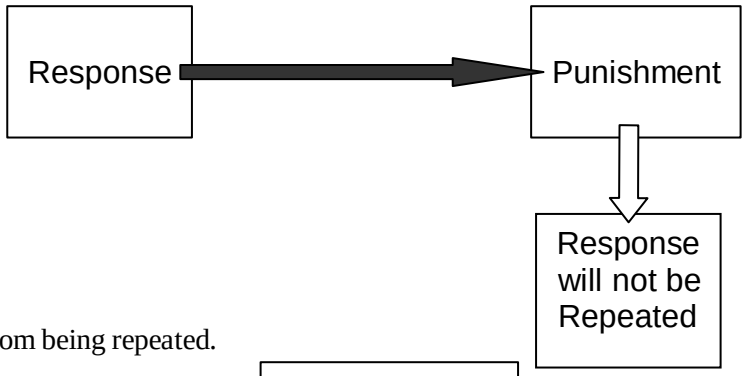
**Negative Rein forcer**

- A stimulus whose removal reinforces and leads to a higher likelihood that the response bringing about this removal will be repeated: in simpler terms it means repeating a behavior in order to get rid of a negative stimulus.



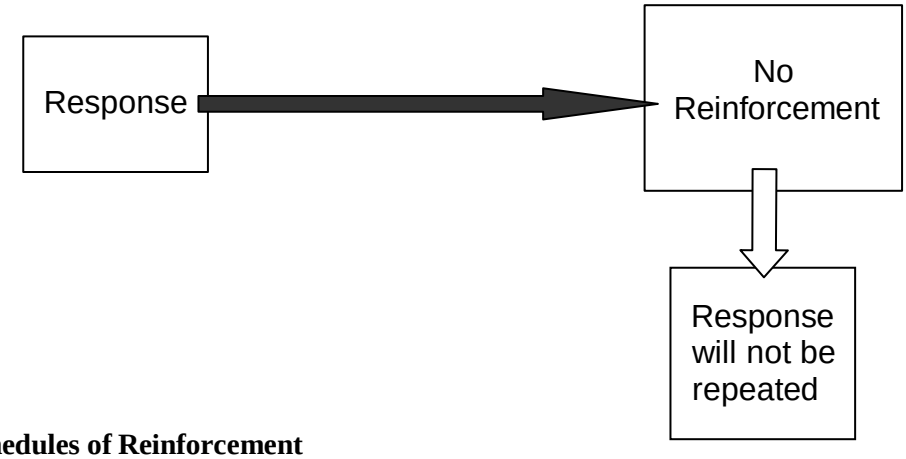

**Punishment**

Punishment is an unpleasant or painful stimulus whose introduction following a certain behavior decreases the likelihood that the behavior will occur again.




**No reinforcement**

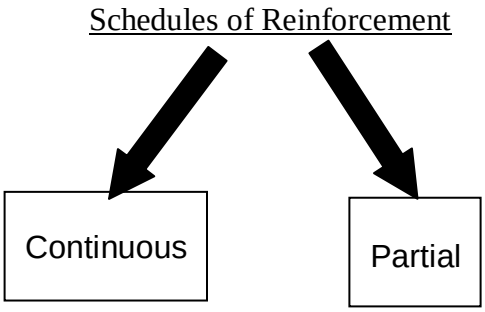
This also deters or stops a behavior from being repeated.




**Schedules of Reinforcement**

- The procedures involving specific frequency and timing of reinforcing a desired behavior

SCHEDULES OF REINFORCEMENT




**Continuous Versus Partial Schedules**

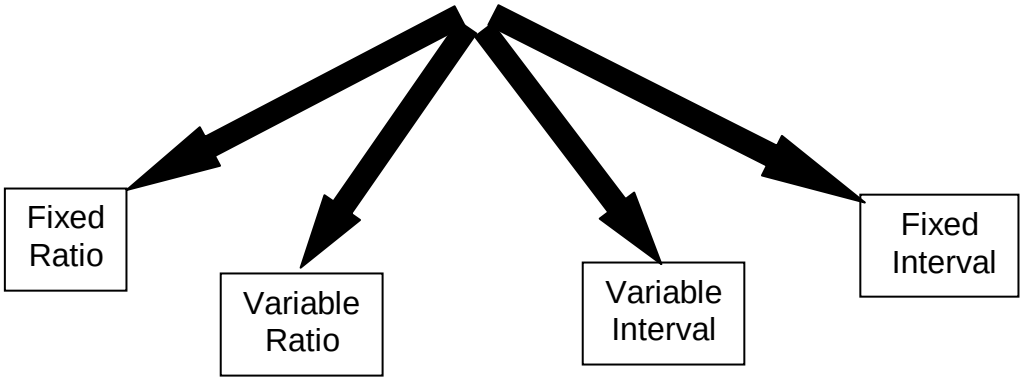
**Continuous Schedule**

Reinforcing the behavior every time it is repeated.

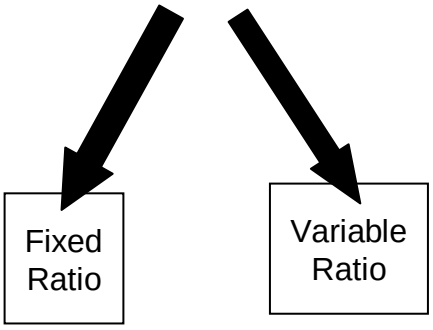
**Partial Schedule**

The behavior is reinforced but not every time.

PARTIAL SCHEDULES OF REINFORCEMENT



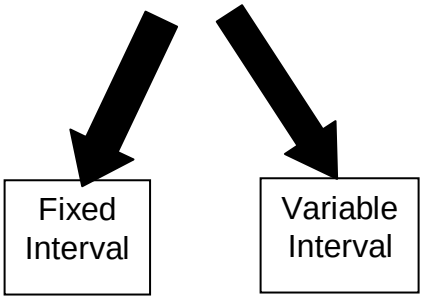

PARTIAL SCHEDULES OF REINFORCEMENT CONSIDERING THE FREQUENCY OR NUMBER OF RESPONSES




**Fixed Ratio Schedule**
The organism is reinforced only after a specific number of responses is made e.g. salary after 7 days.

**Variable Ratio Schedule**
The organism is reinforced after a varying number of responses is made (not a fixed number) e.g. surprise bonus.

**PARTIAL SCHEDULES OF REINFORCEMENT CONSIDERING THE PERIOD OR AMOUNT OF TIME**




**Fixed- Interval Schedule**
The organism is reinforced after pre fixed time intervals e.g. giving students a candy every two days.

**Variable- Interval Schedule**
The organism is reinforced after around an average time interval instead of fixed ones e.g. at times giving 2 candies after 6days, and one after two days.

Remember!!! Immediate and appropriate reinforcement is essential for learning.

Consistency is the golden rule; follow the pattern of reinforcement regularly and never let the organism feel that his/her/its behavior is not been observed and the progress not followed.

**The most effective schedule of reinforcement is the variable-interval schedule.**

***Shaping***

- Successive approximations of a required/-desired response are reinforced until that response is fully learnt:
- In the beginning each and every success is reinforced with a reward, no matter how small the success.
- Once the desired response is learnt the reinforcer immediately follows it, every time it happens.
- Once learnt the behavior, in many cases, the organism may not need reinforcement since many behaviors are self-reinforcing e.g. learning to play a musical instrument.

© Copyright Virtual University of Pakistan

**Stages in Shaping**

**Acquisition:** Initially the response rate following reinforcement may be slow but at one stage it increases to the maximum----acquisition.

**Extinction:** If reinforcement is withheld the response rate decreases and finally no response is shown------ extinction.

**Shaping Can Best Be Used For**

- Learning alphabets, vocabulary, mathematical tables, or a new language.
- Learning to play a musical Instrument.
- Appropriate classroom behavior.
- Training mentally handicapped children.

**Behavior Modification**

- A therapeutic/intervention strategy used for modifying behavior in such a manner that the frequency of desired behavior is increased up to the optimal level, and the frequency of undesired behavior is brought down to the minimum…or to extinction level.
- The intervention is based upon the operant principles of learning.

**Steps in Behavior Modification**

- Identification of goals in terms of target behavior.
- Recording the preliminary/background information concerning the behavior in question.
- Designing the intervention, issues involved, and deciding its components.
- Implementation of the planned program as well as careful monitoring.
- Recording the events, progress, and problems during the implementation phase.
- Evaluating the program and making alterations if required.

**Token Economy/ Token System:**

- The person is rewarded with some form of a token every time a desired behavior is exhibited.
- The token can be play money/token or a chip representing money; it can be the silver or gold stars earned by the child; parents can give different colored paper tokens for good behavior.
- After a specific number of tokens have been earned, they can be exchanged for something desirable.

**Contingency Contracting**

- A written contract is held between the client and the therapist, specifying all goal-behaviors as well as consequences; parents and teachers can also use it.
- The contract is followed strictly no matter if the consequences of behavior are negative, and the client may in fact dislike them; the purpose is to promote target behavior e.g. if an over-eater fails to refrain from confectionary throughout the week, he will have to send a donation cheque for drinks in a marathon; the cheques are prepared at the beginning of the program.

**Who is Operant Conditioning Most Effective with?**

- Children
- Animals
- Mentally handicapped

**Applications of Operant Conditioning in Real Life Situations**

- Child rearing.
- Classroom management.
- Teaching of skills.
- Animal taming.

© Copyright Virtual University of Pakistan

- Advertising.
- Psychological intervention and Psycho- therapy: behavior modification, assertiveness training, and token economy.

**Child Rearing**
Things to remember:

- If you make rules, stick to them; if you can not stick to them then don't make rules.
- Provide immediate reinforcement as promised.
- Consider no reinforcement along with positive/ negative reinforcement and punishment.

**Classroom Management**

- In different situations positive/negative reinforcement, punishment, and no reinforcement work.
- The same rules apply as is in child rearing.

**Significant results in case of:**

- Discipline
- Memorization e.g. learning tables
- Vocabulary
- New skills

**Shaping procedures are of special help in classroom settings.**

**Organizational Behavior**

- Fixed wages after a fixed period or variable wages depending on performance have different effects in different situations.

**Psychotherapy/care for special needs/health psychology**

- More effective when combined with cognitive approach for:
- Children with special needs.
- Quitting smoking or alcohol.
- Weight reduction programs.
- Compliance with medical advice.

**How do many youngsters start taking drugs?**

- Operant conditioning principles operate here too. What positively reinforces addictive behavior can be the:
- Free offers.
- The subsequent effect.
- Peer acceptance.

**Weight Reduction Programs**
Following can be of help:

- Contracts
- Allowing one's self to eat favorite food once a week

**Learning Healthy Lifestyles**
Acquiring better skills for improving and enhancing health can be made easier by using learning techniques.

© Copyright Virtual University of Pakistan

**LESSON 22**

## COGNITIVE APPROACH

**(Also known as the cognitive Perspective or Model)**
**After having gone through the classical and operant conditioning approaches ask yourself:**

- Did we learn, all that we know, as a result of mere association of stimulus and response; or was it learnt just because we were reinforced for it?????Can learning take place as a result of some other processes?
- Why does a soldier keep resisting the strong enemy without caring for his life even when he can escape?
- Why would an artist donate his paintings to a charity school and not sell them in the market when he could have earned hundreds of thousands?

All human intellectual activities and potentials, i.e. thinking, communicating, problem solving, and learning require mental processes and knowledge. It is more than just stimulus-response association or reward and punishment.

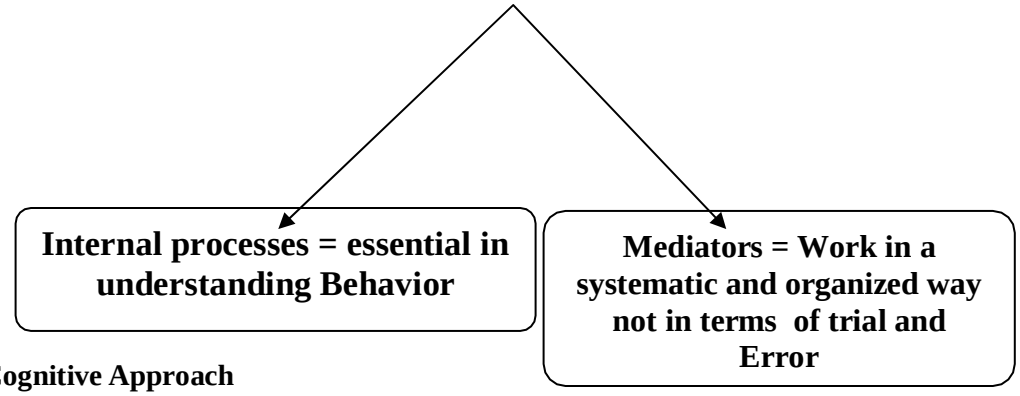
- In the 1970's much of psychology returned to the study of the mind. Cognitive psychology had a similar interest. It studied memory, information processing, decision-making, etc.**Cognitive**

**Approach to Learning**

The approach that focuses upon the thought processes underlying learning.

- The approach that gives importance to cognition for understanding and explaining learning.
- Cognition is defined as "the mental processes" or the " faculty of knowing".Cognitive learning approach has roots in the cognitive perspective.
- Cognition means "knowledge" or "the process of knowing".
- Cognitive approach emphasizes:
  - Thoughts
  - Feelings
  - Thinking
  - Values
  - Expectations etc
- This theory gives same importance to both the internal states of the person as well as the environmental events.
- Internal events are referred a s "Mediators" or "mediational processes"__ (that come in between stimulus and response).
- Mediators are 'conceptual' but they are defined physiologically rather than conceptually.

**Elements of Cognitive Model**




**Emphasis of Cognitive Approach**

- Cognitive approach uses the following as its focal point:
  - Emotions
  - Social behavior
  - Behavior modification
- Cognitive approach includes the elements of psychology, linguistics, computer science and physiology__ thus called a 'hybrid science'.

- The roots of cognitive learning can be traced in the work of Wolfgang Kohler, and E.C.Tolman.

**Wolfgang Kohler** Experiments on apes by German scientist Kohler, led to the discovery of the use of insight by animals in problem solving; "learning by insight".

- Most famous of his experiments were conducted involving "Sultan", an ape.
- Series of experiments was conducted in which it had to reach a banana outside its cage using a stick. Once it could solve this problem several times, it was provided with a stick that was not long enough to reach the banana. However, outside the cage was placed a longer stick.

The ape unsuccessfully tried several times to reach the banana with the smaller stick, till it was finally frustrated and retreated. Then all of a sudden the ape got up, got hold of the shorter stick and used it to reach the longer stick; that stick was then used to reach the banana.

- This phenomenon, Kohler thought, could be explained neither in terms of mechanical classical or operant conditioning, nor trial and error.
- The animal had exhibited a sudden change in behavior or the way it organized the problem situation based upon "insight".
- Both Kohler and Tolman played a vital role in laying the foundation of cognitive approach.

**Tolman's Concept of Latent Learning**

- Tolman talked about the 'cognitive maps'; it is not necessary to have an association between stimulus and response, a person can learn without showing any apparent response; in other words learning and performance are not the same.

•The type of learning in which the organism does learn or acquire a particular behavior but does not readily demonstrate it until reinforcement is provided; performance may not be the same as what one has actually learnt.

Tolman's Series of Early Experiments:

- **Tolman (1886-1959) and colleagues conducted experiments that demonstrated that only mechanical association between the stimulus and response can not explain just every type of learning. In order to demonstrate this experiment on maze learning was conducted using rats that were divided into three groups.**

- **Group- 1**

For 17 days the rats were allowed wandering around the maze once a day without being rewarded; making many errors they took longer in reaching the end.

- **Group- 2**

Always given food at reaching the end; learned to run faster to the end and food box; made fewer errors.

- **Group- 3**

For the first 10 days treated like group-1, and then given food; running time reduced. Errors declined; performance immediately matched that of group-1.

**Conclusion: Cognitive Map**

•The rats who were not rewarded had learnt the layout of the maze in their initial explorations, but demonstrated their ability/skill only after reinforcement was provided; immediately after they stared getting food they were almost as good as group-1.

•They had developed a cognitive map of the maze that was readily available in their mind, that was used only when reinforcement was received.

**Cognitive Map**

•It is a mental representation of space, locations, and directions; a mental representation of learned relationships among stimuli.

**What function do spatial cognitive maps perform???**

In case of humans and animals:

•Spatial memory is used for identifying and recognizing the features of their environment e.g. cats find their way back home.

•Spatial memory is used for finding important goal objects in their environment.
•Spatial memory is used for planning route through an environment.

**Use of Cognitive Maps by Animals**

•Birds coming back to the same place and point after a season

•Pigeons carrying messages

•Cats coming back home even after a number of days have passed

**Use of cognitive maps by humans**

•Cognitive maps of surroundings, primarily based on particular landmarks are developed by people too.

•In their initial encounter with a new environment, they develop cognitive maps based upon specific paths.

•As the familiarity with the environment increase, "abstract cognitive maps" are developed i.e., overall conception of environment is developed.

•Used by interior designers for planning space and arrangements in the absence of any actual objects.

**Observational Learning**

**Ask Yourself**

•Will people be behaving the same way as they do now, if they had never seen another human being?

•How do toddlers learn to wear shoes?

•Why do small girls like to wear lipsticks?

•How does one reach for the ignition in a car when trying to drive the very first time on his own?

•How do many youngsters start smoking?

•Why do people dress up and talk like famous actors?

**Defining observational Learning**

Imitation is an advanced animal behavior whereby an individual observes another's behavior and replicates it.

•Observational learning refers to learning through observation of others' behavior; or as a result of modeling

•According to Albert Bandura and colleagues, a major portion of our learning is based upon learning by observation.

•It is the main component of social-learning theory in which a person makes changes in his own behavior by watching/or imitating others i.e., a model/ a super star/favorite personality or a cartoon character.

•Effective in acquiring skills, attitudes, and beliefs simply by watching other

**Observational learning may lead to learning negative as well as positive behaviors!!!!**

- Bandura (1965) and others have demonstrated that we learn from observing models but we don't necessarily copy them. In an early study, children watched a film of an adult hitting and kicking a large punching bag type of doll. Some of the children saw the adult rewarded for the aggressiveness, others saw the adult punished, and still others saw no rewards or punishment afterwards.

When placed in a similar situation as the adult with the doll, the children were more aggressive themselves if they had seen an adult rewarded for being aggressive. If they had seen the adult punished, they were less aggressive, even though they could imitate the adult perfectly. They had learned behavior by observing and learned to monitor and control their behavior considering if it might lead to rewards or punishment. All parents observe this phenomenon in their growing children.

**Modeling** has also been used as a form of psychological intervention or treatment. Children with a fear of dogs (Bandura, Grusec, and Menlove, 1967) or snakes (Bandura, Blanchard, and Ritter, 1969) were shown a

model that was not afraid and approached and handled the animal. The children learned to be less afraid. Although observing an effective model in a film is helpful, seeing a live model works better. Even more effective is watching a live model first and then participating by approaching and safely handling the feared animal.

**Steps in Observational Learning**

- The most critical features of another person's (model's) behavior are paid attention to and perceived.
- The behavior is remembered; stored in memory.
- The action is reproduced.
- The person is motivated to learn and practice the behavior; successes are reinforced and failures punished.

**When is observational learning the best approach to learning???**

- In learning those skills where shaping is not appropriate, trial and error impossible and classical conditioning irrelevant, for example:
  - Flying airplanes as a pilot
  - Performing surgery

**Who is a good model???**

- The one who is rewarded for his behavior
- Those punished for their behavior will not usually be copied.
- Socially significant models (e.g. actors or super models used in advertisements)
- Successful people
- Glamorous people
- Good communicators

**Applications of Observational Learning in Real Life Situations**

Observational learning can be, and has been, used successfully for:

- Overcoming fears in children
- Assertiveness training
- Treating fear of medical treatment and surgery
- Learning sports and athletics
- Learning new skills, like swimming
- Classroom situation: good performers and high achievers are rewarded so that they act as models for other children

The following behaviors are also learned through observation of others performing the same act:

- Learning gender roles
- Adopting new fashions
- Starting smoking
- Drug abuse
- Drinking alcohol
- Violence and aggression learnt and displayed by children

© Copyright Virtual University of Pakistan

*Comparison of Different Learning Approaches*

| **Aspect** | **Behaviourist** | **Cognitivist** | **Humanist** | **Social and situational** |
|---|---|---|---|---|
| **Learning theorists** | Thorndike, Pavlov, Watson, Guthrie, Hull, Tolman, Skinner | Koffka, Kohler, **Lewin**, Piaget, Ausubel, **Bruner**, Gagne | Maslow, **Rogers** | Bandura, **Lave and Wenger**, Salomon |
| **View of the learning process** | Change in behaviour | Internal mental process (including insight, information processing, memory, perception | A personal act to fulfil potential. | Interaction /observation in social contexts. Movement from the periphery to the centre of a community of practice |
| **Locus of learning** | Stimuli in external environment | Internal cognitive structuring | Affective and cognitive needs | Learning is in relationship between people and environment. |
| **Purpose in education** | Produce behavioural change in desired direction | Develop capacity and skills to learn better | Become self-actualized, autonomous | Full participation in communities of practice and utilization of resources |
| **Educator's role** | Arranges environment to elicit desired response | Structures content of learning activity | Facilitates development of the whole person | Works to establish communities of practice in which conversation and participation can occur. |
| **Manifestations in adult learning** | Behavioural objectives<br>Competency -based education<br>Skill development and training | Cognitive development<br>Intelligence, learning and memory as function of age<br>Learning how to learn | Andragogy<br>Self-directed learning | Socialization<br>Social participation<br>Associationalism<br>Conversation |

**LESSON 23**

# MEMORY I

Memory refers to the processes by which people and other organisms encode, store, and retrieve information. Memory is critical to humans and all other living organisms. Practically all of our daily activities—talking, understanding, reading, and socializing—depend on our having learnt and stored information about our environments. Memory allows us to retrieve events from the distant past or from moments ago. It enables us to learn new skills and to form habits. Without the ability to access past experiences or information, we would be unable to comprehend language, recognize our friends and family members, find our way home, or even tie a shoelace. Life would be a series of disconnected experiences, each one new and unfamiliar. Without any sort of memory, it would be impossible for humans to survive. Philosophers, psychologists, writers, and other thinkers have long been fascinated by memory. They have always been wondering about, and working on problems like:

- How does the brain store memories?
- Why do people remember some bits of information but not others?
- Can people improve their memories?
- What is the capacity of memory?

Memory also, frequently, is a subject of controversy because of questions about its accuracy. An eyewitness's memory of a crime can play a crucial role in determining a suspect's guilt or innocence. Psychologists agree that people do not always recall events as they actually happened, and sometimes people mistakenly recall events that had never happened.

**Memory and Learning are Closely Related**

The two terms often describe roughly the same processes. The term learning is often used to refer to processes involved in the initial acquisition or encoding of information, whereas the term memory more often refers to later storage and retrieval of information. However, this distinction is not hard and fast. After all, information is learned so that it can be retrieved later, and retrieval cannot occur unless information was learned. Thus, psychologists often refer to the learning/memory process as a means of incorporating all facets of encoding, storage, and retrieval.

- Memory is usually considered as the storehouse of information alone but, as just mentioned, it is more than just that.
- Memory is the process of encoding, storing and retrieving information.

Woodworth defined memory as:

**Memory = L - I - R**

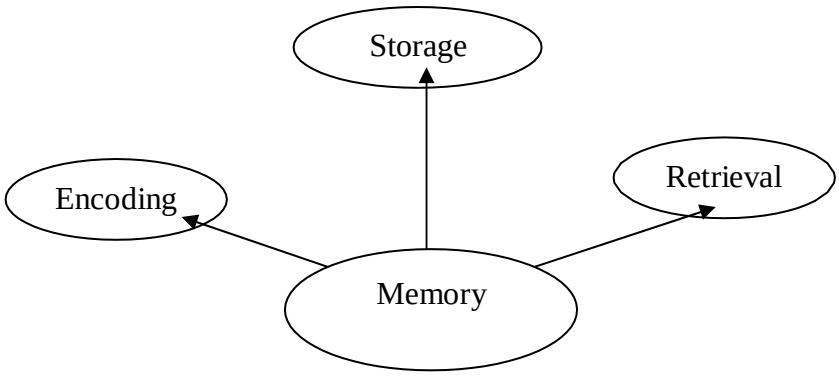
Where;

- **"L"** is the act of "learning".
- **"I"** is the time interval, or duration between the act of learning and remembering; and
- **"R"** refers to the act of "remembering".

**The recollection and reinstatement of the past experiences is a part of memory, in which the new conscious experiences also are, or may be, added all the time.**

**Functions of Memory**

i. Encoding
ii. Storage
iii. Retrieval



**Encoding and Recoding**

The process of initial recording of information: information is recorded in a form that is ready for use by our memory any time.

*Encoding* is the process of perceiving information and bringing it into the memory system. Encoding is not simply copying information directly from the outside world into the brain. Rather, the process is properly conceived as *recoding*, or converting information from one form to another. The human visual system provides an example of how information can change forms. Light from the outside world enters the eye in the form of waves of electromagnetic radiation. The retina of the eye converts this radiation into bioelectrical signals that the brain interprets as visual images. Similarly, when people encode information into memory, they convert it from one form to another to help them remember it later.

**Storage**

In the storage part of the memory processes information saved in the memory is maintained in an identifiable form.

**Retrieval**

The information recorded and stored is approached, located, brought into awareness, and used under the memory retrieval system.

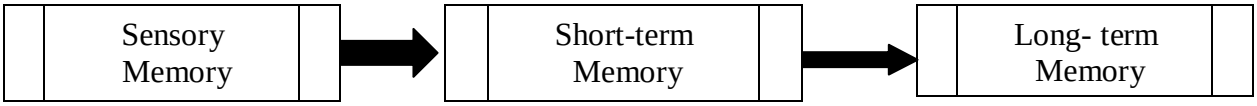
Encoding and storage are necessary to acquire and retain information. But the crucial process in remembering is retrieval, without which we cannot access our memories. Unless we retrieve an experience, we do not really remember it. In the broadest sense, retrieval refers to the use of stored information.

For many years, psychologists considered memory retrieval to be the deliberate recollection of facts or past experiences. However, in the early 1980s, psychologists began to realize that people could be influenced by past experiences without any awareness that they are remembering them. For example, a series of experiments showed that brain-damaged amnesic patients, who had lost certain types of memory functions, were influenced by previously viewed information even though they had no conscious memory of having seen the information before. Based on these and other findings, psychologists now distinguish two main classes of retrieval processes: explicit memory and implicit memory, i.e., one that is vividly remembered and the other that is not.

**The Memory Storage Systems: Memory Storehouses**

i. Sensory Memory
ii. Short - term Memory
iii. Long - term Memory

**<u>The Memory Storage Systems: Memory Storehouses</u>**




- These three are not separate, mutually exclusive, entities found in separate brain centers;
- They differ in terms of the functions they perform and their capacity for retaining information for a specific period of time i.e., for how long can they keep the information stored.
- These are abstract divisions on the basis of their primary characteristics.

**Sensory Memory**

- Storage of memory lasting for a while; this is the initial momentary stage.
- Sensory memory refers to the initial, momentary recording of information in our sensory systems. When sensations strike our eyes, they linger briefly in the visual system. This kind of sensory memory is called iconic memory and refers to the usually brief visual persistence of information as it is being interpreted by the visual system. Echoic memory is the name applied to the same phenomenon in the auditory domain: the brief mental echo that persists after information has been heard. Similar systems are assumed to exist for other sensory systems (touch, taste, and smell). However researchers have studied these senses less thoroughly. American psychologist George Sperling demonstrated the existence of sensory memory in an experiment in 1960.
- The person's sensory system records information as a raw and non-meaningful stimulus: e.g., a fly that sat on your nose in the park this morning, the sound of the car that passed by you, or the feel of the dry leaf that landed on your head when you were waiting for the bus.

- Sensory memory systems typically function outside of awareness and store information for only a very short time. Iconic memory seems to last less than a second. Echoic memory probably lasts a bit longer; estimates range up to three or four seconds. Usually the incoming sensory information replaces the old information. For example, when we move our eyes, new visual input masks or erases the first image. The information in sensory memory vanishes unless it captures our attention and enters the working memory.

**Types of Sensory Memories**

i. Iconic Memory
ii. Echoic Memory
iii. Memories related to other senses

***Iconic Memory***

The information gathered by our visual sense is reflected by the iconic memory; memory in the visual domain

***Echoic Memory***

The information coming from our auditory sense is dealt with by the echoic memory; i.e., Memory for sounds:

- Sensory memory is short lived. Ranging from just about one second to a few seconds, its duration depends upon the intensity of the stimulus too.
- Iconic memory may fade in less than a second, whereas the echoic memory may last for 3-4 seconds.
- The stimuli that have a high intensity may stay for a bit longer
- Sensory memory is like a temporary image that may vanish forever, and may be replaced by another if it is not shifted to another processing system or memory storehouse

The representation of the world around us captured by sensory memory is relatively complete, full and detailed.

**Short-term Memory/ Working Memory**

- Psychologists originally used the term *short-term memory* to refer to the ability to hold information in mind over a brief period of time. As conceptions of short-term memory expanded to include more than just the brief storage of information, psychologists created new terminology. The term *working memory* is now commonly used to refer to a broader system that both stores information briefly and allows manipulation and use of the stored information.
- This system is higher in functioning than sensory memory, as it stores information in terms of meaning and not just simple sensory stimulation.
- Sensory information is meaningless and therefore discarded.
- If it is sent to the short- term memory then a meaning is added to it.
- Since now it is meaningful it will be retained, though for not very long.
- Short-term memory retains information for 15 to 25 seconds, unless it is moved into the long- term memory.

**How is sensory memory transformed into short-term memory?**

- The exact process is not yet clearly known
- There are two main theories in this regard:

a) The transformation takes place when the sensory stimulus is converted into words
b) The transformation takes place after the sensory information is converted into graphic representations or images.

**Chunking and the capacity of Short-term memory**

- The information stored in short-term memory is in the form of a single unit, comprising several chunks.

- A chunk is an understandable or meaningful set or grouping of stimuli e.g., "001023" can be learnt as "0 0 1 0 2 3" OR "00 10 23".
- Short-term memory can carry seven chunks at a time on average; the capacity may be two more or two less than seven (George Miller).

Chunking is a process whereby the items to be learnt are configured by grouping them **considering their similarity, or combining them into larger patterns based upon information residing in long-term memory, or on the basis of some other principle of organization.**
For example see "111222333444"; you do not usually learn it as "11 12 22 33 34 44"; but as "111 222 333 444" Or even as: **"triple one, triple two, triple three, and triple four".**
**No restrictions on the size of the chunks.**

**The Role of Rehearsal in Short-term memory**
***How can short-term memory be more effective, considering its limited capacity?***
**If the material in the short-term memory is rehearsed, or repeated, it may enter the long-term memory; but not necessarily, not always e.g., learning someone's e-mail address, or a phone number.**
**The information may be with you just temporarily.**

***WHAT HAPPENS AFTER YOU GET OUT OF THE EXAMINATION ROOM?***
***CAN YOU TAKE THE SAME TEST AGAIN, SOON AFTER YOU HAVE JUST FINISHED IT?***

- Several repetitions help retain information in the short-term memory but do not ensure its admittance to long-term memory.
- For transferring short-term memory information into long-term memory we need other aids and processes like elaborative rehearsal and mnemonics.

**Elaborative Rehearsal**

- A technique or process whereby the material to be learnt or remembered is elaborated upon in order to improve encoding of information.
- The information is organized in a manner easy to be stored or encoded.

**Examples of Elaborative Rehearsal**

- Imagining a relationship that strengthens the association between material to be learnt e.g., learning a new name by relating it to an emperor with the same name.
- The information may be expanded to fit into an already existing logical framework e.g., learning a car's number "2346" by considering the relationship i.e., 23 x 2 = 46
- Making a story line also helps e.g., "foot-in-the-door" can be remembered by forming a story in mind.
- Forming a mental image can also be used e.g., if you forgot to make a list of toiletries to be bought from the super market, you can simply imagine your toilet from corner to corner and see what items are required for which point.

**Mnemonics**

- Strategies used for organizing material to be learnt in such a way that encoding and recall is facilitated.
- These are short, verbal devices that help form association between material to be learnt and material that is familiar and is already stored in memory.

**Method of loci**

- Associating names, people, or objects to be remembered with places you are familiar with e.g. you have to learn names of six famous people. You mentally place each one in separate room of your home. For learning you start, mentally, and enter from the main door and using the way you usually do; you find one person in one room. The same is repeated for recall.

© Copyright Virtual University of Pakistan

Ancient Greeks used this method. Loci is the plural of locus i.e., place.

**Acrostic-like Mnemonic**

- Learning material by using the first letter of each word to be learnt as a cue e.g., BODMAS, or USA, or MIS (the names of the tiny bones in the ear).

**Acronym Mnemonics**

- Each letter in a word to be retained in memory represents a name or familiar piece of information e.g., Joseph L.D can be learnt with reference to your friends Javed, Omer, Sana, Ehsan, Pasha, and Hassan who live in Lahore's Defense.
- Or the famous example by Zimbardo and Gerrig: Roy G.Biv can be associated with the colors in the spectrum i.e., red, orange, yellow, green, blue, indigo, violet.

**Short-term Memory As Working Memory**

- Short-term memory is not a single system but a process that consists of a number of components.
- Alan Baddeley's Theory
- Short-term memory is a three-part working memory'.

**Components of Working Memory**

- ***Central Executive***

Coordination of material to focus on during reasoning and decision making; two sub components.

- ***Visuospatial Sketch Pad***

Concentrates upon visual and spatial information.

- ***Phonological loop***

Holds and manipulates material related to speech, words, and numbers

**LESSON 24**

# MEMORY II

*Long-Term Memory*

This system stores information on a permanent or relatively permanent basis; the information thus stored may or may not be retrieved easily. The term *long-term memory* is somewhat broad meaning phrase because it can refer to facts learned a few minutes ago, personal memories many decades old, or skills learned with practice. Generally, however, long-term memory describes a system in the brain that can store vast amounts of information on a relatively enduring basis. When you play cricket, remember what you had for dinner last night, recall your first birthday party, and remember how to play a board game, or to sing along to a favorite song; for all this you draw on information and skills stored in long-term memory.

Psychologists have different theories about how information enters long-term memory. The traditional view is that information enters short-term memory and, depending on how it is processed, may then be transferred to long-term memory. However, another view is that short-term memory and long-term memory are arranged in a parallel rather than sequential fashion. That is, information may be registered simultaneously in the two systems.

There seems to be no finite capacity to long-term memory. People can learn and retain new facts and skills throughout their lives. Although older adults may show a decline in certain capacities, for example, recalling recent events. They can still have new experience even in old age. For example, vocabulary increases over the entire life span. The brain remains plastic and capable of new learning throughout one's lifetime, at least under normal conditions. Certain neurological diseases, such as Alzheimer's disease, can greatly diminish the capacity for new learning.

Psychologists once thought of long-term memory as a single system. Today, most researchers distinguish three long-term memory systems: episodic memory, semantic memory, and procedural memory: memory related to incidents, language, and procedures.

*The Components of Long-term Memory*

***Also known as modules of long- term memory:***

- Declarative memory
- Procedural memory
- Semantic memory
- Episodic memory

**Declarative Memory**
The module responsible for factual data, dates, faces, names etc.

**Procedural Memory**

The memory center for skills and habits e.g., playing cricket, driving a car etc. It refers to the skills that humans possess. Tying shoelaces, riding a bicycle, swimming, and hitting a football are examples of procedural memory. Procedural memory is often contrasted with episodic and semantic memory. Episodic and semantic memory are both classified as types of declarative memory because people can consciously recall facts, events, and experiences and then verbally declare or describe their recollections. In contrast, non-declarative, or procedural, memory is expressed through performance and typically does not require a conscious effort to recall.

**Semantic Memory**
Storehouse for facts and general knowledge about the world e.g., historical facts, or scientific formulae. It refers to our general knowledge of the world and all of the facts we know. Semantic memory allows a person to know that the chemical symbol for water is H2O, or that cats have a tail etc.

© Copyright Virtual University of Pakistan

**Episodic Memory**
Memory for information pertaining to life events, episodes, biographical details. It refers to memories of specific episodes in one's life and is what most people think of as memory. Episodic memories are connected with a specific time and place.

**Associative Module**
A strategy or process whereby material is recalled by thinking about related information e.g., whose son was the Mughal Emperor "Shah Jehan"?

**Priming and long-term memory**
If an individual is exposed to a piece of information earlier, then later on it is easier for him to recall the same or similar pieces of information.

## Explicit and Implicit Memory

**Explicit Memory**
Recollection of memory that is intentional and conscious e.g., date of your interview, or the day when your course started. Explicit memory refers to the deliberate, conscious recollection of facts and past experiences. If someone asked you to recall everything you did yesterday, this task would require explicit memory processes. There are two basic types of explicit memory tests: recall tests and recognition tests.

**Implicit Memory**
**There are many pieces of information or memories that are stored in our system but which we are not aware of at the conscious level. These can and do affect our behavior and performance later e.g., childhood fear of blood hindering the performance of becoming a doctor.**

Implicit memory refers to using stored information without trying to retrieve it. People often retain and use prior experiences without realizing it. For example, suppose that the word 'ostentatiously' is not part of your normal working vocabulary, and one day you hear the word used in a conversation. A day later you find yourself using the word in conversation and wonder why. The earlier exposure to the word primed you to retrieve it automatically in the right situation without intending to do so.

### *Single Process Approach*

Some psychologists do not agree with the idea of three sequential stages of memory; they had a single process approach i.e., levels-of- processing theory.

*Levels-of- Processing Theory*

- What is most important in the process of memorizing or learning material is the degree to which the material is mentally analyzed.
- How much of new information will be remembered will be determined by the extent or amount of information processing that takes place when new material is encountered.
- The information will be more and more likely to be remembered as the initial processing becomes more and more intense.

*Information that is paid little attention will not be processed thoroughly, will remain at the shallow level of memory, and will be forgotten soon.*
On the other hand information that receives greater attention is processed thoroughly; such information enters the deeper level of memory.

**Shallow Level Memory**
This is the physical and sensory aspect of information.

*Deepest Level Memory*

- Meaning of information is considered important in analysis of information.
- A wider context, rather than a limited or restricted, perspective may be taken.

© Copyright Virtual University of Pakistan

- Associations between what this information means, and the already existing and known broader networks of knowledge, may be drawn

*Recall and Retrieval of Long-term Memory*

- Why do we remember certain events very vividly even after a very long time?
- Why can't we remember something that we thought we know very well?
- Are the memories that we can recall very clearly, really exact reproductions or distorted, or may be exaggerated?

*Flashbulb Memories*

- The memories that are as clear and vivid as a snapshot.
- Such memories are of events that are important for us, are specific, or surprising or astonishing e.g., an interview room, an accident, first day at class.
- Although flashbulb memories are vivid, clear and detailed, still they may be lacking many important details.
- At times the recall may be very different from the actual event whereas the person believes he is remembering right.
- Many elements may be missed and many added.

*Tip-of-the-tongue Phenomenon*

Inability to recall events, details, or information that we thought we knew very well.

*Causes of the Tip-of-the-tongue Phenomenon*

- Information overload
- Accumulation of pieces of similar and confusing information
- Preoccupation]

*Retrieval Cues Are Helpful!!!*

*Autobiographical Memory: The Episodic Aspect of Long-term Memory*

- Autobiographical memories are recollections of past life events, circumstances, episodes, and happenings.
- These memories, although they seem perfect to us, may also be distorted, exaggerated, changed.
- ***Schemas:* According to Bartlet information is remembered in terms of schemas i.e., general themes in memory that contain relatively little specific detail.**
- Irrelevant or unimportant details are discarded.
- People's understanding of the situation, their expectations, and awareness of others' motivation affect memory and recall.

*Forgetting*

Forgetting is the inability to retrieve or recall information from the long- term memory.

**Forgetting may occur due to a number of factors such as:**

- Information discarded / decayed due to the non- use of the learned material.
- At times we know something, but are unable to access and retrieve it properly.
- Hermann Ebbinghaus, a German psychologist, was the first one to study the phenomenon of forgetting by using himself as a subject for his own experiments.
- Used non- sense syllables; in sets of three; one vowel in between and the two consonants at the ends e.g. FIW, BOZ etc. His experiments, indicated that forgetting occurred systematically; in the initial stages (the first hour and, in all the first nine hours) forgetting was most rapid, but then, the rate of forgetting decreased and slowed down and did not change much with the passage of time.

© Copyright Virtual University of Pakistan

- Forgetting should not be understood as a problem alone, since it has some advantages too: it helps us discard irrelevant information and enables us to learn new things.

*Theories of Forgetting*

Why do we forget???

- Several theories have been posed to explain this phenomenon:
  1. Decay theory of forgetting
  2. Interference theory of forgetting
  3. Repression

**Decay Theory of Forgetting**

The oldest concept which states that stored information decays and is disintegrated with the passage of time.

**Criticism against the decay theory**

1) It can be taken as a general explanation of how forgetting takes place, but can not be accepted as the actual reason, i.e. the process of forgetting.
2) At times recollection of memories occurs after a long passage of time, which is an experimentally proven fact, and this theory fails to explain this phenomenon.

*As decay theory could not explain the actual process of forgetting, another theory emerged, called interference theory of forgetting.*

*Interference Theory of Forgetting*

- Interference results when the recall of the learned phenomena is blocked/ displaced by other information.
- John Jenkins and Karl Dallenbach (1924) were the first ones to experimentally prove the role of interference in forgetting.
- Experiments on students showed that they recalled non- sense syllables relatively well after waking from the sleep, than when they were fully awake for the whole day.
- Maximum forgetting occurred when they were awake than when they were allowed to sleep which showed that interference of the activities and happenings has a relationship with forgetting.
- Interference, however, sometimes is found to be helpful in the sense that it improves our ability to remember important events of life; not the exact and true characterization, but the important portions/ episodes

**Retrieval of the learned phenomena may be influenced by the two processes:**

i. Proactive interference
ii. Retroactive interference

***Proactive interference***

Proactive interference occurs when the already stored memories come in between or interfere with the recall of the newly learned material e.g., you learned psychology this semester and sociology in the last semester. When exam was taken in psychology, material from sociology, rather than that of psychology, kept coming into mind.

*Retroactive interference*

Retroactive interference occurs when the newly learned material interferes with or blocks our ability to recall the previously learned material

In the psychology-sociology example, when examinations were taken, the memories of newly learned material (psychology) may interfere with recall of the formerly learned material (sociology).

*Repression*

- Repression: putting the undesirable thoughts, events and fears into the unconsciousness and trying not to remember it again.
- Repression is a Freudian concept". In spite of being sent into the unconscious, unpleasant feelings continuously influence person's attitudes and behaviors.

© Copyright Virtual University of Pakistan

***Improving Memory and Recall***

- Elaborative rehearsal
- Mnemonics
- Method of loci
- The Keyword technique: Pairing foreign word with a similarly sounding common word in native language in order to remember the foreign word e.g., pairing English "amaze" with "maze' in Urdu.

*The Encoding Specificity Phenomenon*

Information is best learnt and remembered at a time and place, or environment, similar to or same as the one where it was initially learnt.

**Mental Organization of Text Material**

When the material is being read for the first time, it should be in the memory.

*Taking Notes*

- Take cue notes instead of taking down everything.
- Listen and think too.

***Other Strategies for Better Memory***

- Keeping distractions away
- Chunking
- Rhyming
- Reading aloud
- Sleep intervals

*Improving Memory: Memory Skills for Students*

*Over learning*

- Learning the material over and over again.
- Very effective in case of natural science, mathematics or history.

*Mnemonics*

Short devices that help encode information better. These provide ready cues for quick and accurate retrieval.

*S - Q - 3R*

- A five- step approach. S-Q-3R is an approach for improved learning and recall of material to be learned.

  S = Surveying and skimming.
  Q = Questioning: asking questions about what one has read.

*3R's:*

***Read:*** *Going through the surveyed material thoroughly.*

**Recite:** Recitation makes learning active than passive and adds activity to learning.
**Review:** Reviewing and going through the learnt material from time to time
***REMEMBER!!!!! THE SEQUENCE OF THESE STEPS IS IMPORTAN***

**LESSON 25**

# MEMORY III

## Memory Disorders/Dysfunctions

Memory loss has long been considered as a result of aging, but now physicians believe that there must be some pathological reasons as well, that cause memory impairment: "Memory Cognitive Impairment" (MCI). Although the suffering individuals are capable of doing every day tasks independently, they also heavily rely on using diaries, calendars, reminders etc.

## Amnesia

- Greek word which means "forgetfulness".
- Loss of memory with other mental difficulties
- In old age, people are unable to retrieve memories.
- Includes two types of amnesia.
    1. Retrograde amnesia
    2. Anterograde amnesia]

## Dementia

- Severe and rare disease, mostly affects people in their 60's and the risk is doubled every 5 years after 60; at 80, one out of every five people develops dementia.
- Symptoms may include repeating things several times, speech problems, intellectual problems, and inability to remember the skills learned early in life e.g., dressing up, tying shoe laces, using knives and forks etc.
- The sufferer is irritable, withdrawn, rude, facing anxiety, depression, suspicious attitude, and aggressive.

## Alzheimer's disease

- Common cause of memory loss in elderly people.
- Progressive loss of memory including effect on person's language and recognition of people; also losing way, inability to plan things, difficulty in organizing daily tasks etc.
- Major symptoms include depression, lack of motivation, laziness, agitation, physical and verbal aggressiveness; recent events are forgotten; delusions and hallucinations may also occur.

## Huntington's disease (HD)

- Fatal disease that results in involuntary movements and cognitive impairment.
- Genetic disease that runs in families.
- It mainly affects important brain regions such as basal ganglia that have vital role in co-ordination and movement.

## Amyotrophic Lateral Sclerosis (ALS)

- Occurs mostly in adults, and is common in men than women.
- Develops in the age of 40- 70 but also occur in the twenties and thirties as well
- Affects motor neurons of the body (that bring messages from the brain to the different muscles of the body).

## Korsakoff's Syndrome

- Severe and often permanent loss of memory.
- Addicted/ long-term alcoholics are the sufferers of this syndrome.
- Memory impairment occurs because of brain damage caused by thiamine deficiency and alcoholism.
- Major symptoms; hallucinations, Impaired dietary intake, repeating information several times, and inability to remember things.

© Copyright Virtual University of Pakistan

## Motivation

### Ask Yourself

- Why do some students want to get an "A" in every exam, and some don't even bother about it?
- Why do the skydivers love to dive down from hundreds of feet above the ground?
- Why do some people some people run after money and some refuse even the most attractive job offers?
- Why do some people leave their country for earning money and some are contented and happy with whatever is available to them at home?
- Why people become doctors, engineers, social workers, pilots, army men etc?
- And to ourselves, why we want to learn/ know about the particular subject?

**The answer to all these questions can be explained by understanding the concept of motivation.**

### What is Motivation?

Motivation is a desire, drive, instinct or need that speeds up our behavior towards some goal.
Psychologists are interested in observing and evaluating the factors that motivate or direct human behavior.
A **MOTIVE** is a need or a want that causes us to act. **Motivation** involves **goal-directed behavior**, an interesting field of study that investigates what motivates us to initiate or take action to pursue a goal. Early theories focused on **instincts**, inherited automatic species-specific behaviors, and **drives**, physiological compulsions that we need to satisfy such as hunger (food).

Basically, there are two types of motives that are essential for the proper human functioning

I. **Primary/ unlearnt/ physiological/ biological motives**
II. **Secondary/ learnt/ psychological motives**

### I. Primary Motives

Concerned with all the biological/ physiological needs of the body. They are also known as unlearnt motives because they entirely include the basic drives such as hunger, thirst, need for sleep, air, excretion etc that do not need any sort of learning.

### II. Secondary Motives

Also known as the psycho- social motives because they involve people's appreciation or appraisal in order to live successfully in any society.

- Also important in the sense that they are the means of satisfying the primary motives such as work and salary, good marks and appreciation from the parents.
- These are a source of mental satisfaction as well.
- The important and interesting fact about motivation is that organisms keep trying to achieve the desired goal. When the goal is achieved, the motivation regresses and when not achieved, the person keeps on trying to achieve it.
- When one motive is satisfied, we start to move forward to satisfy the next need and so on.
- This is how struggle continues throughout our lives.

### Primary/Unlearnt/ Physiological/ Biological Motives

- The major primary motives are:
- Hunger
- Thirst
- Fatigue and sleep
- Pain
- Sex
- Excretion
- Air
- Warmth and cold

**Hunger**

- The most urgent and desirable need in all organisms including human and animals.
- Eating is related to the homeostatic mechanism of the body.
- Psychologists have done research on animals to observe the level of motivation, which showed that internal system, not only regulates the quantity of food intake but also the kind of food that has been taken.
- The systems that involved in when to eat and how much to eat is a complicated phenomena.
- It is a proven fact that hunger is not only related with the empty stomach; people whose stomach has been removed still experienced the sensation of it.
- The animals have taken larger amount of food when it contains low level of nutrients as compared to highly nutritive diet; showing that both animals and humans are sensitive about the nutritive value of food.
- Chemical secretions in blood: chemicals/ hormones secreted by the endocrine gland also play a crucial role in the hunger drive e.g., studies showed that when glucose (sugar) was injected in rats, they felt less hunger as compared to when they were given insulin which resulted in hunger pangs.

**What Role Does Brain Play in Hunger Drive?**

- Hypothalamus, brain's vital organ concerned with hunger and operates on it by regulating its activity i.e., food intake.
- In case of injury in hypothalamus, the most apparent change will occur in eating behaviors.
- Studies showed that when the rats' lateral hypothalamus was removed; it resulted in starving to death and they refused to eat anything when given food.
- When the rat's ventromedial hypothalamus was removed, it resulted in the opposite i.e. extreme overeating behavior; increase in weight by 400 percent than the actual weight.
- It is a known fact that hypothalamus regulates the huger drive yet it is not clear as to how it operates.

**External Factors in Eating Behavior**

- Societal rules and conventions.
- Learn eating patterns from past experiences.

**Eating-related disorders**

- Obesity
- Anorexia nervosa
- Bulimia

**Weight Set point**

- A certain weight level that the body strives to maintain.

**Metabolism**

- The rate at which food converts into energy and then is expended by the body.

**Managing and reducing weight**

- Reducing weight is a tough task so try not to gain too much of weight.
- Eat wisely and do not be tempted.
- Slow eating helps.
- Avoid junk/ fad food.
- Do regular exercise; aerobics do help
- Make realistic goals and pursue them strictly.
- If you failed in achieving the set goal try again and do not feel guilty.
- Reward yourself off and on…. after considerable intervals.

**Thirst**

- We can live without food for several days or even months, but without water, we can hardly live for few days.
- More than 75% of our body weight is due to the presence of water/ liquid.

© Copyright Virtual University of Pakistan

- The thirst drive is largely internal and includes three basic mechanisms: when salt concentration in our body becomes high, and then it triggers hypothalamus to act, resulting in thirst drive.
- Secondly, when fluid volume decreases in the circulatory process, then this drive is stimulated e.g. after injury when large amount of blood is wasted.
- Another important factor is the increase in the body temperature.
- The replenishment of water is very rapid; that is why we feel thirsty after a very short time.

**Fatigue and Sleep**

- Rest and proper sleep is very important for the effective functioning of species.
- After the hard work of the day, person becomes fatigued and needs adequate amount of rest in order to be fresh again next day.
- What causes fatigue is yet unknown, but chemical changes in the body that effect muscles may be the factor causing it; one cause is the excess amount of lactic acid in the muscles.

**Fatigue Can Be Psychological As Well As Physical**

- Frustration, anxiety, tension, worry, boredom etc are factors other than the physical ones causing fatigue in persons.
- In physical exertion, rest brings freshness and relief, but when the person is in stress or anxiety, rest will not be helpful.
- Partly, sleep is also related with the chemical activity in the body in which the brain, nerves, and muscles are all involved.
- The pattern of sleep is culturally based also; people make adaptation with the successive changes in lightness and darkness; e.g. Norway.

**Pain**

What makes pain a drive?

- Avoiding injury, scar or wound is what makes it an important drive.
- When pain persists for a longer period of time, then it become a drive to get rid of it.
- Some people respond quickly to pain; more than the normal healthy individual would do and some are less responsive to pain.

**Pain is a blessing in disguise!!!!!!**

**Sex Drive**

- Very essential drive for the survival and continuation of species.
- Societal and religious conventions, laws, and restrictions make it a more powerful drive for human beings.
- In humans, past experience, emotions and ways/ manner of expression play a very important role.
- In males, gland is a testis; androgens and other middleman hormones of pituitary are responsible for its expression.
- In females, organ is an ovary; estrogens (arousal) and progesterone (pregnancy) are important and vital glands for its expression.
- Sexual drive is largely dependent on the chemical secretions in the body, which is a proven fact by using animals as subjects.

**Excretion: Bowel and Bladder Tensions**

- The body has to get rid of the waste regularly.
- The satisfaction of this drive is very important to children as compared to adults for whom it has less importance.
- Toilet training in early childhood plays a very crucial role in the development of personality of the child later in life.

© Copyright Virtual University of Pakistan

- Harsh/ severe and too early toilet training causes sense of insecurity in the child;
- Withholding of bowel movements even when not required may result from it.
- Important thing to know about is that the bowel and bladder muscles are the last ones that come under the child's control, so the toilet training should be given when the child is physically strong enough and prepared for it.

**Air**

- Oxygen = Most instant and essential requirement of human body.
- Oxygen deficiency/ hunger can be felt when there is excess of carbon dioxide.
- Continual supply of oxygen to the brain is very important because, although brain uses very small amount of it but deprivation for only few seconds may result in anoxia or neural damage.
- Even during birth of the child, sufficient amount of oxygen is required; otherwise it may result into mental retardation or brain damage.
- At high altitudes oxygen deprivation may result into strange behaviors; person loses control over himself i.e. laugh or burst into tears very rapidly, memory becomes impaired, sense organs do not work properly or in severe cases, brain damage may occur after prolonged deprivation.

**Warmth and Cold**

- Every one, whether animals or humans is affected by weather; either it is cold or hot.
- Avoiding the extremes becomes the basic motive for all living beings.
- Our skin has separate receptor cells for warmth and cold.
- Body temperature is regulated by complex mechanism as it largely depends on two factors;
    i. The temperature in the external environment
    ii. The internal body temperature
- Brain's organ, hypothalamus, as with other basic drives, regulates the temperature of the body with respect to the external environment.
- Below 57 degree of normal temperature, body becomes stimulated; adrenaline and thyroxin are secreted, blood pressure rises, muscular activity increased, blood is transferred to the internal organs and tissues of the body rather than on the surface of the skin.
- On the contrary, in hot weather, the reaction of the body is entirely opposite; i.e. body become slow in its activity, perspiration appears, blood vessels dilates so that more blood become available on the surface of the skin for cooling, blood circulation is increased.

**Servo Control: For warmth and cold**

- To keep the body at constant temperature, many other adjustments also take place such as use of blankets, heaters, hot drinks etc in cold season and air- conditioners, fans, cold drinks etc in summer season___ such use is called servo control; also partly controlled by hypothalamus and exhibited by the animals also.

© Copyright Virtual University of Pakistan

LESSON 26

## SECONDARY/ LEARNT/ PSYCHOLOGICAL MOTIVES

- Besides the basic biological needs, the expression of psychological needs is also of great significance: through society and culture in which one lives.
- Non-satisfaction of these motives may lead to mental illness.

Main psychological needs are:

i. **Achievement**
ii. **Curiosity**
iii. **Need for appraisal**
iv. **Need for affiliation**
v. **Need for power**
vi. **Work as motive**

### 1.Achievement

- Self- actualization or attaining excellence in relevant domain is the characteristic feature of this motive.
- The need to achieve something, some object of desire, a goal, or position/status.
- The source of satisfaction is not just the achievement of the goal, but the very act of striving for it too.
- The level of the need for achievement varies from person to person.
- Some are high and some low achievers.
- Competition is an important element of this need.
- Achievement motivation is a significant variable in a competitive society.
- People with high motivation: Take and overcome challenges in order to succeed rather than finding an easy ways of achieving success.
- People with low motivation: Tends to avoid failure, finding easy way outs, not desire to take difficult tasks.
- Methods of measuring achievement motivation:
- **Thematic Apperception Test (TAT)** is used; series of ambiguous pictures are presented to the person and ask him to write a story on it.
- Instructions are given as that the story must have a beginning, middle and an end along with the title; who are the people, what they are thinking, feeling, wanting etc; what is going on and what will happen all depicts the needs, desires and motivation to succeed/ achieve.
- In short the subject describes the past, present and future along with the description of characters and their thinking and motivation.
- Factors Contributing to the Need for Achievement
    - Parents who are warm for their child as well as make high standards for their child; encouragement is given on becoming independent.
    - Siblings who are high achievers in their own domain.

### 2. Curiosity

- Think why a little child always wanting to break toys and things?
- Why children always asks questions of things they saw on TV, read it or listen from any one
- It is all their curiosity and need to explore in order to find answers of these puzzles.
- It is a significantly inborn but learned also: found in both humans and animals.
- Parents encourage their children's curiosity by satisfying their inquisitiveness.
- School also plays an important role; the teaching methodology adopted may encourage or discourage curiosity.

### 3.Symbolic Reward/ Appraisal

- Appraisal is a powerful motive for everyone; especially for children and animals
- Praising words, petting after doing well etc all serve as symbolic reward for the learner.
- The presence and the attitude of the more liked serves as a social reward for the learner e.g. child with his mother, dog with its caretaker etc.

© Copyright Virtual University of Pakistan

- Parent's approval and disapproval, liking and disliking towards the child all are included in symbolic rewards.

4. **Need for affiliation**
   - Urge/ desire to main a relationship with other people; making friends, social contact with other people.
   - Less desire to be isolated or alone.
   - Studies showed that females spend a larger span of time among friends and peers as compared to males.
   - Although the need for affiliation is a universal phenomenon, cultural differences do exist in its expression; some cultures have more group cohesiveness than others.
5. **Need for Power**
   - Desire to influence, hold or ruling over others in order to be recognized as powerful individual.
   - These types of people prefer to work in big organizations, businesses and other influential professions.
   - There also exists gender differences among males and females; men are more apt to take challenges and respond quite aggressively irrespective of women who are socially restrained and traditional in her behavior.
6. **Work**
   - Most of the people spent large span of time in their life at work; for this reason, psychologists take it as another powerful motive
   - Work serves as a powerful motive because it satisfies other motives also such as biological motives of hunger, shelter etc, sense of achievement, affiliation and decision-making.

**Theories/Explanations of Motivation**

i. Instinct Approaches
ii. Drive-reduction Approaches
iii. Arousal Approaches
iv. Incentive Approaches
v. Cognitive Approaches
vi. Maslow's Hierarchy of Needs

Different approaches that focus upon the biological, social, cognitive, and psychological factors.

**i. Instinct Theory**

- There is a biologically determined behavior pattern that we are born with, known as instincts; biological variables drive our behavior.
- All humans and animals exhibit certain innate tendencies, which are fixed, predetermined, and unlearned.
- Different behaviors are respective responses to specific instincts.
- Instincts are essential for the survival of the species.
- Instincts provide energy for action thus directing organism's behavior.

**Shortcomings of Instinct Approaches**

- Which are the primary and power instincts…18 as William Mc Dougall said or5759as Bernard proposed.
- If instincts are the main driving force, then how come different people behave differently under the influence of the same instinct? e.g. hunger or heat.

.

**ii.** Drive- Reduction Theory

- Our biological/ physiological needs create an aroused or tension producing state that motivates us to fulfill them.
- When the basic biological requirements are lacking, and the need is unfulfilled, then drive/ arousal is produced in the organism energizing it to obtain the requirement in order to satisfy the need.

**Drive:** An arousal or motivational tension that provides energy for action or behavior.

**Homeostasis:** A stable, well-maintained state of internal biological balance is required for the proper functioning of the body; homeostasis is the process whereby this balance is maintained.

***Primary and Secondary Drives***

**Primary Drives**: Entirely biological in nature i.e. hunger, thirst, sleep, sex, air etc

Primary drives are satisfied by reducing the underlying need e.g. hunger followed by food, thirst followed by water.

**Secondary Drives:** These are psychological as well as social in nature. Prior learning and experiences are what brings about such needs e.g. academic achievement.

**Criticism**

- What about behaviors directed towards maintenance, and even heightened, arousal?
- What about curiosity or risk-taking behavior?
- Is our behavior guided by drive-reduction alone, or by our goals too?

**iii. Arousal Theory**

- A certain level of arousal and excitement is needed by our system.
- We try to maintain that level of stimulation and activity; the maintenance may require off and on reduction or increase in the existing level, depending upon the circumstances.
- When our arousal state becomes too high, it needs to come down for optimal functioning and vice versa.
- Too high a motivational arousal may affect performance negatively; it may produce anxiety and irritability in the organism.
- Similarly too low an arousal may also have adverse effect e.g. performance of a person suffering from depression.
- A consistent, well balanced, and leveled arousal is needed for the optimal functioning e.g. in case of exams, athletics, interviews.

**iv. Incentive Theory**

- Motivational state of the organism is understood and explained in terms of positive or negative environmental stimuli.
- As opposed to the drive- reduction and arousal theory, this theory explains motivation in terms of external events that stimulates/ energizes the organism's behavior, rather than innate instincts or drives.
- Characteristics of the external environment are important variables in a person's motivation.
- Incentives are rewards that energize and drive our behavior.
- Any thing that provides us with a reward triggers motivation for action.
- Incentives may generate behavior even in the absence of an active, un satisfied, instinct or drive e.g. how can we eat a bowl full of ice cream even.
- When our stomach is full after a heavy meal?
- But in many cases drives and incentives go together and have a deeper effect.

**Criticism**

- What about the motivational process when an individual tries to fulfill needs although there is no apparent incentive present? E.g. working even when paid very little, and the job too is not matching with one's aptitude.
- What about behaviors when there is no apparent incentive available, in fact threat is involved? e.g. helping the people stranded in a house on fire.

**v. Cognitive Theory of Motivation**

Theories that give importance to the cognitive processes of the individual in explaining motivational process; thoughts, feelings, expectations, understanding and evaluating all are important when explaining the motivation of the person.

© Copyright Virtual University of Pakistan

**Expectancy- Value Theory**

Two types of cognitive processes underlie human behavior.

I. **Expectation:** The expectation, hope, or anticipation that our behavior will help us attain a certain goal.

II. **Value:** The perception, appraisal, or understanding of the value of the goal to us.

- The level of expectation and the value attached to it, together, determine the level of motivation.
- In case of a high expectation along with high value, the motivation will also be higher.
- But if any of the two is weak or low, the corresponding motivation will also be low
- Can you see the two operating in your exam and study behavior?????

**Intrinsic and Extrinsic Motivation**

Cognitive theories differentiate between intrinsic and extrinsic motivation.

***Intrinsic motivation:*** Motivation from within, or Internal motivation that energizes the person to satisfy or accomplish the goal; the goal is to attain enjoyment and personal satisfaction, in which no external tangible reward is involved e.g. altruistic behavior.

***Extrinsic motivation:*** Revolves around the tangible rewards such as money, social contacts.

- Studies shows that intrinsic motivation produces better results in terms of performance than the extrinsic motivation.
- When extrinsic motivation is more for the desired behavior than the intrinsic one, and it remains like that for long, then the intrinsic motivation eventually declines.
- e.g. a child has been given reward for doing neat and tidy homework, as he is less intrinsically motivated; eventually the entire focus of the child in getting reward after doing tidy homework rather than doing it otherwise.
- Teachers and parents should use extrinsic motivation, but with great care.
- Extrinsic motivation can be used to enhance the motivational level but not at the cost of intrinsic motivation.

**vi. Abraham Harold Maslow: 1908-1970**

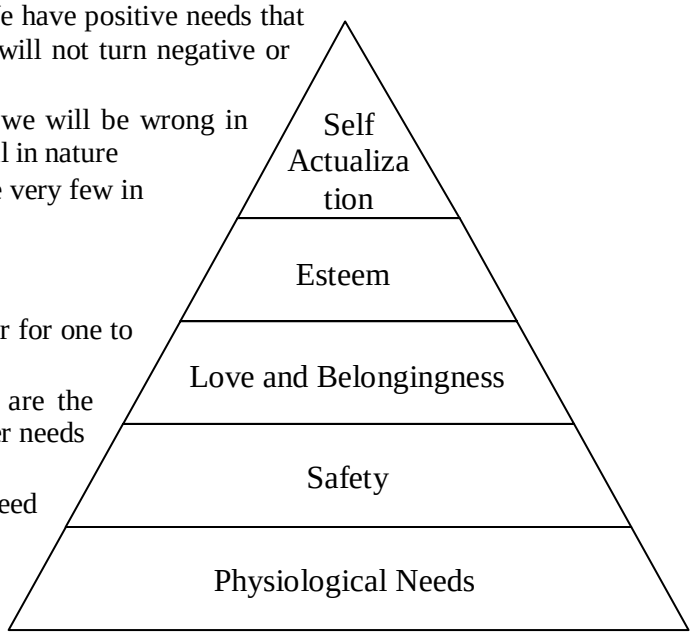
- American psychologist and leading exponent of humanistic approach
- Gave comprehensive theory of motivation.
- Found the prevalent psychology to be too pessimistic and negatively oriented.

**Key Points of Maslow's Theory**

- Psychology and the psychologist should look at the positive side of the human beings.
- There must be more to living than just being battered by a hostile environment, or by depraved instincts---- which may actually be leading to self-destruction.
- People's needs are not low level and base. We have positive needs that may become neutral in the worst cases, but will not turn negative or base.
- Human behavior does respond to needs but we will be wrong in saying that all our needs are only physiological in nature
- Needs motivate human action; such needs are very few in number.

**Maslow's Hierarchy of Needs**

- Basically a stage theory.
- The needs at one level have to be met in order for one to move on to higher order.
- The needs at the lowest/primary/base level are the physiological needs, whereas the highest order needs are the self-actualization needs.
- **Self-Actualization**: Most advanced human need based on the desire to grow and utilize one's potential up to the optimal level.



**Categories of Needs**

**Metaneeds**: based on a desire to grow rather than for meeting a deficiency: expressed in the need for self actualization

**Deficiency needs:** The absence of the underlying requirements triggers these needs e.g. physiological needs, love needs, or esteem needs

**Interactions and needs of Behavior**

**Physiological needs:** Fulfilled through: hunger/food; Pathology associated=over eating, anorexia

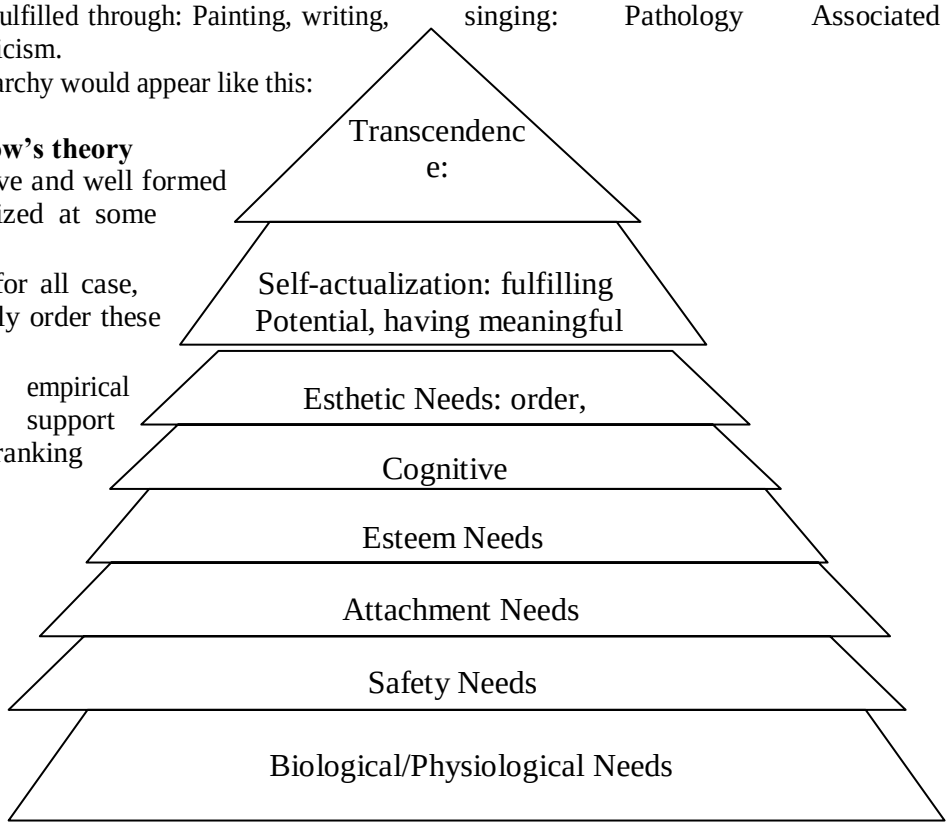
**Safety needs**: Fulfilled through: profession, job; Pathology associated= Phobias

Love and belongingness Fulfilled through: Marriage, friendship; Pathology associated= Antisocial personality

**Esteem needs:** Fulfilled through: Awards, honors, scholarships; Pathology associated =Depression

**Self-actualization needs:** Fulfilled through: Painting, writing, singing: Pathology Associated =Isolation, alienation, cynicism.

If expanded, Maslow's hierarchy would appear like this:




**Criticism against Maslow's theory**

Although a comprehensive and well formed theory, it has been criticized at some points:

- Can we actually, for all case, distribute and neatly order these needs?
- There is little empirical evidence to support Maslow's way of ranking needs.

**LECTURE NO. 27**

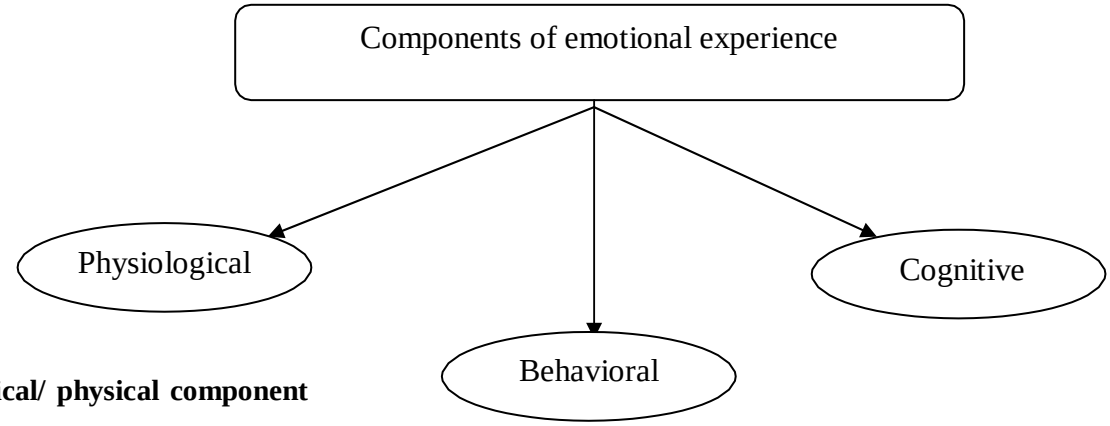
# EMOTIONS I

## Defining Emotions

- Derived from the Latin word **"Emovere" emotion means "to excite, stir up or agitate".**
- A response that includes feelings such as happiness, fear, sadness, grief, sorrow etc: it is the amalgamation of:

  i. Physiological arousal,
  ii. Expression of and
  iii. The conscious or the cognitive experience of the situation that influence behavior.

- In psychology, emotion is considered a response to stimuli that involves characteristic physiological changes—such as increase in pulse rate, rise in body temperature, greater or less activity of certain glands, change in rate of breathing—and tends in itself to motivate the individual toward further activity.
- As human beings, we have all experienced a range of emotions from happiness, sadness, love, hate, to indifference along with many other emotions.
- Emotions are feelings, highly subjective personal tendencies to respond to internal and external variables. Emotions have cognitive, physiological and behavioral components. Our cognitive appraisals and evaluations of events in our lives are key determinants to our emotional responses. Emotions are accompanied by physiological arousal of the automatic nervous system that leads to physical symptoms such as increase in respiration and heart rate. The behavioral component of emotions is expressed in our nonverbal body language including facial expressions.




## Physiological/ physical component

The physical component of emotion is a **psychological arousal** that usually accompanies the emotion the body is feeling. If the body did not experience this arousal, the intensity of this emotion would be greatly decreased. During the arousal, the body experiences a surge of powerful feelings known as emotions. People who can detect changes in their arousal level experience their emotions much more intensely than those who cannot detect the changes in their arousal level.

## Behavioral component

This component has been called the outward expression of our emotions. Body gestures, posture, facial expressions, and our tone of voice display what emotions we are feeling. Many of our facial expressions are universal. For instance, if somebody has a mad look on their face, it doesn't matter what language they speak or where they are from, chances are... they're mad. However, some emotional expressions are influenced by our cultures and society's rules for displaying emotions. For example, the guards outside of Buckingham Palace are not allowed to display any emotion on their face. Some people have described them as looking mad when in reality they are not.

**Cognitive component**

The cognitive component is how we interpret certain situations or stimulations. This determines which emotion our body will feel. For example; if you are alone, sitting in the dark, watching a scary movie, and you hear a loud noise, you may become scared... fearing that there is an immediate threat or that you are in danger. This emotional response to this imaginary threat is just as powerful as it would be to a real threat. Our perception to the imaginary threat is what makes it feel real to us and causes the emotion in our body.

**Mc Dougall divided "Emotions" into three types:**

1. **Primary**: Simple emotions as fear, happiness, anger, disgust etc.
2. **Secondary** Mixture of various instincts as curiosity, escape etc.
3. **Derived** Learn through experiences such as sadness, boredom etc.

- Have you ever thought why your heart pounds and you burst into tears on hearing dreadful news?
- Why people become afraid on seeing the snake?
- Why heart beats at a very high speed while you do jogging/ exercise?
- Why people face reddened on hearing the good news?

**YOU THINK IT IS A SIMPLE PHENOMENON AND YOU KNOW THE ANSWERS BUT IT IS NOT THAT SIMPLE!!!!**

- Our heart may pound even at the sight of someone we hate. Also, before an interview or presentation. Or when we are scared.
- AND
- Our face may blush and turn red when we are self conscious, or embarrassed, or angry.

So!!!!

- Same bodily changes may be manifest in different emotional experiences.

What makes the experience different is the accompanying expression and cognition.

**Assessing Emotions: Expressions in Emotions**

- Vocal, verbal and facial expressions play a vital role in determining emotions as well as our interaction with the physical world. In interpreting emotion, the important things are;
- **Acquaintance** with the other person.
- **Type of association** with that person.
- **Deriving clues from own emotional experiences** in order to understand other's experiences as well.
- Facial expressions clearly reflect the intensity of emotional experiences such as happiness, sadness, anger, and sorrow: all can be understood from emotional expressions. However these vary from person to person.

An adult's voice pattern clearly reflects their emotions. Variations in pitch or loudness express different types of emotions.

**Emotions and Cognition: Understanding Emotions**

- Some psychologists believed that memory and cognition are entirely separate systems that functions independently; some argue that we emotionally respond to the situation and then understand it cognitively.
- On the other hand, other believed that we first cognitively evaluate the situation and then exhibit the emotional experience we are facing at that time.
- Both point of view are somehow supported by the studies and the debate is still unresolved this may be due the fact that emotional experiences varies from situation to situation and so the cognitive appraisal and the emotional experiences.

**Role of Emotions in Every Day Life**

- Emotions make our life bright and enlightened, because without the experience of emotions, our life would be dull, uninteresting, gloomy and without any purpose

© Copyright Virtual University of Pakistan

- Psychologists identified number of functions of emotions that have a vital role in our daily life. They are:
- **Stirred up for the fight or flight action** After seeing a snake or after an un usual incident as natural disaster; the body is prepared to stirred up our bodies to face and deal them.
- **Modifying the future responses and behavior** Learning take place after the emotional state that prepares us to manifest appropriate behaviors in future, i.e., strategies should be adopted to minimize the aftermath of disasters and avoid us to face the snake.
- **Social interactions are enhanced** As emotions are both verbal and non-verbal so they help people to better understand the responses whether they are being expressed or not.

**Common Emotions: Range of Emotions**

There are number of basic emotion that have been identified by people in instance. They are:

- Happy
- Anger
- Fear
- Disgust
- Surprise
- Sadness.

**J.B.Watson talked about three main emotions:**

- Anger
- Love
- Fear

He proved in his experiments that infants are capable of these three primary emotions.
Psychologists have also identified other emotion or related expressions such as **contempt, shame, and startle.**

**Robert Plutchik (1984)**

Robert Plutchik (1984) become able to determine the basic emotions and their relationship through his studies; identified eight fundamental emotions. They are; **joy, anger, sadness, surprise, fear, acceptance, disgust and anticipation.** He named it as Plutchik's emotional wheel.

- The emotions nearer to one another are closely related, while those that are opposite to each other are conceptually opposites.
- The existence of only these emotions is the major short coming of this model; believed that emotions can better be understood by breaking them into components/ elements.

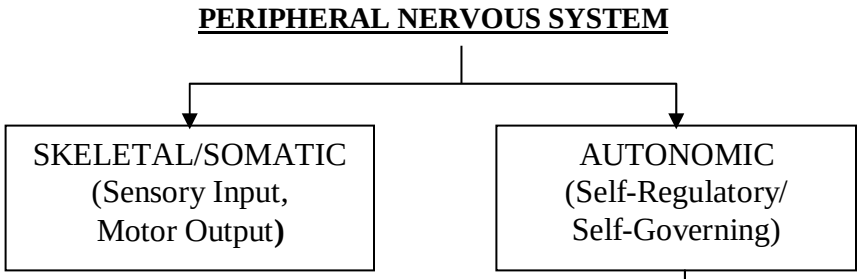
**Physiological component of emotions**

Many physiological changes take place in an emotional state, in the form of changes in:

- Heart rate
- Pulse rate
- Respiration
- Blood pressure
- Digestion and appetite
- Muscular activity
- Body temperature
- Perspiration
- Endocrine and neurotransmitter secretions
- Blood sugar
- Salivary gland activity
- Pupil dilation.

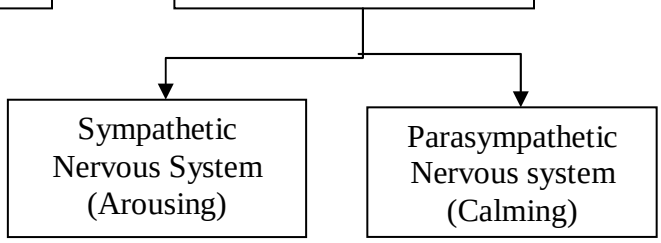
**Role of the Nervous System in Emotions**

- All the emotional experiences and their expressions are controlled and regulated by the autonomic or visceral nervous system.
- A.N.S. is an integral part of peripheral nervous system.




**A. Peripheral Nervous System**

**i. Autonomic (Self Regulatory / Self Governing)**




Sympathetic Nervous System (arousing).

- Parasympathetic Nervous system (calming).

**ii. Skeletal/Somatic (Sensory Input, Motor Output)**

**B. Autonomic Nervous System (A.N.S)**

- Considered as the "self governing or self-regulatory mechanism" because of our involuntary control over it.
- Control the glands and muscles of our internal organs such as heart (heart beat), stomach (digestion) and glandular activity.
- A.N.S. has a dual function; i.e. both arousing and calming.

Sympathetic Nervous System (S.N.S)

- This part of A.N.S. arouses us for defensive action.
- If something alarms or enrages someone, the sympathetic nervous system will accelerates heart beat, slow digestion, raises the sugar level in blood, dilates the arteries and cool the perspiration, making one alert and ready for action.

Parasympathetic Nervous System

***When the stressful situation subsides, parasympathetic nervous system started its activity.***

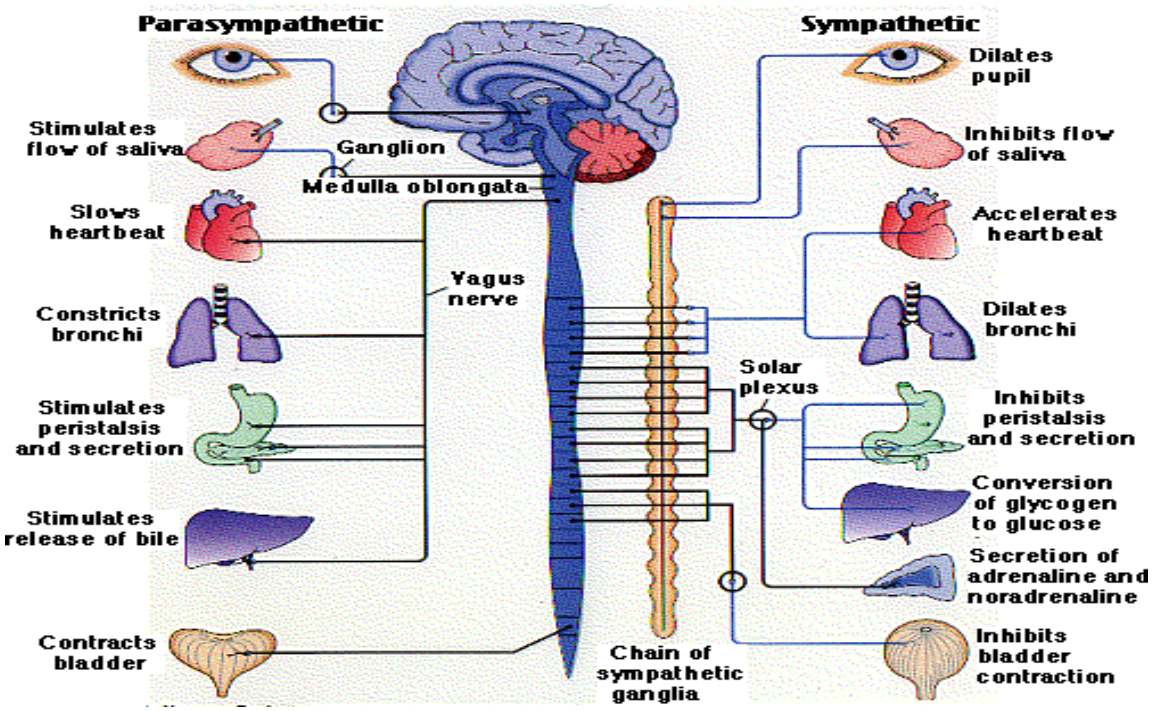
- It produces opposite effect to that of sympathetic nervous system.
- It conserves energy by decreasing heartbeat.
- Lowering blood pressure.
- Lowering blood sugar and so on.
- In daily life situation, both sympathetic and parasympathetic systems work together to keep us in steady internal state (homeostasis).

**Areas for Emotions in the Brain**

- A.N.S. is the only center of emotions in P.N.S.
- Cortical and sub- cortical structures are involved in emotions.
- Cerebral cortex is involved in relating the present and past emotional experiences; others involved in speed up the heart beat and, in learning emotional experiences
- Whereas sub- cortical regions are involved in organizing the emotional expressions.

© Copyright Virtual University of Pakistan

- Besides that, the right hemisphere is the most active in recognizing and expressing the emotions we are feeling. It also responds to emotions being conveyed by another person's body language or tone of voice. For example, an employer sarcastically says to an employee who comes to work late, "Glad to see you could make it today". If the employee had damage to his right hemisphere, he may only understand the words and not the sarcastic undertones, whereas a person, whose right hemisphere is functioning normally, would usually have a sarcastic response.
- The right hemisphere helps in our expression through our tone of voice and by controlling our facial expression. Since the right hemisphere controls the left side of the face, the left side usually portrays stronger emotion than the right side of the face. Research continues to accumulate information showing the mechanisms in the brain responsible for negative emotions reside in the right hemisphere, while the left hemisphere is believed to control positive emotions. Research has shown that patients who suffer from manic depression or major depression have decreased activity in the left prefrontal cortex where the positive emotions are produced.
- Much of the frontal lobes consists of areas that are involved with motivation, thinking, positive emotion, impulse control, and other emotional responses. Any damage that occurs to the frontal areas usually produces deficiencies in the ability to anticipate the results of our actions.



**LESSON 28**

# EMOTIONS II

## Physiological Changes during Emotions

- Psychologists believed that emotions can be measured **quantitatively** by observing different physiological responses of the individual = indicators of emotions.
- They also believed that they **themselves are different emotional states**.
- The major physiological changes that occur during emotions are:

### 1. Respiratory Changes

- The most apparent and obvious change during emotions.
- During emotions, respiration increases; occurs also when the person is happy or excited.
- But the production and secretion of saliva decreases as the process of respiration increases.

### 2. Pupillometrics

- Darwin was the first person who identifies this phenomenon.
- Pupil of the eye is very responsive during emotions.
- Dilates at favorable stimulus and contracts at unfavorable stimulus.
- Our pupil is also very responsive to favorable and unfavorable sounds and taste.

### 3. Changes in Blood Pressure and heart rate

- ***Variations in blood pressure occur during emotions; usually increases during an emotional state.***
- ***Heartbeat also increases during emotions.***
- ***Increased blood pressure and heightened heart rate for prolonged periods may lead to coronary heart disease.***

### 4. Glandular Responses

- ***During strong emotional states such as anger or fear, excessive amounts of hormones*** *adrenaline and nor adrenaline* ***are secreted into the blood stream.***
- *Due to this secretion;* ***Liver secretes excessive amounts of glucose directly into the blood stream that causes the blood to clot rapidly in case of injury or damage.***
- Blood pressure and sugar level rises, pulse become fast, air passage of the lungs enlarges and causes more air into the lungs, pupil enlarge, sweat appears all over the body particularly on hands, and temperature of the skin rises.
- Nor adrenaline helps to constrict the blood vessels, thus making it available to other parts of the body in case of injury.
- Pituitary and thyroid glands are also responsive to emotional states.
- All the glandular responses help to cope physically with the emotional as well as emergency situations.**Gastrointestinal Function**
    - ***Stomach and intestines are also very responsive to emotional states.***
    - ***They either start working at a very high rate or stop entirely.***
    - ***During strong emotional arousal, its working speed decreases and flow of blood is more towards the brain and the skeletal muscles rather than these organs.***

### 6. Neural Reactions

- ***Besides affecting visceral organs of the body, emotions also bring changes in the neural/ nerve activity.***
- ***Autonomic division of the P.N.S. is more effective in this regard in which sympathetic and parasympathetic nervous systems work successively.***

© Copyright Virtual University of Pakistan

**7. Galvanic Skin Response**

- ***When perspiration appears during emotions, two important changes occur in skin's electrical stimulation:***

O***Rapid generation of electromotive energy***

O***The electrical resistance of skin changes***

- ***These changes can be measured through a measurement of "Galvanic Skin Response (GSR)"; formally called " Psycho Galvanic Response (PGR).***

•Galvanic skin response, in combination with the respiration and blood pressure, is used for **lie detection** with people who are supposed to be guilty of some crime.

**8. Emotional Intensity and State of Arousal**

- ***Most of the times we are aware of our emotional states such as angry, excited or afraid, in all these states, the physiological conditions are the same e.g., heart beat increases, face blushes or becomes pale.***
- ***That is why we are unable, at times, to differentiate between different emotions and the associated arousal.***

**Other Common Bodily Changes during Emotions**

- ***Dryness of throat and mouth,***
- ***Muscle tension,***
- ***Weakness or fainting,***
- ***Trembling, and***
- ***Sinking feeling in heart or stomach***

**Theories of Emotions**

- ***Psychologists have attempted to define and explain the emotional arousal and physiological conditions that accompany them.***
- ***A number of theories have been developed in this regard, but the most famous ones are;***
- *James- Lange theory of emotions*
- *Cannon- Bard theory of emotions*
- *Schachter- Singer theory of emotions; (Cognitive Labeling Theory/ Two Factor Theory)*

Other important theories include:

- **Cognitive Appraisal Theory: Richard Lazarus**
- **Cognitive Theory: Magda Arnold**
- **Opponent- Process Theory: Solomon and Corbit**
- **Activation Theory: Lindsley**
- Theory of Emotions: Albert Ellis

**1. James- Lange Theory of Emotions**

- ***Earliest theory of emotion; now considered as the classical approach to emotions.***
- ***Given by American psychologist, William James and Danish psychologist, Carl Lange in the 19th century.***
- ***Emotional experience occurs in reaction to instinctive bodily events that take place as a result of an external situation: "…we feel sorry because we cry, angry because we strike, afraid because we tremble" (James, 1890).***
- ***Physiological changes create specific sensations, and our brain interprets these sensations as different emotions.***

•Theory asserts that awareness of the physiological responses determines our emotional arousal.

**Sequence of Events in James-Lange Model**

**Experience of an emotion-involving situation** i.e., find oneself in a waiting room before first job interview.

**Physiological responses** take place; visceral bodily changes are activated e.g. pounding heart, sweaty palms, respiration increases and other physiological states.

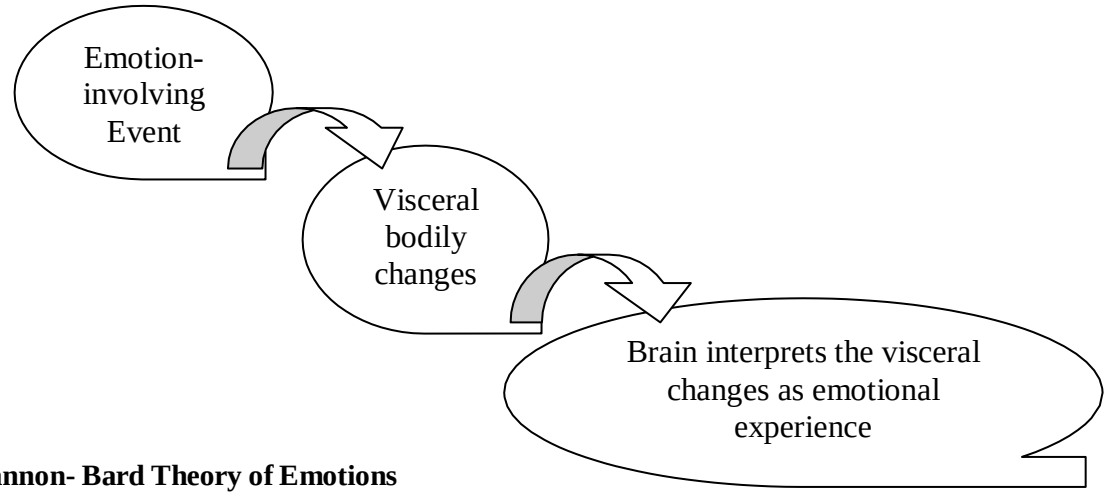
Brain interprets these physiological changes as emotional experience. In the case of the interview situation, fear.

**Criticism against James-Lange model**

- ***On most emotional occasions we experience the emotion quite immediately after a triggering stimulus e.g. hearing loud bang and being startled. Are our visceral responses that fast??***
- ***Many a time we don't even have enough time for this intermediate part. We feel the emotion immediately after the stimulus is registered e.g. feeling disgust at the very sight of someone we hate.***
- ***The most basic criticism of this theory is emotional experience (fear) results from the physiological responses after evaluating the situation.***
- ***On many occasions we experience physiological changes but no emotion e.g. patients of hypertension experience raised blood pressure but do not experience associated emotion. It is the case with joggers whose heart does pound but there is no emotional experience.***

How do same physiological changes create different emotional experiences???

.



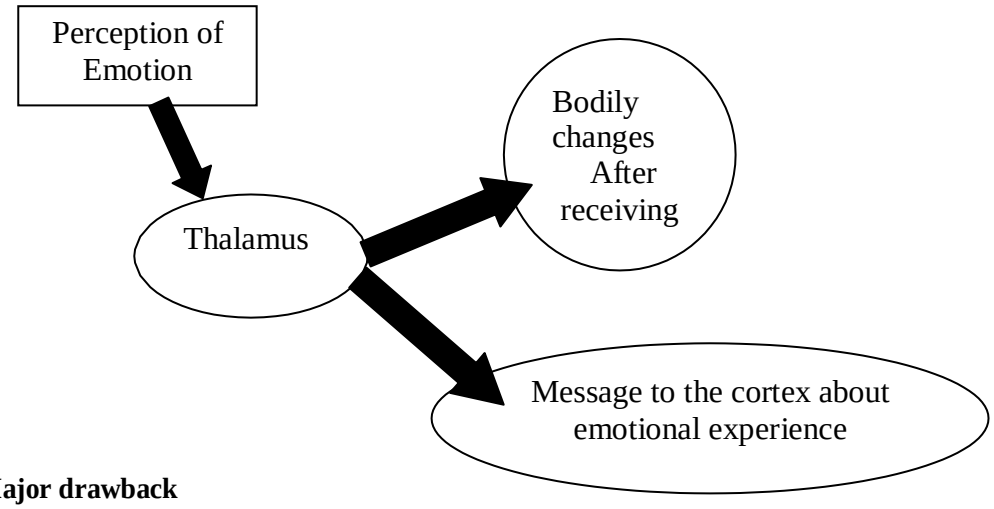

**2. Cannon- Bard Theory of Emotions**

- ***Given by Walter Canon and Philip Bard in 1920's***
- ***The theory assumes that emotional states and the physiological reactions work independently, but are triggered by the same nerve impulse simultaneously.***

*SEQUENCE OF EVENTS IN CANNON-BARD THEORY*

1. Perception of the emotion-inducing stimulus
2. Thalamus is activated.
3. Thalamus sends messages to two sites i.e.,
   a) The Autonomic nervous system, thereby producing a visceral response.
   b) The cerebral cortex receives a message regarding the nature of emotion being experienced.

SEQUENCE OF EVENTS IN CANNON-BARD THEORY



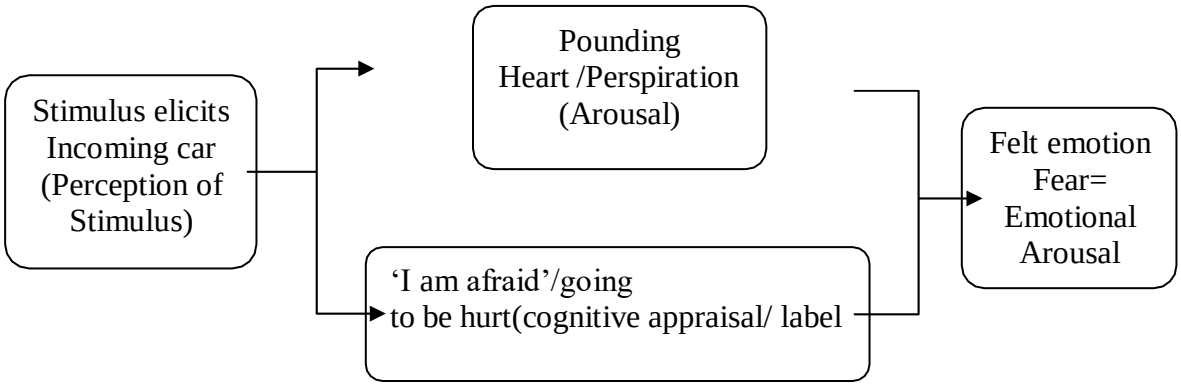

**Major drawback**

- ***Research has shown that it is the hypothalamus and the limbic system that are responsible for emotional experience, and not the thalamus!!!!!***

**3. Cognitive Labeling Theory/ Two Factor Theory of Emotions**

- ***Pioneer: Stanley Schachter and Jerome Singer (1962).***
- ***According to them, emotions result from the physiological arousal as well as the cognitive appraisal (evaluation) of the situation.***
- ***Arousal comes first and is general in nature.***
- Two forces jointly determine emotional experience:
  Nonspecific kind of physiological arousal, and
  The interpretation of the experience based on environmental cues.
- Both of these factors jointly determine the title/label of the emotion, and the meaning of one's reaction.
- We observe the environment and compare ourselves with others, and this help us identify our emotion.

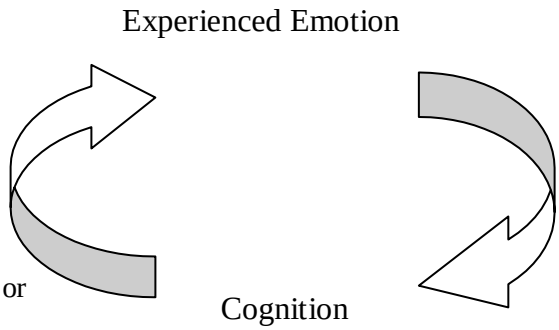
Schachter's- Singer Theory of Emotions




- Labeling of the emotional experience is entirely dependent on the experiencing individual__ one's own evaluation.
- Believed that physiological arousal determines the intensity of emotions.
- Theory includes the physiology cognitive processes as well as social psychology to investigate the nature of emotions. **Cognitive Appraisal Theory: Richard Lazarus**
  - ***Given by Richard Lazarus and his colleagues in 1968***
  - ***The theory maintains that emotional experience cannot solely be understood of its own, but understanding the environment is to be evaluated.***
  - ***Appraisal involves cognition, bodily responses and memory.***

**Richard Lazarus** Gave two basic types of appraisal

i. **Primary appraisal**: Evaluate whether the situation is threatening or not
ii. **Secondary appraisal**: Involve alternatives in order to deal with the perceived threat
iii. **Reappraisal:** Includes re evaluating the situation and alternative in order to see whether the judgment is true or not.




**5. Cognitive Theory: Magda Arnold**

- ***Given in 1966; one of the first ones who use the concept of cognition in emotional state***
- ***His model is known as <u>"Sequential model".</u>***
- ***The steps involved in emotions are;***

1. **Perception**; how the situation is being perceived.
2. **Appraisal;** Stimulus is beneficial or harmful to ourselves.
3. **Determining emotions** with regard to the prevailing situation.
4. **Expressing emotions**; Also accompanying physiological responses.
5. Finally, they all work to give idea whether to approach a situation or withdraw from it.

**6. Opponent- Process Theory: Solomon and Corbit**

- ***Given by Richard Solomon and John Corbit in 1974.***
- ***Theory maintains that every emotional arousal has an opposite, i.e. when one type of emotion is elicited, and then there must be an opposite that is there to suppress or cancel it.***
- ***In this way the emotional arousal remain at some base- line.***

**Base line ➡ State A ➡ State B ➡ Baseline**

**7. Activation Theory: Lindsley (1951, 1957)**

- ***Based his theory by observing that reticular system activates the cortex region in the brain that ultimately aroused/ excites the organism.***
- ***Believed that emotional arousal activate the reticular part of the brain present in the brain stem, that ultimately sends impulses to the thalamus and cortex and bring about emotional arousal.***
- ***And if the reticular part is at rest, then the emotional state is calm and relaxing.***

**8. Theory of Emotions: Albert Ellis**

- ***Given by American psychologist, Albert Ellis.***
- ***According to him, emotions do not result from a single cause, but originate from three different ways.***

O ***First, sensory- motor; involves brain and muscles.***

O ***Second, bio chemical stimulation; function to mediate processes of ANS, hypothalamus and sub- cortical regions.***

O ***Third, cognitive and thinking processes.***

To him, emotions do not exist independently but involves several stages in order to take place.

**LESSON 29**

# COGNITION AND THINKING

***Cognition is the***

- ***The process of knowing, as well as what is known.***
- ***Cognition refers to the higher mental processes.***
- ***It is through these mental processes that humans understand the world, process information, make judgments and decisions, and communicate knowledge to others.***
- ***Memory, intelligence, and language are important aspects of cognition.***

The term **cognition** is used in several different loosely related ways. In psychology it is used to refer to the **mental processes** of an individual, with particular relation to a view that argues that the mind has internal mental states (such as beliefs, desires and intentions) and can be understood in terms of **information processing**, especially when a lot of abstraction or concretization is involved, or processes such as involving knowledge, expertise or learning for example are at work. It is also used in a wider sense to mean the act of knowing or knowledge, and may be interpreted in a social or cultural sense to describe the emergent development of knowledge and concepts within a group that culminate in both thought and action.

**Cognitive Psychology**

***The branch of psychology that studies cognition, and related areas and issues.***

***Cognition is commonly known as Thinking***

**What Is Thinking???**

- ***The information that our mental faculties receive or generate is in the form of mental representations.***
- ***These mental representations may be in various forms e.g. in terms of words, visual images, or may be sounds.***

- Woodworth said that thinking is mental exploration and according to Ruch, thinking is a behavior in which at least some of the subjects that are dealt with are not physically present to sense but are represented by symbols, or in other words, thinking is actually a series of symbolic activities which represent previous learning experiences and an individual's thought processes.
- Most of the time, human beings are thinking. Even when they stop thinking or reading or writing, ones thought wonders on something else and this can be past, present or future or pleasant or un pleasant, or it may be even day- dreaming; they all are the part of thinking phenomena.

**Thinking**

***Thinking is the process whereby these mental representations are manipulated. The process of thinking transforms these representations into a new and different form. The transformation may be made:***

- ***For finding answers to questions***
- ***For finding solutions to problems***
- ***For finding facts and exploring reality***

© Copyright Virtual University of Pakistan

**Try to see what different types of mental images we experience!!!!!**

Close your eyes for a moment and try to:

- ***See the face of your mother?***
- ***Hear the voice of your favorite singer?***
- ***Feel how your favorite food tastes?***
- ***Feel how your favorite perfume smells?***
- ***Imagine how the prick of an injection feels?***

*Probably You Will Be Able To Do All of These Things*

***The stimulus is not there but we can feel it… mentally***

**How do all these mental processes take place???**

- ***Thinking is a subtle, and continuous process.***
- ***Our brain is the most intricate, complex, sophisticated, and yet 'quite' machine in the universe.***

**Fundamental Elements of Thinking**

- ***Mental Images***
- ***Concepts***

**1. Mental Images**

- ***Mental images are an integral part of the thinking process; in fact a major part of our thinking consists of these images.***
- ***These are mental representations of the objects and events that we are, or we have been, in contact with.***
- ***These images are not necessarily visual in nature; images can be related to all sorts of sensory experiences.***
- ***Psychologists have developed exercises for enhancing people's ability to work on their mental images, in order to sharpen their thinking capacity and thinking skills e.g. problem solving skills, brain teasing, creative thinking exercises.***
- ***There is no dearth of research available suggesting that mental images, when used as mental rehearsals can be very helpful in improving other skills, besides thinking, as well e.g. jogging, athletics, dancing, and public speaking.***
- ***Images are also used as important tools in*** Interventions designed for handling psychological problems e.g. Relaxation exercises, or meditation.

**2. Concepts**

- ***Objects, events, or people sharing common characteristics and properties are categorized and classified as one.***
- ***This categorization is known as*** *"concepts'.*
- ***Different categories are different concepts e.g. the concept of different objects, people, or events.***

**If someone asks you, "Who are your class fellows?" How will you respond?**

**You might say:**

- ***"One short girl, one medium height boy, a tall girl and a tall boy, one girl with long hair, and one boy who is bald".***
- ***OR***
- ***"Three boys and three girls"***

***This is a type of categorization based upon the concept of gender.***

The same applies to other objects and event e.g. furniture, fruit, clothes etc.

**Use of "Concepts" In Thinking World**

- Concepts are the categorization of objects, events, or people that share common properties
- When someone asks you, what is the main thing required for your room? One may start talking in terms of items like, bed, chairs, curtain, carpets etc, or 'furniture and fixtures' as a single category.
- These small categories reflect the operation of concepts and the process of cognition
- Concepts make possible the establishment of cognitive categories, and enable us to organize complex phenomena into a simpler and conveniently manageable form.
  Imagine how many things we are in contact with in the world around us. Do we, or can we name all of them all the time??????
- Newly encountered objects easily fit into our cognitive structure, if the conceptual category is already there. Therefore,
- If you know what a doctor does, then you can recognize any type of doctor, in any part of the world, in any type of attire, in any type of treatment setting.
- Imagine if we did not have concepts of fruit, vegetables, grains, furniture, or weather!!!!
- Concepts help to define, explain and elaborate complex phenomena into simple, understandable and usable categories, and they also include data from past experiences.
- There are three main types of concepts;
  a) Artificial concepts
  b) Natural concepts
  c) Prototype concepts

***a) Artificial Concepts***

•Concepts that have a unique set of traits and features.

•These concepts are easy to define and elaborate. e.g. a rectangle has two opposite sides equal, if it is not the case, then it is not a rectangle.

•But our every day concepts are much more difficult than these concepts. e.g. what is the definition of an animal?

***b) Natural Concepts***

Known, familiar and relatively simple concepts that have rather loose features to define and explain them.

- These concepts are not universal in nature___such as rectangle has two opposite sides equal, if it is not, and then it is not a rectangle. This is not the case in natural concepts.

People e.g. defining an animal can vary •They in their definition and explanation?**Simple and complex concepts**

- Some concepts are simple in the sense that they are clearly defined.
- When a concept is clearly defined, it is easy to distinguish an example from a non-example e.g the concept of a square, or an equilateral triangle.
- But some concepts are rather difficult to define. These are defined in a variety of ways, and marked by a set of complex features.
- These may be ambiguous, overlapping, and even abstract e.g. a bird, or a chair.

© Copyright Virtual University of Pakistan

- Most of the things that we are in contact with in our everyday life are not as easy to define as a square or a triangle e.g. defining '**obsessive- compulsive disorder'**.
- These may also involve the subjective experience of the person.

And what about the concept of a comfortable chair or an easy or a difficult task??????In such situations we need specific, and rather exact examples of a concept i.e., prototypes.

***c)*** **Prototypes**

- ***Examples of a concept that is typical and highly representative of a concept.***
- ***Prototypes are used to define and explain objects and ideas that cannot be defined in a clear-cut and straightforward manner.***
- ***E.g. the prototype of a table can be the 'dining table', or the prototype of a bird can be a 'crow'.***

**Agreement on prototypes**

- ***Usually people in a society, or those belonging to a particular discipline, are unanimous about the prototypes of a concept e.g. if we have to give a prototype of a vehicle, then we will talk about a 'car' and not and escalator' or 'elevator', although these also move and take us from one place to another.***
- ***On the other hand, if we are talking about varieties of 'stairs', then we can probably take escalators as an example.***
- What will happen if psychologists do not have a common definition of mental illness?
- How do concepts help in thinking?
- We live in a complex world of objects, ideas, and relationships. It is with the help of concepts that we understand this world.
- Concepts make it possible to communicate ideas, thoughts, and feelings even when the object of interest is not actually present.

**Thinking and Reasoning**

- ***Only humans can think in ways, which no other organism is able to, as they have the ability to contemplate, analyze, recollect, and plan out, and carryout those behaviors.***
- ***Humans are the only ones who are capable of using*** *foresight* ***as well as*** *hindsight*
- Even when we are not thinking, our mind wanders on present, past, future, pleasant or un pleasant, favorite or not so favorite things.

And even we are dreaming or day- dreaming; actually it is also a form of thinking.

**Reasoning**

- ***It is the ability to use reason, logic, past experience, and learnt information for mental processing.***
- ***For decision-making, and problem solving etc.***

**Deductive Reasoning**

- ***Deductive reasoning is the process whereby logical conclusions, inferences, and implications are drawn by using a set of assumptions. These inferences are then generalized over, or applied to, specific cases.***
- ***The assumptions or premises that are used for drawing conclusions are thought to be true and base upon reality. In many cases they are considered to be unchallengeable.***

But at times these premises may turn out to be false when tested in reality e.g. all men are brave, or men do not cry.

- Evaluating syllogisms is a techniques used for studying deductive thinking.
- A syllogism contains a series of two assumptions or premises that are used for drawing conclusions e.g.
- All women are talkative.
- Anna is a woman.
- Therefore, Anna is talkative.

© Copyright Virtual University of Pakistan

- This type of deductive thinking is largely influenced by cultural backgrounds of people.
- It has been seen that people from more developed societies use rather.
- Abstract and logical thinking, which they acquired through their experience, and learning.
- People from less developed cultures mostly rely on **concrete modes of reasoning.**
- This sort of difference is largely due to the type of high quality, sophisticated education, variety of learning experiences, and the pressure to think logically and independent.

**LESSON 30**

## THINKING, REASONING, PROBLEM- SOLVING AND CREATIVITY

### Inductive Reasoning

- *Specific cues are used for drawing inferences.*

### Inductive Thinking

- *By using observation, knowledge and experience, different sets of inferences are drawn about the phenomenon of interest.*
- *Small bits of information are used to draw the general conclusion.*
- *The person uses his or her observation, knowledge, and experience of specific case and infers general rules.*
- *For example, if you have been noticing that your teacher is very soft spoken, usually marks you present even when you are late for the class, and forgives your mistakes, then you might take chance for late submission of your assignment.*
- *The major shortcoming of this type of thinking is that the conclusions may be biased, or the evidence used for drawing conclusions may be invalid, insufficient, or may be just a chance occurrence. Whereas appropriate conclusions have to be unbiased.*

### Thinking and Decision- Making

- *It is one of the most complicated forms of thinking.*
- *Cognitive psychologists are still focusing on the components and processes that underlie this type of thinking.*
- *An important area in which the cognitive psychologists are most interested.*
- *For many years psychologists have attempted to explain the processes involved for decision making, and solving problems. The most famous examples of which are*
- *Thorndike's trial and error problem solving.*
- *Kohler's insight problem solving.*

### Mental shortcuts

Algorithms and Heuristics

- *Algorithms: A rule, if it is applied, ensures the solution to the problem.*
- *Algorithms are always accurate.*
- *We do not necessarily understand their logical basis e.g. algebraic formula*

### Algorithms and Heuristics

*Algorithms:* ***A rule, if it is applied, ensures the solution to the problem.***

- *Algorithms are always accurate.*
- *We do not necessarily understand their logical basis e.g. algebraic formula*

Heuristics: **A rule of thumb that if used can be effective in finding solutions to problems, but may not ensure or guarantee this.**

- *For example rules for playing naught and crosses, or preparing only the 'important' parts of the course for the exam.*

### Problem Solving

- *Thinking for the sake of finding solutions to problems.*
- Three major steps are involved in solving a problem.
  i. Preparation for finding the solutions

ii. Producing the solutions
iii. Appraisal of the solutions that have been generated

There are two types of problems:

a. Well- defined problem.
b. ill- defined problem.

**Well- Defined Problem**

- *Clear, definite and well-formed problem. Means of solving that problem are available. E.g. when solving the mathematical equation in which the problem is rather difficult, but the method used to solve it is direct and available.*

**Ill- Defined Problem**

- *Indefinite, unclear, ill- formed problem whose nature is not specifically defined and the ways for solving them is also difficult__ how do we build the morale of the crowd when their own team is losing the match???*
- *. In this, the problem is not specific and so the solution.*
- *The main shortcoming of this type of problem is that it is not possible to draw the immediate and absolute conclusions and solutions of the problem.*

**Kinds of Problems**

***Problems are typically of three types***

- *Arrangement problems*
- *Problems of inducing structures*
- *Transformation problems*

***Arrangement Problems***

- *Solutions of the problems require rearrangement and re evaluation of the components so that certain criterion will be satisfied*
- *There are a number of solutions to certain problems, but there are only specific solutions that fulfill certain requirements e.g. solving mathematical equation*

***Problems of Inducing Structures***

- *It refers to the problems whose solution depends on the relationship of components among them so that new construct which has a relationship can be developed.*
- *e.g. see and tall what number comes next? 221- 412- 321- 512- 421- 612-. Firstly, one has to consider the existing relationship between these numbers then make out the other relationship*
- ***521-712*

***Transformation Problems***

- *Problems that require understanding and that should be solved in a manner that involves series of methods so that the initial problematic state can be changed into the goal attaining state.*

**Steps for Problem Solving**

***Four steps are important for solving certain problem.***

- *Means- ends analysis:* ***Repeated testing of the behavior in order to lessen the distance between the goal and current existence e.g. taking instructions or asking questions for solving puzzles***
- *Sub goals:* ***Divide the problem into small element and then solve them in steps or sequentially***
- *Insight:* ***Instant awareness of the relationship among the existing components, which***

***formally seems independent of each other. A German psychologist Wolfgang Kohler was one of the first psychologists who observed this phenomenon, especially when facing challenges.***

- *Evaluation of solution*: **The final step in problem solving which involves appraising the existing solution of the problem to demonstrate whether the solution is adequate or not.**

**Impediments to Problem Solving**

***There are various factors, which serve as an obstacle in finding solutions. They are;***

- ***Functional fixedness.***
- ***Mental set.***

*Functional fixedness* ***is the capacity to think about certain phenomena in its most typical use or form.***

*Mental set is the tendency* ***to think of a solution in a most old patterned ways___old means of finding and answering problems.***

**Creativity and Thinking**

- *The word "creative" is derived from the Latin word "creare" means "to make" or Greek word "Krainein" means, " to fulfill".*
- ***Creativity may be defined as the innovative, novel responses and ideas into a harmonious whole/ form.***
- ***Creativity can be flourished by two means;***
- ***Inspiration.***
- ***Hard work.***

Stages in Creative Thinking:

- ***Creativity mainly involves four steps;***
- ***Preparation,***
- ***Incubation,***
- ***Illumination,***
- ***Verification,***
- ***Revision.***

i. **Preparation:** It includes assembling or combining the material and think thoroughly about it.
ii. **Incubation:** After thinking intensely about the certain problem, the person lets his mind free by putting the problem aside and let its solution incubate in the mind.
iii. **Illumination:** It also refers to as " insight" when innovative ideas are instantly generated_ a sudden flash comes to mind when one is brainstorming at it. Scientific innovations are one of the examples.
iv. **Verification:** Evaluation of the problem to find out whether the solution is correct or not
v. **Revision:** This involves the whole of the above steps involved that should be used in order to reach on some solution

**Factors Associated With Creativity**

- ***The main factors that may contribute in enhancing creativity is***
  - *i. Divergent thinking,*
  - *ii. Convergent thinking.*
- ***Divergent thinking involves varied thoughts and solutions to a certain problem.***

- ***Convergent thinking includes various thoughts and solutions for a particular problem.***

**Creative thinking is '*GOING BEYOND'***

Creative thinking is going beyond*:*

- ***The obvious***
- ***The defined***
- ***The laid out***
- ***The conventional***
- ***The common***
- ***The usual***

**Creative thinking is:**

***The ability to generate a variety of unusual solutions to a problem***

**Creative thinking is:**

- ***Open***
- ***Original***
- ***Imaginative***
- ***Uninhibited***
- ***Exciting***
- ***Fulfilling***
- ***Lateral***
- ***May be stray and wild at times***

**Lateral versus Vertical Thinking**

*Lateral thinking*

- ***Finds new ways of looking at things***
- ***Avoids looking for what is "right" or" wrong".***
- ***Analyzes ideas to generate new ideas***
- ***Considers the irrelevant***
- ***Progresses by avoiding the obvious***

*Vertical thinking*

- ***Tries to find absolutes***
- ***Seeks continuity***
- ***Finds what is right: seeks "yes" or "no" justifications***
- ***Looks for stability: rejects irrelevant information.***
- ***Uses established patterns & considers the obvious.***

**Lateral Thinking**

***A deliberate process and set of techniques for generating new ideas by changing an individual's or team's way of perceiving and interpreting information; as opposed to vertical thinking i.e., a logical step-by-step process of developing ideas by proceeding continuously from one bit of information to the next.***

**Lateral/Creative Problem Solving**

- ***Reversal Technique: examining problem and turning it completely around; inside out or upside down.***
- ***Analogy Technique: developing a statement about similarities between objects, persons, or situations.***
- ***Cross Fertilization Technique: asking experts from other fields (totally different fields) to view the problem and suggest methods for solving it from their own area of interest.***

**Assessing and Examining Creative Thinking**

- ***Name all the things you can think of that are* round/circular *in shape.***
- ***List as many white, edible things as you can.***
- ***List all the uses that you can think of a watermelon.***
- ***List all the possible uses of a pencil.***
- ***Mr. X has been told a number of times to be in office at 9 but he is always late. WHY???***
- ***Ms. Q has a number of clothes, but she has been wearing the same dress for the last two weeks. WHY???***
- ***Your rich client comes to your office. You offer him coffee but he refuses. WHY???***

**"You can become what you imagine yourself to be!!!"**

**As If:**

***Appearing for an interview***

*Imagine*

**As if** ***you were to introduce yourself to an interviewing board.***

*Think*

**As if** ***you were introducing yourself to an interviewing board.***

*Act*

***As if you were actually introducing yourself to an interviewing board***

**Thinking Loud**

***Your friends Z and X have stopped talking to each other, whereas they have to work together in the same office.***

***a: Think of as many reasons as you can of the dispute.***

***b: Think of as many ways as you can of a possible patch up planned by you.***

***Clearly thinking about all possible aspects of the issue before taking decisive action***

***The cases of shop lifting in a super market rose to such a high level that they had to increase the prices. They hired guards but that did not work much. However they finally found a solid solution.*** *How???*

**Concept Challenge**

***Challenging the established ideas for new solutions***

- ***Women should do house work.***
- ***In solving disputes all parties should have equal part in decision-making.***

**Cognitive Complexity**

***Persons who are high in cognitive complexity are interested in use of more philosophical and abstract ways of thinking___ these types of people give preference in using complex, abstract and intricate stimuli and thinking patterns. Comedy, jokes and humor is its best example***

**LESSON 31**

# PERSONALITY I

**What do we mean when we say:**

- *She has got a gorgeous personality!*
- *He has a powerful personality!*
- *He has a dull personality!*
- *She has a vibrant personality!*

In saying so, and while describing someone's personality, what are we referring to?

- The looks of a person? or
- The overall impression that one leaves on our mind? or
- The way a person behaves with us? or
- The way, as we feel, others treat a person?

**And what about when we say:**

- *He has a strong personality.*
- *She is a good decision maker.*
- *He has a strong will power.*
- *She is too sensitive.*
- *He is very aggressive.*

**Here while describing someone's personality, we are talking about:**

- *The feelings,*
- *Emotions,*
- *Cognitions, and*
- *Psychological make up of a person.*

**Definition of Personality**

Personality can be defined and understood in a number of ways:

- *Personality is the sum total of characteristics on the basis of which people can be differentiated from each other.*
- *Personality is the stability in a person's behavior across different situations.*
- *It can also be seen as the characteristic ways in which people behave.*
- *Personality consists of characteristics that are relatively enduring, and that make us behave in a consistent and predictable way.*

**Theories of Personality**

- *Also known as approaches to personality*
- *These are the approaches to understanding the "WHAT", "HOW", and "WHEN" of characteristics and features that make up an individual's personality.*

© Copyright Virtual University of Pakistan

**"WHAT": This part consists of:**

- *What is personality?*
- *What are the different aspects of personality?*
- *What variables account for these characteristics?*
- *What factors can have an impact, positive or negative, on our personality?*

**"HOW": This part consists of:**

- *How do these characteristics develop?*
- *How do we become what we are?*
- *How can we manipulate, improve, or modify our own, or someone else's personality?*

**"WHEN": This part consists of:**

- *When does personality develop?*
- *When is personality more pliable, and modifiable?*
- *When can others influence a person's personality more?*

**1. Psychodynamic Approach**

***Approach that focuses upon the unconscious determinants of personality i.e., psychologists belonging to this approach believe that unconscious forces determine our personality.***

**Unconscious**

- ***The part of personality, which we are not aware of.***
- ***Unconscious contains instinctual drives:***
    - ***Infantile wishes,***
    - ***Desires,***
    - ***Demands, and***
    - ***Needs***

These instinctual drives are hidden in the unconscious, and do not surface at the conscious level.
At the same time the person seeks satisfaction and fulfillment of these drives, as they can be a source of pleasure and satisfaction.

**Why are these drives hidden then?**

•Because they can cause conflict and pain if they became an obvious or overt part of our lives.
•Therefore, they are pushed into the depths of our unconscious.
Sigmund Freud, the most influential figure in the history of psychology, founded psychodynamic Approach. According to this approach the basis of motivation and behavior lies in inner forces: forces that are predetermined…forces over which humans have little control… which the person is not aware of i.e., these are the unconscious **determinants of behavior. Significance of Psychodynamic Approach**

It was the most influential theory of the 20th century.

- It affected psychology and related disciplines in a revolutionary manner.
- It gave an entirely new perspective to the understanding of behavior and mental processes, as well as mental illness.
- It was the first theory to raise the awareness that not all behavior is rational, well thought of, and planned.
- Besides giving an impressive, broad based, therapeutic approach, it provided a basis for understanding everyday life phenomena e.g. interpersonal relationships, aggression, and prejudice.

- Many other approaches built their paradigms on this approach, some by refining it, some by deviating from it. **Foundations of Psychodynamic Approach**

*Psychic Determinism*

***All behavior is determined i.e., it has a cause that lies in the mind/psyche.***

*Role of Unconscious*

***A significant part of our behavior is generated by unconscious forces.***

**Structure of Consciousness**

**Conscious**

***Contains thoughts and feelings which one is immediately aware of***

*Subconscious*

***Mind level below the level of conscious awareness***

*Preconscious*

***Part of the sub conscious that can be accessed by deliberate choice.***

**Unconscious**

**Part of the sub conscious that cannot be accessed directly, although impulses, ideas, and feelings may permeate out through other sources e.g. dreams, slips of tongue etc.**

**Dreams in Freudian Approach**

Dreams reflect unconscious needs, desires, and impulses.

**Symbolism**

- ***Dreams have two levels or types of content: manifest content and latent content.***
- ***The manifest content is in a symbolic form, converted into this form by the 'dream censor, a mechanism that ensures that sleep is not disturbed by unconscious desires, and those desires are presented in a socially acceptable form.***

**Psychodynamic Model of Personality**

The structure of personality consists of Id. Ego, and super ego.

**Id**

The source of basic drives; operates under the 'pleasure principle' i.e., wants immediate gratification of needs.

**Ego**

**Mediates the link of the self with the outside world, the ' real world', as well as between the id and superego; ego operates under the "reality principle' or the demands of the environment.**

**Super Ego**

- Governed by the moral constraints
- Opposes the id and represents the moral
- Demands of the family and society; it is the ' moral self' or the 'conscience' of a person.

**Oedipal Conflict and Electra complex**

*Oedipal conflict*

***(Also known as Oedipus complex). During the phallic stage, the male child begins to develop love and positive feelings for the mother: whereas negative feelings for the father since he is seen as a rival. But as the father is seen as too strong and powerful, the child fears retaliation and ultimately begins to develop ' identification' with the father.***

*Electra complex*

***The female child feels the same way toward the father, as the male felt for mother in Oedipal conflict, but ultimately chooses 'identification' with the mother.***

**Anxiety**

- ***An emotional state experienced as a result of felt threat to the self.***
- ***Anxiety arises when ego cannot cope too much of:***
- ***Demands of the id,***
- ***Demands of the ego,***
- ***External danger***
- ***In order to protect itself against anxiety and threat, ego uses defense mechanism.***

**Defense Mechanisms**

Ego defense system that may be distorting reality. A number of defense mechanisms may be used by us for coping with anxiety:

*i. Repression*

**Blocking unpleasant/ unacceptable thoughts by pushing them into the unconscious e.g. forgetting events of the painful childhood.**

*ii. Regression*

Reverting back to a stage that was satisfying e.g. a boss showing temper tantrums like a child; or acting like a baby.

*iii. Displacement*

**Redirecting the expression of unwanted desires or impulses to a substitute rather than the actual target e.g. beating children when a wife cannot express anger toward husband**

*iv.Rationalization*

***In order to justify one's behavior, one develops a socially acceptable explanation or reasoning e.g. going for a second marriage saying that the first wife was quarrelsome.***

*v.Denial*

***Refusing to acknowledge or accept anxiety provoking thoughts or impulses e.g. being a heavy smoker but saying 'I am an occasional smoker'.***

*vi. Projection*

***Attributing one's unwanted thoughts and impulses to others e.g. a person takes bribe and blames the organization for paying him not enough salary.***

*vii. Sublimation*

***Converting unwanted impulses into socially approved thoughts, feelings and actions e.g. disliking the in-laws but behaving in a very friendly manner, or becoming a stamp collector to overcome the impulse to steal.***

**Criticism against Freudian Psychodynamic Theory**

1. ***There is no scientific proof that many psychodynamic constructs, e.g. unconscious, exist.***

2. ***Psychic Determinism: Freudian approach is deterministic and leaves not much room for conscious, rational, decision making or personal will to act.***
3. It emphasizes the early childhood experiences too much.
4. It ignores the external variables and the environment.
5. Mostly criticized for its interpretation of the relationship between the two genders.
6. **The therapy based upon this theory is too time consuming and therefore expensive.**

**The Psychoanalytic Approach after Freud**

**The Neo Freudian**

The theorists who belonged to the Freudian school and supported it, but later digressed on some issues and differed from Freud.

**Basis of Neo-Freudian's disagreement with Freud**

- ***Their emphasis on the functions of ego, and the control that it had over routine-life activities.***
- ***The impact of social variables.***
- ***Their emphasis on the role of society and culture on personality development.***
- ***Freud's idea of the primary importance of sexual urges.***

**The neo-Freudians emphasized, more than Freud, the following:**

1. The role of current social environment.
2. Life experiences have a continuing influence and childhood alone should not be of prime importance.
3. Positive interpersonal relations of love, and social motivation have a significant role.
4. Ego functioning is more significant rather than id.
5. Development of self-concept is important.
6. Self-esteem is important.Significant neo Freudians

**Carl Gustav Jung**

The founder of the analytical school of psychology, Jung was mystical in his understanding and description of personality. He had a positive approach toward one's ability to control one's destiny.

**Jung's disagreements with Freud**

He disagreed with Fred on:

- The understanding and description of the genders.
- The nature of unconscious.

**Major Goal of Life**

Unification of all aspect of our personality:

**Main concepts**
Conscious and Unconscious
Introversion (inner directed), extroverted (outer directed).

**Libido**
**Energy for personal growth and development**
**Types of Unconscious**
Personal: Similar to Freudian view
Collective: ideas, and influences beyond personal experience, inherited from all generations of our ancestors and common to all humanity.

**Archetypes**
Part of collective unconscious; universal forms and patterns of thought. These include themes that can be seen in myths e.g. masculinity, femininity, good, evil opposites, motherhood.
Archetypes are the universal representations of a particular person, object, or experience, e.g. archetypes of mother, good, or evil.

**Adler's Approach**
Disagreed with Freud's emphasis on the significance of sexual needs.
**Main concepts:** Esteem, inferiority complex, birth order, will to power and style of life.
**i. We are a product of the social influences on our personality.**

**ii.** Goals and incentives drive us more than drives and instincts.
**iii.** Our goal in life is to achieve success and superiority.

**Primary human motivation**

- ***Striving for superiority; achievement of self-improvement, and perfection, and not superiority over others.***
- ***Inferiority complex, on the other hand, is the state when people feel that they have not been able to conquer, as adults, the feelings of inferiority that they developed as children.***
- ***Inferiority complex: the feeling of being less able than others.***

**Motivating Forces of Human Life**
**i. Feeling of inferiority, and a desire to overcome it through striving for superiority.**

**ii.** People are primarily motivated to overcome inherent feelings of inferiority.
**Birth Order**
Has effect on personality.
Sibling Rivalry

**Karen Horney 1885-1952**
She agreed with Freud on the levels of unconscious, anxiety, and repression. She emphasized childhood experiences, social interaction and personal growth.

**Disagreement with Freud**
Differed from Freud on primary impulses; impulses are not the main motivating force
Disagreed on Freudian position regarding the biological basis of differences between the males and females.
**Horney's Main Concepts**
**Basic Anxiety**
A major concept: if the environment is hostile and the child feels lonely and isolated, then this type of anxiety develops. It can be overcome by proper parental nurturing
**Basic Hostility**
Children develop such hostility if parents are over strict, punishing, indifferent, or inconsistent.
Children feel very aggressive and hostile but cannot express it. Repressed hostility leads to anxiety.

© Copyright Virtual University of Pakistan

**Social Interaction and Interpersonal Styles**
**The ways in which people interact with each other is important. There can be three consequences:**

- Moving away from others: seeking self-sufficiency and independence.
- Moving toward others: being compliant and dependant.
- Moving against others: trying to gain control, power, and independence.

**Neuroses**
Arise from emotional conflicts that arise from childhood experiences, and disturbances in interpersonal relationships in later life

**Erik Erickson's Theory of Psychosocial Development**

- **Student and follower of Sigmund Freud.**
- Broke with his teacher over the fundamental view of what motivates/ drives human behavior.
- For Freud, it was 'biology' or more specifically the biological instincts of life and aggression (Eros and Thanatos)
- For Erikson, the most important force that drives human behavior and which helps in the development of personality was **"social interaction"**

- His developmental theory of the **"Eight Stages of Man"** (Erikson, 1950) was unique and different in the sense that it covered the entire lifespan rather than **'childhood'** and **'adolescent development'**
- He believed that **social environment** combined with **biological maturation** results in a set of **"crises"** that must be resolved
- The individual passes through the "sensitive period" in different stages, which has to be resolved successfully before a new crisis is presented. The results of the resolution, whether successful or not, passed on to the next crisis and provide the foundation for its resolution
- He proposed eight stages of psychosocial development that have been discussed in detail in the section on cognitive development in lecture 11.

**2. Trait Approaches**

- ***Approaches that propose that there are certain traits that form the basis of an individual's personality.***
- ***These approaches seek to identify the basic traits necessary to describe and understand personality.***

**Traits**

- ***Enduring dimensions of personality characteristics that differentiate a person from others.***
- ***Trait theories do not imply the absence or presence of different traits in different people i.e., either/or situation. These do not say that if one trait exists the other does not.***
- These theories assume that some people are relatively high on some traits whereas, some are low on the same traits.
- The difference in people in terms of these traits is a matter of degree or extent to which the traits exist and manifest them. Some people have more of one trait and less of other ones.
- The degree to which a trait is present can be quantified e.g. "depression" is a tendency found in people; some have it more and some less
- Similarly " friendliness"; some are more friendly and some less
- The point to remember is that all traits may exist in all but these vary in the degree of impact

**Allports' Trait Theory**

- ***After skimming an unabridged dictionary, Gordon Allport identified 18000 separate terms that***

***could be used to describe personality.***

- ***After eliminating synonyms he came up with a list of 4500 descriptions***

***But the important question was that: WHAT WERE THE MOST BASIC TRAITS?***

**Allports' Basic Traits Categories**

***There are three classic categories of traits:***

- ***Cardinal traits***
- ***Central traits***
- ***Secondary traits***

**Cardinal Traits**

- ***A single personality trait directing most of the person's behaviors and activities e.g. affection, affiliation, kindness, greed.***
- ***The person's whole life, or behavior, is influenced by this trait. A person who served the poor and the weak all his life may have a very high degree of " kindness" or " nurturance".***

•Or a person who likes to hoard things, people, and wealth may be ruled by a high degree of " greed", or perhaps " inferiority".

**Central Traits**

- ***Do all people possess cardinal traits that encompass all aspects of their being?***
- ***PERHAPS NOT!!!***
- ***Most people develop a group or set of traits rather than a single one, that form the core of their personality.***
- ***Central traits are those major characteristics that make up the core of someone's personality.***
- Central traits usually number from 5- 10 in a person.e.g., affection, love for humanity, and nurturance will form one type of personality.
- Inferiority, need for control, and greed may give a different shape to personality.

**LESSON 32**

# PERSONALITY II

## Allports' Trait Theory

***As said earlier, after skimming an unabridged dictionary, Gordon Allport identified 18000 separate terms that could be used to describe personality. After eliminating synonyms he came up with a list of 4500 descriptions. BUT the important question was that what were the most basic traits?***

***Allport's Basic Traits Categories included three classic categories of traits:***

- ***Cardinal traits***
- ***Central traits***
- ***Secondary traits***

*Cardinal Traits* ***refer to a single personality trait directing most of the person's behaviors and activities e.g. affection, affiliation, kindness, and greed. The person's whole life, or behavior, is influenced by this trait. A person who served the poor and the weak all his life may have a very high degree of " kindness" or " nurturance". Or a person who likes to hoard things, people, and wealth may be ruled by a high degree of " greed", or perhaps " inferiority".***

*Central Traits* ***refer to those major characteristics that make up the core of someone's personality. Most people develop a group or set of traits rather than a single one, that form the core of their personality.***

•Central traits usually number from 5- 10 in a person.
•e.g., affection, love for humanity, and nurturance will form one type of personality.
•Inferiority, need for control, and greed may give a different shape to personality.

**Secondary Traits**, qualities or characteristics that do have an effect on our personality but are much less influential than cardinal or central traits.

***These affect fewer life situations as compared to the cardinal or central traits, for example preferring to wear certain colors, or a liking for specific tastes or smells.***

## Trait Theories Based Upon Factor Analysis

A number of trait theories are based upon factor analysis.

*Factor analysis:* ***a statistical method whereby relationships between a large number of variables are summarized into fewer patterns. These patterns are more general in nature.. The extensive list is For example: A researcher prepares a list of traits that people may like in an ideal man then administered to a large number of people, who are asked to choose traits that may describe an ideal man.***

***Through the factor analysis, the responses are statistically combined and the traits associated with one another in the same set (or person) are computed. Thus the most fundamental patterns are identified. These patterns are called factors.***

Psychologists Raymond B Cattell, and Hans Eysenck presented trait theories based upon factor analysis

**Raymond Cattell's Sixteen Personality Factors**

© Copyright Virtual University of Pakistan

***After using factor analysis Cattell proposed that two types of characteristics form our personality:***

- ***Surface traits, and***
- ***Source traits***

**Surface traits**

- *Cattell's factor analysis showed that there are 46 surface traits or clusters of related behavior.*
- *These traits are the characteristics that we can observe in a given situation.*
- *The frequently quoted example in this regard is that of a friendly, gregarious librarian, who is so helpful that he might go out of his way to help you; as a result of your interaction with him it can be decided that he possesses the trait of sociability. His sociability is a surface trait in Cattell's terms.*
  - BUT surface traits may not necessarily represent the traits that actually underlie the personality of a person; Surface traits are what we directly observe, and these are based upon our perceptions and representations of personality. These may not be the true descriptions of the actual underlying dimensions of someone's personality.
  - The characteristics that form the actual roots and basis of all behavior may be different, and fewer in number.

**Source Traits**

- ***In order to go beyond the surface traits, Cattell carried out further factor analysis.***
- ***He could identify 16 traits that that represent basic dimensions of personality.***
- ***He called these traits, source traits.***

**16 Pf: Sixteen Personality Factor Questionnaire**

***Cattell developed a measure that provided a score for each of the 16 source traits.***

| **Factor symbol** | **High scorer** | ***Low scorer*** |
|---|---|---|
| A | Outgoing | Reserved |
| B | More intelligent | Less intelligent |
| C | Stable | Emotional |
| E | Assertive | Humble |
| F | Happy-go-lucky | Sober |
| G | Conscientious | Expedient |
| H | Bold | Shy |
| I | Tender-minded | Tough-minded |
| L | Suspicious | Trusting |
| M | Imaginative | Practical |
| N | Shrewd | Forthright |
| O | Apprehensive | Placid |
| Q1 | Experimenting | Traditional |
| Q2 | Self-sufficient | Group-tied |
| Q3 | Controlled | Casual |
| Q4 | Tense | Relaxed |

© Copyright Virtual University of Pakistan

**Eysenck's Dimensions of Personality**

***According to Eysenck, personality can be understood and described in terms of just two major dimensions:***

- ***Introversion-extroversion,***
- ***Neuroticism-stability.***

***On the first dimension, people can be rated ranging from introverts to extroverts: the rest of the traits fall in between.***

***The second dimension is independent of the first one, and ranges from being neurotic to being stable.***

**Introversion-extroversion**

**Introvert**

***Quiet, passive, and careful people.***

*Extroverts*

***Outgoing, sociable, and active people.***

**Neuroticism-stability**

*Neurotics*

***Moody, touchy, and anxious people.***

*Stable*

***Calm, carefree, and even-tempered people.***

Eysenck evaluated a number of people along these dimensions. Using the information thus obtained, he could accurately predict people's behavior in a variety of situations.

**The Recent Approach to Understanding Personality Traits**

***The "Big Five":***

***Five broad trait factors lie at the core of personality:***

1. Surgency: Extroversion and sociability
2. Neuroticism: Emotional stability
3. Intellect
4. Agreeableness
5. Conscientiousness

**3. Learning Approaches to Personality**

- ***Approaches that focus upon the "observable" person rather than the inner dives, instincts, motives, thoughts, or traits.***
- ***For the learning theorists:***

***Personality is the aggregate of a person's learned responses to the external environment.***

- ***Variables considered most important by the learning theorist are the features of a person's environment.***

**Learning approaches are primarily based upon the principles of:**

- ***Classical Conditioning***
- ***Operant Conditioning***
- ***Cognitive Learning***

**B. F. Skinner's Approach**

- ***Personality is a collection of learned behavioral patterns.***
- ***Patterns of reinforcement that have been received in various situations in the past cause similarities in responses across different situations, when same or similar situations are encountered.***
- ***For example a student tries to make a good presentation every time he has to present because he has been receiving positive reinforcement for good presentations in the past…not because of an inborn drive or a trait of being a hard working or industrious person. Similarly, a person who is never aggressive may be so because he was always punished for aggressiveness and rewarded for being polite.***

**For learning theorists**

- ***Consistencies in behavior across different situations are not as important as the strategies for modifying behavior are.***

**Learning theorists are more optimistic in their approach, as compared to the psychodynamic theorists; they believe in the potential for change, and do not believe in the passivity of psychic determinism.**

**4. Social Cognitive Approach to Personality**

- ***The approaches that lay emphasis upon the role of people's cognitions in determining their personalities.***
- ***Cognitions include: people's thoughts, feelings, expectations, and values.***
- ***These approaches consider the "inner" variables to be important in determining one's personality.***

These approaches emphasize the **reciprocity between individuals and their environment.**
There exists a web of reciprocity, consisting of the interaction of environment and people's behavior. Our environment affects our behavior, and our behavior in turn influences our environment and causes modifications in the environment. The modified environment in turn, affects our behavior.

**Albert Bandura**

***According to him, we possess the ability to foresee the probable consequences of certain of our behaviors in a given setting, without actually having carried out those behaviors or actually being in those settings. This so happens primarily as a result of "observational learning" i.e., having seen the outcomes of others (models) performing the same behaviors in same or similar situations.***

***For example, this is how we learn to be aggressive, sociable, or industrious.***

**Bandura also emphasized**

- ***Self-efficacy, and***
- ***Reciprocal determinism***

© Copyright Virtual University of Pakistan

**Self-efficacy**

- ***Self-efficacy consists of learned expectations that one is capable of performing a certain behavior, or producing a desired outcome.***
- ***Self-efficacy is the underlying variable in people's faith in their ability to carry out a particular behavior.***
- ***The higher the sense of self-efficacy in a person the greater will be the persistence in his behavior, and also the greater will be the likelihood of his success.***

**Reciprocal Determinism**

- ***According to Bandura, the key to understanding behavior lies in reciprocal determinism.***
- ***We can understand the personality and behavior of a person by understanding the interaction between the environment, behavior, and the individual; and how this interaction causes people to behave in the manner they do.***
- ***Environment affects behavior and the behavior in turn affects the environmental factors.***

**For example**

- ***A woman likes to make friends. She gets an opportunity to make friends at parties. She in turn arranges parties herself and invites people she likes, or those she thinks are potential friends. Her desire for finding friends is satisfied as a result, at the same time she becomes confident that she can achieve what she wants by working on it. This causes persistence in her behavior.***

**5. Humanistic approach to Personality**

- ***The humanistic approach stresses that people possess a basic goodness, and have a natural tendency to grow to higher levels of functioning.***
- ***They have a conscious, self-motivated ability to change and improve.***
- ***The basic goodness, and the natural tendency to grow, along with their unique creative impulses form the core of personality.***

**Carl Rogers**

- ***All people require be loving and respecting. This is a universal phenomenon that is reflected in their need for positive regard.***
- ***This love and regard comes to us from other people. When other people provide for this basic need, we become dependent on them. We begin to rely on others' values and evaluate and judge ourselves through the eyes of others.***

**Self-concept and conflicts**

- ***Our self-concept and others' opinions are related.***
- ***At times there may be discrepancies or conflicts between our self-concept (self-impression) and our actual experiences.***
- ***Minor discrepancies lead to minor problems, whereas deeper conflicts lead to psychological disturbances in daily functioning e.g. frequent obsessions or anxiety.***

**Unconditional positive regard**

- ***A person's conflicts can be resolved if he receives unconditional positive regard from another person.***
- ***Unconditional positive regard means an attitude of total acceptance and respect from another person without any conditions. No matter what you say or do, the person accepts it.***

© Copyright Virtual University of Pakistan

- ***As a result of this acceptance, a person gets an opportunity to evolve and grow cognitively as well as emotionally, and to develop a more realistic self-concept.***

**Self-actualization**

- ***According to the humanistic approach, self-actualization is the ultimate goal of personality growth (see Rogers and Maslow).***
- ***Self-actualization is a state of self-fulfillment in which people realize their optimal potential.***
- ***Self-actualization occurs when our everyday life experiences and our self-concept match closely.***
- ***Self-actualized people accept themselves the way they are in reality. This enables them to achieve happiness and a feeling of fulfillment.***

**6. Biological Approaches to Personality**

- ***Approaches that emphasize the significance of biological variables and inherited personality characteristics.***
- ***These approaches propose that important components that constitute our personality are inherited or genetically determined e.g. temperament.***

**Temperament**

- ***Temperament is one of the main ingredients of personality.***
- ***Temperament is the basic, innate disposition that emerges early in life.***
- ***Even very young infants show signs of different dispositions e.g. some smile, some frown even when otherwise at ease, some are irritable, some calm, some shy, and some restless.***
- ***Such behaviors persist and at an early stage in their life the children are labeled as stubborn, shy, restless etc.***

**Inhibited children**

- ***According to Jerome Kagan children who are unusually fearful of the sight of unfamiliar adults, and fret when confronted with unfamiliar objects or new settings are the inhibited children.***
- ***Such children are labeled as "shy' by their parents and teachers by the age of 3-4 years.***
- ***They are consistently shy and emotionally restrained and noticeably quite in unfamiliar situations.***
- ***The constitute around 10% of all children.***

There are biological differences between the inhibited and uninhibited children:

- ***At age 5 muscle tension (especially in the vocal cords and the larynx) is higher in inhibited children.***
- ***They differ in the heart beat pattern too. They experience more of rapid resting heartbeat. In case of confronting a new situation their heart beat increases more.***
- ***Hormonal differences and variations in the excitability of the limbic system of the brain have also been seen to be different in the two groups.***

Kagan concluded that these differences can be explained in terms of an inborn characteristic of the inhibited children i.e., their greater physiological reactivity.

**Twin studies supporting the genetic argument**

- ***A number of studies on twins reared together and reared apart have supported the biological approach to understanding personality.***
- ***Study by Auke Telegen and colleagues (1988):***

***A sample of 350 pairs of twins was studied. They included 44 genetically identical twins who were reared apart.***

- ***The subjects were given a battery of tests, including one that measured personality traits.***

The results showed that

- ***The twins were quit similar in their personality, in major respects.***
- ***There are certain traits that are more influenced by heredity than others.***
- ***Genetic component was found to be particularly strong in case of social potency and traditionalism.***
- ***Genetic component was relatively weak in case of achievement and social closeness.***

© Copyright Virtual University of Pakistan

**LESSON 33**

# PERSONALITY III

**Assessment of Personality**

1. Interview
2. Observation and behavioral assessment
3. Psychological tests
4. Self-report measures
5. Projective tests

**Interview**

• Interview refers to direct face-to-face encounter and interaction.
• Verbal as well as non-verbal information is available to the psychologist.
• Interviews are usually used to supplement information gathered through other sources.
• Skill of the interviewer is very important since the worth and utility of the interview depends on how well he can draw relevant information from the interviewee.

**Behavioral Assessment**

•Direct observation measure for studying and describing personality characteristics.

**Psychological Tests**

•In order to objectively assess personality and behavior standard measures are devised. These measures are called psychological tests.
•Psychological tests have to be valid and reliable. Besides they need to be based on norms.

**Self- report measures**

• Measures wherein the subjects are asked questions about a sample of their behavior. These are paper and pencil tools or tests.

**MMPI (Minnesota Multiphasic Personality Inventory)**

•The most frequently used personality test. It was initially developed to identify people having specific sorts of psychological difficulties. But it can predict a variety of other behaviors too.
•It can identify problems and tendencies like Depression, Hysteria, Paranoia, and Schizophrenia for example.
•At the same time it has been used to predict if college students will marry within 10 years, and whether the will get an advanced degree.

**Projective Tests/ Techniques**

Tests in which the subject is first shown an ambiguous stimulus and then he has to describe it or tell a story about it.
The most famous and frequently used projective tests are:

i. **Rorschach test, and**
ii. **TAT or Thematic Apperception TestRorschach test**

The test consists of Inkblot presses. These have no definite shape.
The shapes are symmetrical, and are presented to the subject on separate cards.
Some cards are black and white and some colored.

**Procedure of Rorschach administration**

The subject is shown the stimulus card and then asked as to what the figures represent to them?
The responses are recorded.
Using a complex set of clinical judgments, the subjects are classified into different personality types.
The skill and the clinical judgment of the psychologist or the examiner are very important.

**Thematic Apperception Test/ Tat**

**A series of ambiguous pictures is shown to the subject, who has to write a story. This story is considered as a reflection of the subject's personality.**

© Copyright Virtual University of Pakistan

The subject is asked to describe whatever is happening in it just like forming a story.
The subject has to tell what is happening in the scene, what the antecedent conditions were, who the characters are, what are their thoughts and wishes, and what is going to happen next.
In short the subject describes the past, present and future along with the description of characters and their thinking and motivation.

**Intelligence**

**Have you ever consciously considered these questions?**

- ***Am I an intelligent person?***
- ***How intelligent am I?***
- ***How do we judge if someone is intelligent or not?***
- ***How can we measure the intelligence of a person?***

There can be other questions too:
–What is intelligence?
–Is intelligence how one deals with others? or
–Is intelligence how precisely we learn a new task? or
–Is it how good we are in our studies? or
–Is intelligence how well we can solve problems? or
–Is it how we accurately judge people? or
–Is intelligence all of this, or even more than all this?
–Different people may understand intelligence differently.
If you think intelligence is all of this or even more than all this, then you are right.

**Intelligence**

- ***According to Feldman "intelligence is the capacity to understand the world, think rationally, and use resources effectively when faced with challenges"***
- ***Intelligence is an all-encompassing concept.***
- ***It is not restricted to just one aspect of one's life, or to just one faculty or ability.***

Part of intelligence is inherited and part of it is learned.

Intelligence refers to the ability to adapt, to reason, to solve problems, and think in an abstract manner; it also includes learning and experiencing new things and understanding from the past experiences.
Intelligence or the intellectual ability of a person is based upon a constant and ongoing interaction between environmental factors and inherited potentials in order to have better understanding of how to 'use' and 'apply' the potentials in a meaningful manner.

- ***•Modern psychology considers both environment and heredity and their interaction to be influential.***

**Development of Intelligence**

Psychologists have attempted to uncover the factors operative in the development of intelligence; through studies, it is now evident that intellectual development does not take place in a smooth and straight fashion; it comes in intermittent bursts, and the pattern is different from person to person.
The physiology of intelligence
In early times, Greeks believed that the soul dwelt in the brain of the person and intellect is somewhere in the lungs.
This belief prevailed even till the 18th century.
Recent research has revealed that the flow of blood in the lateral prefrontal cortex of the brain is most when an individual indulges in solving some kind of puzzles.

•Another finding revealed that, in the elderly people, the flow of blood is much less in the areas that are concerned with alertness and memory as compared to the other areas.
•Levy's research revealed, after studying the two hemispheres of the brain, that the left hemisphere is most active and involved in analytical functioning and language.
•Whereas, the right hemisphere is more involved while doing visual and spatial skills and it tends to work more holistically.

**Theories of Intelligence**

•Theories or viewpoints on the understanding, explanation, and measurement of intelligence.
•These include psychometric approaches that are used to measure intelligence qualitatively and quantitatively.

**Francis Galton**

**Cousin of Charles Darwin.**

He was born in the family of geniuses and he himself was a genius having an IQ of more than 200.
He was a geographer, meteorologist, tropical explorer, "**founder of differential psychology",** inventor of fingerprint identification, pioneer of statistical correlation and regression, convinced of hereditarianism, eugenicist, proto-genetics and a best selling author.
He gave the concept of " hereditary genius".
According to Francis Galton ("Hereditary Genius, 1869)__ "gifted individuals" tended to come from families, which had other, gifted individuals. He went on to analyze biographical dictionaries and encyclopedias, and became convinced that talent in science, the professions, and the arts, ran in families.
His was the first systematic attempt to measure intelligence by investigating the role of **heredity** and its impact on **intellectual abilities**.
He further attempted to measure human trait quantitatively in order to determine the distribution of heredity in it.
For this he used "word association test", and "mental imagery".
Galton argued that it would be "quite practicable to produce a highly gifted race of men by judicious marriages during several consecutive generations".
**Eugenics**: "The study of the agencies under social control that may improve or repair the racial qualities of future generations, either physically or mentally."
For Galton:
"What Nature does blindly, slowly, and ruthlessly, man may do providently, quickly, and kindly"
"Intelligence must be bred, not trained".
Such arguments appealed many and some people took this approach to extremes; this way of thinking had drastic social consequences and was used to support apartheid policies, sterilization programs, and other acts of withholding basic human rights from minority groups.

**James McKeen Cattell**

- American psychologist who gave more importance to the mental processes.
- First ever to use the term " mental test" for devices used to measure intelligence.
- Developed tasks that were aimed to measure reaction time, word association test, keenness of vision and weight discrimination.
- These tests were proved to be a failure as they were not comprehensive and complex enough to measure intelligence.
- Psychometric Approaches: Spearman's Theory of Intelligence
- British psychologist, Charles Spearman gave his theory in the early 1900s
- His theory laid the foundations for the later theories.
- He observed that people who scored high on one mental test also tend to score on the other as well. The same applies to the low scorers.
- He developed a statistical technique known as " factor analysis" on the basis of which he proposed two factors that can account for the individual differences

© Copyright Virtual University of Pakistan

The first one he named as "g" factor or " general intelligence" and the other as "s" factor or " specific intelligence"
According to Spearman, 'g' factor can account for the general ability that is common in all people: as observed from the mental tests.
Whereas 's' factor can account for the specific abilities that are different in different people; and also different tests required particular abilities from people
Spearman and his followers gave more importance to the 'g' factors and suggested that 'g' measured the 'mental power' or ' mental energy'**Thorndike's Theory: Social Intelligence**

According to Thorndike:
" Intelligence and abilities are in the series".
He criticized Spearman on the fact that correlation, which he studied, was not enough to define and explain intelligence.
He disagreed with Spearman on this, arguing that instead of only one 'g' factor, there are a number of factors that make and influence intelligence; factors that cannot generally be found out but that are expressed in human actions.
He divided intelligence into three main divisions
i. Social intelligence; one's ability to understand and manage relationships
ii. Abstract intelligence; one's ability to understand and manage ideas e.g. Mathematics, algebra or abstract concepts
iii. Concrete intelligence; one's ability to manage concrete and mechanical concepts and ideas e.g. Economics, architecture, banking etc.
Thurstone's Theory of Intelligence: Primary Mental Abilities

American psychologist Louis L. Thurstone, believed that intelligence is not a general factor, but it is composed of small independent factors or elements, which he named as " primary mental abilities".

**For the identification and verification of these abilities, Thurstone and his wife, prepared a set of 56 tests, which they administered to 240 college students and analyzed the results through factor analysis.**

From the analysis, he identified seven primary mental abilities:

i. **Verbal comprehension**: An ability to understand and define words
ii. **Word fluency**: An ability or speed of thinking of verbal material such as rhyming, or naming words in a given category
iii. **Spatial visualization:** Ability to recognize and manipulate objects or things in three dimensions such as drafting and blue print reading
iv. **Perceptual speed:** An ability to quickly perceive and detect the visual details and differentiate between the similarities and differences between designs
v. **Reasoning/ inductive reasoning:** A logical ability of deriving general ideas from specific information
vi. **Numbers/ Arithmetic ability**: Capability of doing work easily on numbers such as doing simple arithmetic tasks fast and rapidly
vii. **Memory:** An ability or capacity of remembering and retaining the material such as words, letters and ability to recall and associate different words

**R.B Cattell and J.L Horn's Theory; Crystalline and Fluid Intelligence**

The theory was given by American psychologists Raymond Cattell and John Horn in 1960s, in which they applied different forms of factor analysis and came up with two kinds of intelligence:

I. Crystalline intelligence ( gc )
II. Fluid intelligence (gf)

Although these forms of intelligence are conceptually different, these are correlated forms of intelligence

**i. Crystalline intelligence** is the capability of using information that has been learnt: this type of intelligence is largely influenced by education and culture. It keeps on increasing with the learning experiences of a person; such as vocabulary or knowledge.

ii. **Fluid intelligence** is largely influenced by biological factors; it is the capability of solving novel problems which depends more on the neurological development of a person such as reasoning and memory, which decline with age

**Guilford's theory of the Structure of Intellect (SOI)**It is a model of intelligence according to which intelligence is the result of the interaction of operations, contents and products

He believed that intelligence is a much more complex phenomenon than one thinks of it; it is difficult to define it as a 'g' factor or in terms of 'primary mental abilities'

Developed a cube- shape model of intelligence, which is made up of 120 separate factors, known as "the structure of intellect". Guilford recently expanded his model and it now includes 180 factors.

**The different components of intelligence are:**

**Operations:** it is the potential of different ways of thinking including:

- Evaluation
- Convergent thinkingDivergent thinking
- Memory retention
- Memory recording
- Cognition

**Contents**: A potential of what we think about something. It includes;

- Visual
- Symbolic
- Semantic
- Behavioral**Products:** The results obtained by applying certain operations to certain contents, or the ability of thinking in a certain manner about a certain thing.

It includes:

- Units
- ClassesRelations
- SystemsTransformation
- Implication

**LESSON 34**

# INTELLIGENCE

**Gardner's Theory of Multiple Intelligences**

•Given by Howard Gardner in 1985

•He entirely disagreed with the theorists who gave importance to factor analysis, except one thing that is common and found in his and the former theories is that intelligence is the composition of many specific abilities

•The theory maintains that intelligence consists of eight independent intelligences that vary in degree among individuals; it includes the potential of solving the problems or creating products that can be valued within one or more than one cultural settings

•Maintains that humans possess around eight kinds of intelligences, they are

- Linguistics
- Logical mathematical
- Spatial intelligence
- Musical intelligence
- Bodily kinesthetic
- Interpersonal intelligenceIntrapersonal intelligence
- Naturalistic intelligence

**Sternberg's Triarchic Theory of Development**

•Given by American psychologist, Robert Sternberg, in 1980s, which is similar to Gardner's theory of intelligence.

•He observed that mental tests sometimes do not accurately predict success or failure in reality.

•According to his triarchic or three- dimensional theory, intelligence consists of three main components:

- Analytic intelligence
- Creative intelligence
- Practical intelligencePiaget's View of Intelligence:•Intellectual development can be defined in terms of qualitative changes in thinking which are clearly apparent in children of particular age.

•His theory is more concerned with the universal patterns of intellectual development and functioning. He maintained a comprehensive theory that emphasized on 'how' children acquire knowledge and use it to solve logical problems

•He was more interested in how children exhibit intelligence in different stages of life as he proposed the four stages of cognitive development, which he termed as universal and invariant (occurring in the same sequence). The stages are: sensorimotor, preoperational, concrete operational and formal operational.

**Hierarchical Theory of Intelligence**

•Given by Carroll 1986 and Vernon 1971.

•Their hierarchy consists of three levels.

•At the highest level, there is general intelligence or "g" factor as given by Spearman.

•In the second level, are the factors of primary mental abilities as identified by Thurstone.

•At the third level, there are specific abilities or factors underlying intelligence**Measurement of Intelligence**

- ***Intelligence of a person can be measured through intelligence tests. The use of a battery of tests is preferred over a single test***

**The History of Measurement of Intelligence**

- ***Man was always interested in knowing their own ability level, or in other words the intelligence, as well as that of others.***
- ***People looked for capable persons while searching for life-mates, companions, workers, architects, artists, and poets or authors.***
- ***Even in case of chefs, tailors, carpenters, or barbers, those with the fine skill and the ability to generate unique ideas were preferred.***

- ***In the olden times, observation and previous experience were the only ways to judge a person's capability or intelligence level.***
  ***The prevalent, modern, approaches to measure intelligence are based upon the contribution of Alfred Binet.***
- ***The first formal measure of intelligence was developed by French psychologist Alfred Binet and Theodore Simon, in 1905 in France.***
- ***The test or the scale was developed in order to assist the education ministry and department in identifying "dull" students in the Paris school system, so that they could be provided remedial aid.***

**The main idea was that intelligence can be measured in terms of performance of a child**

- ***If performance on certain tasks, that were the test items, improved with age then it could be taken as an indication of intelligence of a person.***
- ***By developing tasks on which people's performance improved with age, a measure could be devised which could distinguish intelligent people from those not intelligent.***
- ***Using the same concept Binet developed the first intelligence test in 1905. The test could identify more intelligent children within a particular age group. It could differentiate intelligent children from the less intelligent ones.***
- ***The test was devised for locating the 'dullest' students in the Paris school system so that remedial assistance could be provided to them before they were denied instruction.***

**The Testing Procedure Adopted by Binet and Simon**

- ***Initially Binet developed a number of tasks.***
- ***Then he took groups of students who were categorized or labeled as 'dull' or 'bright' by their teachers.***
- ***The tasks were presented to them. The tasks that could be completed by the 'bright' students were retained; the rest were discarded.***
- ***The idea was to retain tasks that could be completed by the bright students, as these were considered to be indicative of the child's intelligence.***
- ***With further work, dull or bright children could be identified with reference to their age.***
- ***The scale could, thus, identify bright or dull students within particular age groups.***

**Here are some sample items from Simon-Binet Test (1911)**

***Three years***

Shows nose, eyes and mouth. Repeats two digits. Describes objects in a picture. Gives family name. Repeats a sentence of six syllables.

***Four years***

Gives own sex. Names key, knife, and penny. Repeats three digits. Compares the length of two lines.

***Five years***

Compares two weights. Copies a square. Repeats a sentence of ten syllables. Counts four pennies.

***Six years***

Distinguishes between morning and afternoon. Defines objects in terms of their use. Copies a shape. Counts 13 pennies. Compares faces from the aesthetic point of view.

***Seven years***

Identifies right hand and left ear. Describes a picture. Follows precise directions. Names four colors.

***Eight years***

Compares two remembered objects. Counts from 20 to 0. Indicates omissions in pictures. Gives day and date. Repeats five digits.

***Fifteen years***

Repeats seven digits. Gives three rhymes. Repeats a sentence of 26 syllables. Interprets a picture. Solves a problem from several facts

**Later Revisions**

- ***The original Binet- Simon scale was revised a number of times.***
- ***The American psychologist, Lewis Terman gave the first Stanford revision of the scale in 1916.***
- ***These revision comparison American standards from age 3 to adulthood.***
- ***Further revisions were made in 1937 and 1960.***
- ***Stanford- Binet is one of the most widely used tests even today.***

**The Concept of Mental Age**

- ***Children taking the Binet- Simon test were assigned a score that corresponded to the age group they belonged to.***
- ***This score indicated their "mental age".***
- ***Mental age referred to the average age o children who secured the same score.***
- ***Mental age can be understood as the typical intelligence level found for people at a given chronological age.***

Mental age of a person can be different from his or her chronological age i.e., it can be above or below that. It could reflect whether or not a child was performing at a level at which his age mates were.
BUT it gave rise to a problem. How could we compare people belonging to different age groups?
Will a 20 year old with a mental age of 23 be equally intelligent as an 8 year old having a mental age of 11?The problem becomes more serious when we are talking of comparing those below their mental age e.g. comparing an 8 year old operating at a mental age of 5, with a 20 year old operating at a mental age of 17

**The Concept of Intelligence Quotient or IQ**

- ***As a result of problems with depending merely on mental age, a solution was devised in terms of intelligent quotient, a concept whereby the chronological age of the person is also given due consideration.***

**Intelligence Quotient: IQ**

- ***An indicator or measure of intelligent that considers a person's mental as well as chronological age.***
- ***The formula for IQ:***

***IQ score= MA/ CA x 100***

**Using This Formula Means That**

- ***If the mental and chronological age of a person is the same, then he or she will have an IQ of 100. If one is below his chronological age then the IQ will fall below 100 and vice versa.***

**Deviation IQ Scores**

- ***Psychologists kept working on the concept of IQ and made amendments in the primary concept of IQ.***
- ***Today, although the main concept of calculating IQ is still adhered to, we talk in terms of Deviation IQ scores.***
- *Deviation IQ scores* ***are based upon sophisticated statistical techniques. The average score of a group is kept in mind, and the IQ of the person taking an IQ test is stated with reference to the points with which he deviates from the average.***

© Copyright Virtual University of Pakistan 

Available Statistics Show That

- ***Around two- thirds or 66% of the population fall within a range of 15 IQ points from the average IQ score of 100 i.e., the majority of people have an IQ between 85 and 115.***

The Meaning of IQ Test Scores

| IQ score | Rating |
|---|---|
| < 70 | Retarded |
| 85 | Borderline |
| 100 | Average |
| Above 115 | Superior |
| Above 140 | Gifted |

**IQ Tests**

***Today a number of IQ tests are available.***

- ***But before choosing a test for assessing a subject's intelligence, and considering it a trustworthy device, the psychologist has to make sure that the test is:***
- ***Valid***
- ***Reliable, and***
- ***Standardized***

**Stanford-Binet Test (4th Ed.)**

- ***Last revised 1985.***
- ***Contains a series of test items that vary in nature according to the subject's age.***
- ***For example a child may is asked to copy figures or answer questions about everyday life activities.***
- ***Older subjects solve analogies, explain proverbs, or describe similarities underlying sets of words.***

Administration of Stanford-Binet test

- ***Individual-oral administration.***
- ***The examiner begins from a mental level at which he finds out the subject to be.***
- ***Items from succeeding levels are asked.***
- ***The test ends when they reach a level where no items are successfully attempted.***
- ***IQ is computed by by examining the pattern of correct and incorrect responses of the subject.***

**Wechsler Adult Intelligence Scale-Revised**

**WAIS-R and Wechsler Intelligence Scale for children-III: WISC-III**

**WAIS-R and WISC-III**

- ***Psychologist David Wechsler developed both.***
- ***The two tests consist of two major parts:***

© Copyright Virtual University of Pakistan

*i. Verbal part/scale*
*ii. Performance or non verbal part/scale*

**Verbal scale**

- ***Consists of more conventional types of problems involving vocabulary definition, and comprehension of various concepts.***
- ***The subscales include:***
  - ***Information***
  - ***Comprehension***
  - ***Arithmetic***
  - ***Similarities***

**Performance Scale**

- ***It involves assembling small objects and arranging pictures in a logical order.***
- ***The subscales include:***
  - ***Digit symbol***
  - ***Picture completion***
  - ***Object assembly***

Administration of WAIS and WISC

- ***Individual administration.***
- ***Time consuming.***

**Group Intelligence Tests**

- ***Considering the time consuming nature of the administration of Stanford-Binet test, WAIS-R, and WISC-III, psychologists have developed a number of group intelligence tests.***

**Cultural Biases and Intelligence Tests**

- ***Tests used to assess people's intelligence have been frequently criticized for being biased against particular groups of people.***
- ***Culture-fair IQ tests are developed and used for overcoming this problem. These tests do not discriminate against any minority or cultural group.***

**Alternative Formulations**

- ***Psychologists may also use other tools for assessing the ability and capacity of a person. They believe in measuring other aspects of a person's ability, besides just relying upon the I.Q. of a person. These aspects include:***
  - ***Moral intelligence***
  - ***Social intelligence***
  - ***Emotional intelligence***

**Moral Intelligence**

- ***Given by Coles (1997) and Hass (1998)***
- ***It is the ability to differentiate between right and wrong***
- ***More comprehensively, it is the capacity of making right decisions that are not only beneficial for one self but to others as well***

© Copyright Virtual University of Pakistan

**Social Intelligence**

- ***Also known as SQ.***
- ***It is the ability to understand and deal with people; salesmen, politicians, teachers, clinicians, and religious leaders exhibit this type of intelligence***
- ***It is also the ability to understand and deal one's own self by identifying one's thoughts, feeling, attitudes and behaviors***
- ***The approach has been given and supported by Hough, 2001, Riggio, Murphy, & Pirozzolo (2002).***

**Emotional intelligence or EI (indicated by EQ)**

- ***It is the type of social intelligence which is the ability to cope with one's own and other's emotions; to differentiate between them and use information for guiding one's thoughts and actions.***
- ***Indicated by the EQ of a person. It includes these aspects:***

• Self-awareness
• Managing emotions
• Empathy
• Handling relationships.

**LESSON 35**

# PSYCHOPATHOLOGY

•Psychological illness, psychological disorders, or mental illness are referred to as psychopathology.
•The term is used to describe abnormal behavior.
Psychopathology is the area of study in psychology that primarily focuses upon the origin, development and manifestation of behavioral and mental disorders.
Abnormal psychology is that branch of psychology that studies, describes, explains, and identifies abnormal behavior.
•The observable behavior and mental experiences of an individual may be indicative of a mental or psychological disorder. The overt behavior and other experiences provide cues to the development of mental or psychological disorders.
•Psychiatrists and clinical psychologists treat mental disorders.
•Besides, they are also interested in studying and conducting research on the nature and role of the events that cause these disorders e.g. past history of a person and other variables that contribute to mental illness.

## Historical Perspective of Psychopathology

Human life existed, presumably, on earth even more than three million years ago, but the records of only few thousand years are available to us.
One of the earliest traces in history, about the treatment of mental disorders date back to the stone age that was more than half a million years ago.
•Headaches, convulsive attacks, and other brain related problems were treated, at that time, with stone instruments in which a hole of about 2 cm was made in the skull of a person. This process was called **"trephining".**
•Evidence is available that trephining was performed even 4000 to 5000 years ago.
•It is believed that the Stone Age people used to perform this procedure.
•The ancient explanations centered on the supernatural: gods, evil spirits, demons etc. It was thought that the supernatural forces caused strange and troubled behaviors, as they resided within the body of the person. The practice of trephining was based upon the idea that the evil spirits needed a hole to get out of human body, thus ridding the person of its impact. In the ancient societies the influence of evil spirits was the main focus:
Herodotus, the ancient Greek historian, wrote about a king who was driven insane by evil spirits.
According to the legend of Hercules, he killed his own children because evil spirits drove him mad.

•Trephining was done in order to allow the evil spirits to escape the body of a person so that he returned to sanity. This view prevailed throughout the rich civilizations of that time such as the Egyptian, Hebrew, Greek, and Chinese civilizations.
•One of the most primitive ways of treating abnormality, and freeing the person of the "evil" possession was the use of **"exorcism".**
•Various techniques were used for casting the evil spirits out of the body of the afflicted person; these included black magic, noisemaking, chanting, prayer, and the use of potions.
•In extreme case flogging and burning the patient were also used.
•This treatment were done by the **"Shaman or the medicine man"**, who was regarded a very special person possessing unusual healing powers.
•In Egypt and Greece, the tasks of treating the ill were eventually taken over by the priests.
•These priests were a combination of a priest, physician, psychologist and a magician.
•The cure however still depended on magic.
•But not all ancient thinkers believed in this approach.
•In the Golden Age of Greece, temples for healing the ill were maintained.
•This was like a revolution that took place at a time when knowledge about human anatomy and physiology was very limited, and insufficient.
•During that time, Hippocrates, " the father of modern medicine", made his contributions in various fields.**Hippocrates**
Believed in the rational knowledge for understanding and treating the psychological disorders and denied the interventions that was used at that time for treating the abnormal.

He that all illnesses, including mental disorders, had a natural cause and required natural treatments for curing the patient.
He maintained that brain is the central organ for all activities including the intellectual abilities and that disorders are the result of brain pathology.
•He also believed that abnormality was caused by the imbalances of some humors or liquids within the body of a person.
•He gave theory of " humors" that account for the basic human activity. He was of the view that the perfect health is the result of the proportionate mixture of these humors
•Maintained that four humors led to four temperaments forming one's personality. The temperaments were:
a) Sanguine (Cheerful and Active)
b) Melancholic (Sad)
c) Choleric (Angry and Aggressive)
d) Phlegmatic (Calm and Passive)
Hippocrates maintained that epilepsy is caused by insufficient air carried by the veins to the brain and limbs.

**Socrates**

For him, soul is most important it should be properly looked after.
It is not just one faculty or any particular material entity; rather it is a broad area comprising intelligence and character, or man's conscious personality.
He maintained that thought and reasoning are the building blocks of personal worth and happy life.
It can be concluded that problems with the soul led to abnormal behavior.

**Plato**

Believed in the humane treatment of mentally ill patients
He was of the view that disorders developed when the conflict arises between emotions and reason
But despite having modern thoughts, he still believed that mental disorders were partly treated by the divine powers too.

**Aristotle**

He mainly followed Hippocrates' theory of mental disorders.
Gave different ideas about many emotional states such as anger, fear, envy, hatred, courage etc.

**Asclepiades**

First ever to distinguish between the acute and chronic mental disorders
Also differentiated between delusions, hallucination and illusions.
The movement of atoms in the body caused disease.
He advocated the practice of baths, dieting, exercise, and massage for curing disease.

**Galen**

- Most outstanding physician of antiquity after Hippocrates.
- He regarding the anatomy and nervous system of human beings as he was performing dissections on animals made influential contributions.
- The following many centuries did not see a major breakthrough regarding the understanding and treatment of abnormality.

**In The Middle Ages**

- In the middle ages of Europe, religious thought, dominated the understanding and treatment of mental disorders.
- This period lasted from the fall of the Roman Empire in 5th century AD till the 15th century.
- It was thought that the mentally ill were possessed by demons or the devil.
- They were accused of being witches who could infect others with madness.
- As a result the mentally ill were treated not humanely but with religious inquisition and barbaric treatment.

© Copyright Virtual University of Pakistan

- However, many thinkers even at that time believed that mental disorders did have a physical cause.
- They believed that the imbalance in the four basic humors, grief, and poor diet caused such illnesses.

**In The Islamic World**

- The mentally ill were treated in a good and humane manner by the physicians during the rule of Muslim caliphs. Asylums were made for the mentally ill.
- **Special baths, diet, medication, music, and pleasant environment were provided to the patients.**
- Such asylums began in 8th century AD.
- The first one was established in Baghdad, and was followed by others in Cairo, Damascus and Fez.

**In Europe**

- The mentally ill underwent inhuman treatment for long.
- The situation prevailed even in the 17th and 18th century AD.
- They were either left to wander in wilderness, or kept isolated in institutions.
- Many hospitals in Britain, France and Italy became notorious for their callous way of treating the mentally ill.
- However with growing public awareness the need for a change was felt.
- La Bicetre hospital in Paris, France, was a pioneer in this regard.
- Pussin was the superintendent of a ward for incurable mental patients.
- He released patients from shackles, and the staff was forbidden from beating them.
- Philippe Pinel who became the chief physician of La Bicetre hospital continued this practice.

**Developments in 17th And 18th Centuries**

The period of 17th century is regarded as the " age of reason", and that of 18th century as the " age of enlightenment".

Great changes as well as discoveries were made at that time in a number of fields including psychology

**Franz Friedrich Anton Mesmer (1734- 1815)**

- Mesmer proposed that a power similar to magnetism existed in humans.
- **This, animal magnetism, exercised a powerful influence on our body.**
- He asserted that animal magnetism had a medicinal value.
- He believed that maintaining and balancing the magnetic field could cure mental illnesses.
- He was of the view that hand movements and their magnetic force were enough to produce dramatic changes in the ill persons.

He introduced mesmerism, a trance like state, as a curative technique. Mesmerism was similar to today's hypnosis. He made more use of magnetism than suggestion.

The major breakthrough took place in the later half of the 18th century.

**Philippe Pinel: (1745-1826)**

- His contributions began with the revolutionary changes at the La Bicetre hospital in Paris. He believed that abnormal behavior is caused by some hereditary defects or nervous system defects. He was of the view that mental patients should be treated with great care as he severely condemned chaining and shackling of the mentally ill.
- **Due to his efforts, La Bicetre and Salpetriere hospitals were regarded as the first modern hospitals for caring and curing the insane.**

- Pinel gave the concept of Moral Treatment. He said that the mental patients should be treated with kindness and sensitivity. Cruelty and violence were discouraged and forbidden.

**William Tuke**

Tuke established the York Retreat in rural England in 1796. Here, mental patients were provided compassionate treatment. This retreat became a model for others to follow.

**Wilhelm Griesinger:(1817-1868)**

He believed that the best way to understand mental disorders is to assume that they are caused by brain pathology. He firmly believed on the organic origin of mental disorders rather than the psychological cause.

**Kraepelin: (1856-1926)**

- Published the first system of classification of mental diseases.
- This system could help to label different disorders as psychosis and neurosis.
- Kraepelin clearly differentiated between 'dementia praecox' (now known as schizophrenia) and 'depressive psychosis'; severe mental disorders.
- These severe disorders were thought to be developed out of the organic reasons.

**Jean M. Charcot: (1825- 1893)**

- **French neurologist.**
- Charcot was most interested in observing and treating hysterical patients.
- He noticed that these patients had strange beliefs about their own bodily functions. He developed techniques for treating hysterical patients as well as also being able to induce hysterical symptoms in normal individuals

**Defining Abnormality**

**What is abnormal behavior?**

Abnormality can be defined in a number of ways.
People identify, understand and explain abnormality according to their past experience, common information, cultural tradition, societal attitude, and/or professional knowledge. Definitions of Abnormal Behavior

**1. Statistical definition**

People deviating from the norm are considered "abnormal".
•BUT what if majority of people indulge into erratic behavior?
•What about the creative artists who did not go along the norm?

**2. Abnormality as deviation from "Ideal"**Ideal refers to the standard toward which most people strive.

- Abnormality, according to this definition, is not striving toward the ideal.
- BUT what about those for whom the 'ideal' is not the 'ideal'?
- **For example a student who is a very good painter and does not want to pursue conventional education.**

**LESSON 36**

# ABNORMAL BEHAVIOR I

## Definitions of Abnormal Behavior

### 3. A Sense of Personal Discomfort Seen As Abnormality

- ***A person is seen as abnormal if his thoughts and behavior are a source of discomfort for him.***
- ***Discomfort can be in the form of anxiety, distress, or guilt.***

### 4. Inability to function effectively

- ***People, who cannot function and perform as effectively as they ought to, are seen as abnormal.***
- ***This definition includes adjusting, and adapting to the social requirements.***

### 5. The Legal Definition of Abnormality

- ***Laws in different countries define abnormality according to their legal standards.***
- ***It is primarily needed for differentiating sanity from insanity.***
- ***Abnormality may be viewed as not being able to foresee and understand the consequences of the criminal act.***
- ***Or it can be taken as inability to control one's own thoughts and behaviors.***
- ***Or it can be the ability to see right as different from wrong.***

## Perspectives on Abnormality

- ***Approaches to studying, describing, understanding, explaining, and predicting abnormality.***
- ***These approaches affect the way a mental patient will be treated.***

### 1. Medical Perspective

- ***Psychological problems are caused by physiological factors.***
- ***These can be the biological processes and systems, genetic factors, the nervous system and the neurotransmitters, hormonal changes, or external variables affecting the biology of a person.***

### 2. Psychodynamic Perspective

- ***Childhood experiences are the root cause of mental disorders.***
- ***Unconscious determinants are significant.***

### 3. Behavioral Perspective

- ***Abnormal behavior is learned.***
- ***Abnormality is a learned response.***
- ***It results from our interaction with the external world.***

### 4. Cognitive Perspective

- ***The factors causing mental disorders are a person's cognitions, thoughts, and beliefs.***

### 5. Humanistic Perspective

- ***People's need to self-actualize, and their responsibility for their own actions, play a central role***

***in abnormality behavior.***

**6. Sociocultural Perspective**

- ***The social milieu in which one lives, the family and the people around, the society, and the culture at large are of primary importance in the onset, and later treatment, of mental illness***

**Classification of Mental Disorders**

- ***Kraepelin gave the first classification system of mental disorders.***
- ***A number of classification systems followed afterwards.***
- ***The purpose was to assist the clinicians diagnose mental disorders, as well as to determine the extent of the problem.***

**Classification Systems**

- ***DSM- IV- TR***
- ***ICD***

**DSM-IV-TR**

- ***Diagnostic and statistical manual of mental disorders is the classification system compiled by the American Psychiatric Association.***
- ***This is the most widely used classification system all over the world.***

**ICD: International Classification**

- ***For decades, mental health professionals in Western Europe and a major part of the world used this classification system.***
- ***The World Health Organization developed ICD.***
- *ICD is a comprehensive classification system of all kinds of diseases, including psychological or psychiatric illnesses.*
- ***For a number of years ICD9 remained a popular diagnostic system.***
- ***Research, in the last more than a decade, reflected that the revised and improved versions of DSM had an edge over ICD in many respects.***
- ***Besides, there were no major differences as such in the two systems.***
- ***Also, the need for a single universally accepted system was intensely felt.***
- ***Therefore today DSM-IV-TR is recognized as a universally accepted diagnostic system.***

**DSM-IV-TR**

- ***The first DSM was published in 1917.***
- ***It originated from a project of the American Medico-Psychological Association, now known as American psychiatric Association and United States Bureau of the Census.***
- ***In order to collect uniform data on hospitalized mental patients, they developed a list of 59 mental illnesses.***
- ***The list was further expanded with the publication of the first DSM in 1952.***
- ***The first DSM included a list of 106 mental illnesses.***
- ***DSM-II was published in 1968.***
- ***DSM-III was published in 1980.***
- ***DSM-III-R was published in 1987.***

© Copyright Virtual University of Pakistan

- ***DSM-IV was published in 1994.***
- ***DSM-IV was developed after a special 27-member task force of experts worked for five years.***
- ***More than 1000 psychiatrists contributed and advised in deciding about the diseases and other information to be included in DSM-IV.***
- ***DSM-IV-TR was published in 2000.***

DSM-IV-TR contains definitions of more than 200 mental disorders.
These disorders are organized into 17 major categories.

**Multi Axial System of DSM-IV-TR**

- ***DSM-IV-R also contains five axes, or five types of information, that have to be considered in the diagnosis of a patient.***

Axes of DSM-IV-TR

- ***Axis I: Clinical disorders***
- ***Axis II: Long standing problems that are frequently overlooked in the presence of disorders listed in axis mental retardation, personality disorder, and I.***
- ***Axis III: General medical conditions that may be relevant to a psychological disorder.***
- ***Axis IV: Psychosocial or environmental problems that a person is facing.***
- ***These problems may affect the diagnosis, treatment, or the course of the mental disorder.***
- ***Axis V: Global Assessment Of Functioning.***

**Major Categories of Disorders in DSM-IV-TR**

1. ***Anxiety disorders***
2. ***Somatoform disorders***
3. ***Dissociative disorders***
4. ***Mood disorders***
5. ***Schizophrenia***
6. ***Personality disorders***
7. ***Sexual disorders***
8. ***Substance-related disorders***
9. ***Delirium, dementia, amnesia, and other cognitive disorders.***

**Anxiety Disorders**

- ***Disorders in which anxiety becomes an impediment in a person's routine functioning.***
- ***Anxiety is a reaction to real or imagined threat that may hamper the daily functioning and results in uneasiness, worry, and apprehension.***
- ***In anxiety disorders, anxiety occurs without an obvious external cause, to an extent that it affects routine functioning of the person.***

•Stress is the part of daily routine in a person's life but the reactions to stress vary from individual to individual.
•Anxiety is one of the various reactions to stress.
•Whether or not one will develop anxiety, and to what extent, will depend on the nature of stress faced, family history, and fatigue or over work, and the person's coping strategies.

**Major symptoms of stress include**

- Sleeplessness
- Headaches
- Twitching and trembling

- Dry mouth
- Memory problems
- Nightmares
- Irritability
- Fatigue
- Sweating
- Muscle tension
- Insomnia

**Common causes are**

- Imagined threat
- Grief
- Physical or emotional stress
- Use of drugs
- Withdrawal from drugs.**Subcategories of Anxiety Disorders**
- ***Generalized anxiety disorder***
- ***Panic disorder***
- ***Phobic disorder***
- ***Obsessive compulsive disorder***
- ***Post- traumatic stress disorder***

Treatment can be done through

- Finding the actual cause of anxiety.
- Avoid becoming dependent on mood altering drugs.
- Avoid stimulants such as caffeine, nicotine, alcohol etc.
- Biofeedback and relaxation therapy.
- Aerobic exercises.
- Avoid the effects that have been produced due to anxiety, if anxiety is cured, the other symptoms will be resolved automatically. **Generalized Anxiety Disorders**

- ***The disorder marked by long-term, persistent, anxiety and worry.***
- ***It refers to the long- term anxiety in which there is continual and exaggerated state within the person due to which he/ she is continually tense, apprehensive and in automatic nervous system arousal.***
- ***Chronic form of anxiety disorders.***

**Causes include**

- Hereditary causes,
- Or this disorder begins at very early age and the revealing of the symptoms is gradual not burst.

**Treatment involves**

- Medications and use of psychotherapy,
- Exposure therapy,
- Behavioral therapy and cognitive behavioral therapy.

**Symptoms involve**

- People with this disorder are unable to relax,
- Insomnia
- Trembling,
- Muscle tension,

- Head aches, sweating,
- Twitching,
- Trembling,
- Feel tiredness,
- Depression etc.**Panic Disorder**

- ***Disorder in which anxiety is manifested in the form of panic attacks lasting from a few seconds to many hours.***
- ***Panic attacks are unpredictable; resulting from vague anxiety and that may accompany physiological manifestations.***
- ***Symptoms include:***
    - ***Dizziness and/or fainting***
    - ***Sweating***
    - ***Trembling***
    - ***Palpitation***
    - ***Nausea***
    - Choking
    - Fear of dying
    - Fear of being out of control
    - Skin blushing or flushing
    - Chest pain and discomfort
    - Sleep disturbances
    - Agitation
    - Facial paralysis etc.**Causes involve**
        - Use of drugs and stimulants.
        - As a result of some incident or risk factor.
        - The exact cause of panic attacks is still not known; may result due to temporal dysfunction of the brain or may have been learnt through past experiences.
        - More frequent in women than men.

**Prognosis:** The disorder is difficult to treat and long- lasting as well, but behavioral therapies and use of drugs can minimize the symptoms.

**Phobias**

- ***Phobias are the particular, persistent, irrational and intense paralyzing fear of some objects and situations that they are unable to explain and overcome; and that may occur without any actual cause.***

**Symptoms include**

- Perspiration
- Frustration,
- Rapid heart beat
- Headaches etc.

LESSON 37

## ABNORMAL BEHAVIOR II

**Causes of Phobias may include:**

- Result of some traumatic event or disaster
- Hereditary component,
- Prevalent equally in men and women,
- Anxiety,
- Panic attacks.

***SOME COMMON PHOBIAS***

| | **Fear of:** |
|---|---|
| Acrophobia | Height |
| Aerophobia | Flying |
| Agoraphobia | Entering public places |
| Claustrophobia | Closed spaces |
| Hydrophobia | Water |
| Mikrophobia | Germs |
| Nyctophobia | Darkness |
| Ophidiophobia | Snakes |
| Phonophobia | Speaking out loud |
| Pyrophobia | Fire |
| Thanatophobia | Death |
| Xenophobia | Strangers |

**Treatment of Phobias includes**

- Use of behavior therapy especially behavioral- modification therapy.
- Procedure of systematic desensitization is used.
- Biofeedback is also helpful.

**Obsessive- Compulsive Disorder**

**Obsession** is an unwanted, recurrent and persistent thought that continuously recurs, and that can be intrusive and inappropriate

A **compulsion** is the uncontrollable urge to perform an apparently strange and unreasonable act repeatedly.

**Symptoms include**

- Distress,
- Frustration,
- Anxiety etc

**Causes include**:

- Risk factor,
- Stereotype behaviors,
- Brain abnormalities,
- Unpleasant thoughts,
- Some incident etc.

**Prognosis:** It is a chronic illness in which total removal of symptoms is not possible, but improvement through medication and therapy is possible

**Somatoform Disorders**

A disorder in which psychological problems take the physical (somatic) form without any apparent physical cause; a state where there are physical symptoms present but no explicable medical cause.

© Copyright Virtual University of Pakistan

**Symptoms include**

- Blurred vision,
- Dizziness,
- Vomiting,
- Difficulty in swallowing etc

There are **two types** of somatoform disorders.

1) **Hypochondriasis**
2) Conversion disorders

**Hypochondriasis**

Type of somatoform disorder in which the person experiences a persistent fear of illness, and is preoccupied by health concerns.
Even minor pains and aches may be interpreted as a symptom of some serious disease.

**Symptoms involve**

- In this disorder doctor shopping is very frequent.
- Sympathy may exaggerate these complaints.
- Patient undergoes surgery and regularly takes medication.
- Patient focuses closely on normal physiological states such as rapid heartbeat, sweating, palpitations etc; patient interprets it as some severe disease.
- Minor health problems may become severe as a result of persistent stress and discomfort

**Conversion Disorders**

Disorder in which the persons undergoes an actual, genuine and specific, physical problem and disturbance.
The problem has a purely psychological reason and there is no biological cause involved.
The problem manifests itself suddenly, without any prior indication.
Unexplainable neurological symptoms appear at once when no testable cause is present.

**Symptoms include**

- Partial blindness.
- Loss of voluntary control over motor and sensory functions.
- Inability to hear and talk.
- Sudden display of emotions: and at times there is no emotion.
- Symptoms may be exaggerated by stress.

The sufferers frequently do not show a natural concern about the symptoms.

**Causes include**

- Hereditary component, and observational learning
- A state of severe stress
- People who have other organic problems may develop conversion disorder
- A prior knowledge of the disease and symptoms is there.

**Dissociative Disorder**

A disorder in which critical personality facets, that is normally integrated and working together, become separate.
This allows stress avoidance and anxiety reduction by way of escape.
The person uses defense mechanisms for avoiding stress and to deal with traumatic experiences
At a time, two or more personalities, may exist within the person

**Symptoms include**

1. Auditory or visual illusion,
2. Feeling of confusion and disorientation,
3. Severe anxiety attacks,
4. Suicidal attempts,
5. Inflicting self-injuries

© Copyright Virtual University of Pakistan

**Causes involves**
•High state of stress

**Treatment includes**
•Psychotherapy
•Self- induced trance
•Minimize stress

**Types of Dissociative Disorder**

**Dissociative Amnesia**

A state when a selective loss of memory occurs.
The person is unable to recall specific events often as a result of extreme stress.
Significant memory loss occurs about personal information that is not due to an organic cause.
This disorder vanishes abruptly as it begins and rarely re-occurs.

**Dissociative Fugue:**

Fugue means, " flight"
Fugue is a form of amnesia.
The sufferer takes sudden impulsive trips, at times assuming a new identity.
Dissociative fugue includes forgetting as well as fleeing from one's home for days and weeks, also being unable to remember one's identity.
Unconscious wandering in which the person has limited social contacts.
In some instances, person may take over another personality that is more sociable than the previous one.

**Dissociative identity disorder/Multiple personality**

- Rare disorder in which the person may take over two or more personalities that are entirely different from one another
- The first one is usually restrained, restricted and dull but the other one is entirely different from the previous one; one's mannerisms, vocal, movements are entirely different from one another

**Mood Disorders**

Psychological and affective disturbances characterized by emotional extremes that are enough to produce troubles in daily living
The emotional response is disturbed and so strong that it disturbs everyday living.
Mood disorders mainly include:

1. Major depression
2. Mania
3. Bipolar disorder

**i. Major Depression**

Previously known as " melancholia"
Major depression is a severe form of depression.
Common form of mood disorders
A disorder characterized by lack of concentration, decision- making, sociability, withdrawal from others, and a feeling of worthlessness and inadequacy.
Depression is labeled as depressive disorder when it persists for long and hampers daily life.

**Symptoms include**

1. Concentration problems,
2. Irritability and restlessness,
3. Persistent sadness, anxious and empty mood
4. Fatigue,
5. Appetite changes
6. Feeling of agitation
7. Sleep disturbances
8. Hopelessness and pessimism
9. Loss of interest in activities, which are pleasurable
10. Suicidal thoughts.

© Copyright Virtual University of Pakistan

**Causes include**

4. Hereditary cause,
5. Stress,
6. Chemical imbalances in the brain; the sufferer however has the belief that it is a medical illness rather than a psychological one
7. Most commonly occurs in people with low self- esteem
8. Women are twice as likely to develop major depression as men.
9. Learning experiences may contribute to the development of depression
10. Serious loss in business or some other disaster,
11. Relationship problems, financial setbacks etc

**Treatment includes**

Use of medication,
Psychotherapy,
Behavioral therapy.

**ii. Mania**

Mania is the opposite state of depression.

It is an extended state of intense wild elation.

**iii.** Bipolar Disorder:

- Bipolar disorder is a combination of depression and mania.
- The sufferer alternates between periods of extreme euphoria and elation i.e., mania, and bouts of depression.
- Side Effects of Mood Disorders
- The height of elation may lead to high creative output, although it does not ensure high quality of the creative output.
- The manics are often reckless and end up with self-injury.

**Causes**

Psychodynamic explanation: Feeling of loss that can be real or potential.
Hereditary factor: These disorders appear to be running in families.
The role of neurotransmitters: Serotonin and nor epinephrine have been found to be related to these disorders.

Alterations in the level of these chemicals have a role to play in mood disorders

Behavioral explanation: Lack of, or reduction in, positive reinforcement leads to mood disorders.
Cognitive explanation: the sufferers of depression believe that they are life's losers; they are failures, inadequate, and not meant to be the 'winners' in life. They have a pessimistic view of life.
Evolutionary psychology explanation: Considering the impact of the genetic factors, it states that depression is an adaptive response to unattainable goals.

**Schizophrenia**

- **Schizophrenia is a category of mental disorders marked by severe distortion of reality.**
- There is a deep division between the real world and the schizophrenic's world.
- What makes schizophrenia different from other disorders?
- Significant decline from a previous level of functioning.
- Disturbances of thought and language

**Symptoms in Schizophrenia**

Delusions,
Hallucinations,
Emotional disturbances,
Withdrawal.

**Delusions**
Unshakable, firm, and deeply believed in beliefs are held by the schizophrenic.
Delusions can be about one's being grand, or being persecuted by others, or others planning against him, or one's thoughts being relayed to others who are out of physical reach.

**Hallucinations and Perceptual Disorders**
The schizophrenic has sensory experiences that ordinary people do not have.
They may hear voices, see people or objects, and/or smell things that others find to be non-existent.
The hallucinations mean reality to the schizophrenic.
Hallucinations are usually based on the delusions.
The sense of own body is also affected in schizophrenia.

**Emotional Disturbances**
Overall the schizophrenics show a flat, blank, and bland emotional response.
Also, their emotional responses are inappropriate.

**Withdrawal**
Schizophrenics live in an isolated world of their own.
Schizophrenics withdraw from others.
They avoid socializing.
They are not interested in others.
In extreme cases they are oblivious of the presence of others.

**Types of Schizophrenia**
**a. Disorganized or hebephrenic type**
Marked by inappropriate emotion: inappropriate giggling, laughter, silliness, incoherent speech, infantile behavior, and strange and at times obscene behavior.

**b. Paranoid Schizophrenia**
- The patient experiences delusions and hallucinations of his own greatness.
- Behavior is unpredictable, and erratic.
- Sense of judgment is lost.

**c. Catatonic Schizophrenia**
- Catatonic schizophrenia is marked by disturbances in the motor activity and muscular control.
- Major disturbances occur in movement.
- At times all motion stops and the patient just freezes in one position.
- This frozen posture may last for hours and even days.
- In some phases the patient exhibits wild, free floating, and even violent movement.

**d. Undifferentiated Schizophrenia**
This variety of schizophrenia involves a combination of the major symptoms found in other varieties.
This diagnosis is used when patients do not fit into any one of the major categories of schizophrenia.

**e. Residual Schizophrenia**
**Residual schizophrenia consists of minor signs of schizophrenia after a major, more serious, episode.**

© Copyright Virtual University of Pakistan

**LESSON 38**

# PSYCHOTHERAPY I

## When does one need to go to a psychotherapist?

***According to Engler and Goleman (1992) the following list of symptoms can serve as a guideline for people in determining whether they need outside intervention, and whether it can be of help:***

- *Long-term feelings of distress that interfere with your sense of well-being, competence, and ability to function effectively in daily life activities.*
- *Occasions in which you experience overwhelmingly high stress, accompanied by feelings of inability to cope with the situation.*
- *Prolonged depression or feelings of hopelessness, particularly in the absence of a cause.*
- *Withdrawal from other people.*
- *A chronic physical problem for which no physical cause can be determined.*
- *A fear or phobia that prevents you from engaging in everyday activities.*
- *Feelings that other people are out to get you or are talking about you or plotting against you.*
- *Inability to interact effectively with others, preventing the development friendships and loving relationships.*

## Varieties of psychotherapies

•About 400 psychotherapies are available to us.
•Psychotherapists can choose any of these depending upon their theoretical orientation, as well as the nature of the problem they are dealing with.
•Also, depending upon their prior knowledge if any, patients and sufferers may choose a psychotherapeutic approach that they prefer to undergo.

## Psychotherapeutic Orientations

- *Although a variety of psychotherapies are available, the primarily stem from four major psychological approaches:*
- *Psychodynamic approach*
- *Behavioral approach*
- *Cognitive approach*
- *Humanistic approach*

## Who can be a psychotherapy provider?

- *Clinical Psychologists*
- *Counseling Psychologists*
- *Psychiatrists*
- *Psychoanalysts*
- *Licensed Professional Counselors or Clinical Mental Health Counselors*
- *Clinical or Psychiatric Social Workers*

## Clinical Psychologists

- *They are psychologists with a Ph.D. or Psychology. Degree.*
- *They have to complete a postgraduate internship prior to practicing.*
- *They have a specialization in the assessment and treatment of psychological problems.*

## Counseling Psychologists

- *Counseling Psychologists have Ph.D. or Ed.D. Degree.*
- *They typically provide help in solving routine-life adjustment problems.*

© Copyright Virtual University of Pakistan

- *Their usual workplace is a university mental health clinic.*

**Psychiatrists**

- *Psychiatrists are primarily medical doctors.*
- *They have an M.D., M.B.B.S. or any other qualifying medical degree according to the law of any nation.*
- *They undergo post-graduate training in dealing with mental disorders.*
- *Being medical doctors, psychiatrists can prescribe medicine.*
- *Although there are no restrictions on which they can treat, psychiatrists generally treat severer cases of mental disorders.*

**Psychoanalysts**

- *These professionals specialize in psychoanalysis.*
- *They can be medical doctors or psychologists trained in psychoanalysis.*

**Licensed Professional Counselors or Clinical Mental Health Counselors**

- *These professionals hold a master's degree, with a national or state certification in therapy.*
- *They provide therapy to suffering individuals, couples, and families.*

**Clinical or Psychiatric Social Workers**

- *These professionals are basically master's degree holders.*
- *They undergo specialized training.*
- *As a result of their training, they can provide therapy regarding family and personal problems.*

**Psychotherapies based upon the psychodynamic approach**

- *These therapies are primarily based upon the psychodynamic model introduced by Freud.*
- *This approach is based upon two assumptions:*
    - *Unresolved past conflicts is the root cause of abnormal behavior.*
    - *Unacceptable unconscious impulses will enter consciousness.*

**Psychoanalysis**

- *Introduced by Sigmund Freud.*
- *Therapy is based on the premise that the roots of all abnormal behavior reside as unresolved conflicts in the unconscious.*
- *To avoid these conflicts, people use defense mechanisms*
- *•Psychoanalysis is an intensive, long term, psychotherapeutic procedure.*
- *•Requires long sessions over extended periods-----may be years*
- *•Better suited to intelligent individuals.*
- *•Involves a special relationship between the therapist and the patient*

**Target:** To explore unconscious motivation, conflicts, desires

Goal: Establishing intra psychic harmony by developing awareness of the role of the id, reducing over compliance with super ego, and by strengthening the ego

**Understanding of 'repression':** The therapy gives central importance to the understanding of the manner in which the person uses repression to handle conflict**Interventions used in Psychoanalysis**

*Free association*

***Kept in a comfortable position, the patient is asked to talk aloud and say whatever comes to his mind without considering whether or not it is relevant, rational, or sensible***

***The patient is asked to reveal even the most undesirable and strong thoughts that have been repressed. This leads to emotional release, called 'catharsis'.***

**Dreams in Freudian Approach**
Dreams reflect unconscious needs, desires, impulses.
With the help of these dream analysis, psychotherapists seeks an understanding about the unconscious motives, desires and conflicts
There are two parts of dreams.

**Dream content**

1. **Latent content**
2. **Manifest content**

**Manifest part** is what the patient describes about the dream and its surface interpretation
**Latent part** is the hidden part or the " true massage" within the dream.

**Symbolism**

***The manifest content is in a symbolic form.***

***Converted into this form by the 'dream censor, a mechanism that ensures that sleep is not disturbed by unconscious desires, and those desires are presented in a socially acceptable form.***

**Analysis of Resistance**

- ***At times patient feels inhibitions, and is unable or unwilling to express some thought or feeling i.e., barriers between conscious and unconscious. The psychoanalyst aims to break down such resistances so that the patient is enabled to face the unpleasant thoughts, impulses, and events.***

**Dream Analysis**

- ***The therapist tries to uncover the latent content of dreams and decipher the symbolism involved***

*Analysis of Transference & Counter Transference*

*Transference*: ***The patient's emotional response toward the therapist is often an indication of the patient's relationship with a person who had been the center of the conflict. It may be negative or positive***
**Counter Transference:** The therapists' emotional reaction toward the patient.

**Criticism Against Freudian Psychodynamic Theory**

***There is no scientific proof that many psychodynamic constructs, e.g. unconscious, exist***

*Psychic Determinism*: ***Freudian approach is deterministic and leaves not much room for conscious, rational, decision making or personal will to act.***

***It ignores the external variables and the environment.***
It emphasizes the early childhood experiences too much.
Mostly criticized for its interpretation of the relationship between the genders
The therapy is too time consuming and therefore expensive.

**Behavioristic Approach to Treatment**

***A psychological approach that considers the relationship between behavior and environmental stimuli as the focus of study; observable behavior is what psychology should be studying, understanding and explaining.***

***An approach that dominated psychology for most of the 20th century.***

**What do the Behaviorists Study?**

***Observable/ overt behavior***

***Specific measurable responses***

***How particular types of behaviors are controlled by particular types of environmental stimuli***

*Method of investigation:* ***Data typically collected under controlled laboratory conditions, employing technological assistance.***

**What the Behaviorists Are Not Interested in:**

- ***Unconscious***
- ***Inner motivation***
- ***Biochemical processes***

**Behavior Therapy Is More Directed Towards**

- ***Behavioral therapists focused on unlearning the mal- adaptive patterns of behavior which people acquired through learning; and abnormal behavior would be treated by making them to relearn new experiences***
- ***Changing individual's behavior and make them able to function more efficiently definitely solves the problem***

**Classical Conditioning and Behavior Therapy:**

***Behavior therapy uses various classical conditioning strategies for modifying the mal- adaptive behavior. These important techniques are;***

- *Systematic desensitization*
- *Aversive therapy*
- *Flooding and implosive therapy.*

**Systematic Desensitization**

- *A procedure used in behavior therapy in which a stimulus that generates pleasant feeling is repeatedly paired with the anxiety provoking stimulus in hope to alleviate anxiety. In the beginning the therapist prepares a hierarchical list of the fear provoking stimuli, beginning from the least fear provoking.*
- *Before using this procedure, the patient has to learn muscle- relaxation techniques by the therapist.*
- *The patient is kept in a relaxed state. Then the therapist utters the names of the fear provoking stimuli, one by one. He keeps taking the names till the patient shows signs of discomfort and anxiety. The process is repeated the next time, till a stage when the patient can tolerate the whole list, showing that his fear is gone.*

**Aversive therapy**

- *Developed by Ivan Pavlov.*
- *A technique used to unlearn the unwanted habits by associating it with the unwanted impulses. An aversive stimulus is*

*attached with an undesirable behavior, e.g. adding an emetic substance to the cigarettes of the patient.*

This technique is frequently used with alcoholics, smokers and substance abusers. Implosive Therapy:

- ***Making the patient directly encounter the fear-provoking stimulus.***

### Observational Learning

- *Learning the experiences through modeling and imitation. The patient observes others perform the behavior that he finds difficult to perform. This can be done with live modeling or with video recordings.*
- *Behavior therapists used modeling for teaching the patient new skills and habits and alleviate their anxieties, fears and phobias.*

### Operant Conditioning

- *Operant conditioning approaches uses the rewards and punishment strategies for modifying behaviors.*

### Token Economy/ Token System

- *The person is rewarded with some form of a token every time a desired behavior is exhibited.*
- *The token can be play money/token or a chip representing money; it can be the silver or gold stars earned by the child; parents can give different colored paper tokens for good behavior.*
- *After a specific number of token have been earned, they can be exchanged for something desirable.*

### Contingency Contracting

- *A written contract is held between the client and the therapist, specifying all goal-behaviors as well as consequences: parents and teachers can also use it.*
- *The contract is followed strictly no matter if the consequences of behavior are negative, and the client may in fact dislike them; the purpose is to promote target behavior.*
- *e.g. if an over-eater fails to refrain from confectionary throughout the week, he will have to send a donation cheque for drinks in a marathon; the cheques are prepared at the beginning of the program*

### Usefulness of Behavior Therapy

- *Found to be effective with 50-90% of patients especially treating phobias, anxiety disorder and other unwanted behaviors such as smoking and drug abuse.*
- *Also helpful in the sense that it cal also be employed by non- professionals too.*
- *Cheap and economical as it directly focused on the problem to be unlearn.*

### Cognitive Approach in Behavior Modification

- *Negative and unacceptable behavior is modified through constructive strategies.*
- *According to this theory, person's beliefs and attitudes effect the motivation and behavior of a person.*
- *In order to modify the behavior, reinforcement techniques are used.*
- *For attaining the desired goal, realistic strategies are used with continuous feedback.*

### Behavior Modification

- *A therapeutic/intervention strategy used for modifying behavior in such a manner that the frequency of desired behavior is increased up to the optimal level, and the frequency of undesired behavior is brought down to the minimum…or to extinction level.*
- *The intervention is based upon the principles of learning.*

### Steps in Behavior Modification

- *Identification of goals in terms of target behavior.*

- *Recording the preliminary/background information concerning the behavior in question.*
- *Designing the intervention, issues involved and deciding its components*
- *Implementation of the planned program as well as careful monitoring.*

### Altering the Belief System

*Psychologists are of the view that psychological problems arise due to the way people perceive themselves in relation with the people they interact.*

**Main focus of the therapist is to alter the irrational belief system of a person.**

### Cognitive Therapy for Depression

- *Aaron Beck formulated the therapy for depression patients.*
- *Therapist helps the depressive person to change the faulty patterns of thinking through problem- solving techniques.*
- *Believed that depression reoccur in depressive patients because the negative thoughts occur automatically from which they are unaware.*

### Rational-Emotive Behavior Therapy

- *Developed by Albert Ellis (1962, 1977).*
- *Focused on altering the irrational beliefs into more acceptable way.*
- *Clients are forbidden to use "should", "must"," ought" etc.*
- *Confrontation techniques are used which focused on changing the attitudes through rational reasoning.*

LESSON39

# PSYCHOTHERAPY II

**Behavior Modification**

A therapeutic/intervention strategy used for modifying behavior in such a manner that the frequency of desired behavior is increased up to the optimal level, and the frequency of undesired behavior is brought down to the minimum…or to extinction level.

The intervention is based upon the principles of learning, specifically shaping.

**Steps in Behavior Modification**

- Identification of goals in terms of target behavior.
- Designing the intervention, issues involved and deciding its components.
- Implementation of the planned program as well as careful monitoring.

**Shaping**

- Successive approximations of a required/-desired response are reinforced until that response is fully learnt.
- In the beginning each and every success is reinforced with a reward, no matter how small the success.
- Once the desired response is learnt the reinforcer immediately follows it, every time it happens.
- Once learnt the behavior, in many cases, the organism may not need reinforcement since many behaviors are self-reinforcing e.g. learning to play a musical instrument.

**Usefulness of Behavior Therapy**

- ***Found to be effective with 50-90% of patients especially treating phobias, anxiety disorder and other unwanted behaviors such as smoking and drug abuse.***
- ***Also helpful in the sense that it cal also be employed by non- professionals too.***
- ***Cheap and economical as it directly focused on the problem to be unlearn.***
- Criticized also because it also give importance to the overt observable behavior and does not evaluate the inner thoughts and experiences.

**Cognitive Approach in Behavior Modification**

**Negative and unacceptable behavior is modified through constructive strategies**

- ***According to this theory, person's beliefs and attitudes affect his motivation and behavior.***
- ***In order to modify the behavior, reinforcement techniques are used.***
- ***For attaining the desired goal, realistic strategies are used with continuous feedback.***

**Steps in Behavior Modification**

- ***Identification of goals in terms of target behavior;***
- ***Recording the preliminary/background information concerning the behavior in question;***
- ***Designing the intervention, issues involved and deciding its components.***
- ***Implementation of the planned program as well as careful monitoring.***
- ***Recording the events, progress, and problems during the implementation phase***
- ***Evaluating the program and making alterations if required.***

**Altering the Belief System**

- ***Psychologists are of the view that psychological problems arise due to the way people perceive themselves in relation with the people they interact.***
- ***Main focus of the therapist is to alter the irrational belief system of a person.***

© Copyright Virtual University of Pakistan

**Cognitive Theory for Depression**

- ***Aaron Beck formulated the therapy for depression patients.***
- ***Therapist helps the depressive person to change the faulty patterns of thinking through problem- solving techniques.***
- ***Believed that depression reoccur in depressive patients because the negative thoughts occur automatically from which they are unaware.***

Four tactics are used by the therapist that unfounded depression

i. Challenging the patient's ill beliefs.
ii. Evaluating the cause of depression.
iii. Attributing the cause to the environmental situation/ event not to the person's in competencies.
iv. Finding the alternative and effective solutions for the complex problems.

**Rational-Emotive Behavior Therapy**

- ***Developed by Albert Ellis (1962, 1977)***
- ***Focused on altering the irrational beliefs into more acceptable way.***
- ***Clients are forbidden to use "should", "must"," ought" etc.***
- ***Confrontation techniques are used which focused on changing the attitudes through rational reasoning.***
- Task is to protect the self worth, potential to be self-actualized by blocking the irrational thinking patterns.

**Humanistic Therapies**

**Central Themes of Humanistic Approach**

- Human beings are capable of shaping their own destiny.
- They can think and design their course of action and can follow it in the way they like
- People can overcome or minimize the environmental, and intrinsic influences.
- "Here and now" is important.
- "Wholeness" or "completeness" of the personality is important rather than its separate, disintegrated, structural parts.

**Humanistic approach emphasizes**

- Individual's freedom in directing his future.
- Capacity for personal growth.
- Intrinsic worth, and,
- Potential for self-fulfillment.

**Rogers' Approach**

- Primarily a clinical theory, based on years of Roger's experience dealing with his clients.
- In its richness and maturity his theory matches that of Freud; a theory well thought-out and logical, having broad application.
- The theory emphasizes on a single factor "force of life" which he calls the actualizing tendency i.e. built-in motivation present in every life form to develop its potentials to the fullest extent possible.

To be **fully functioning** means experiencing:

i. Optimal psychological adjustment.
ii. Optimal psychological maturity.
iii. Complete <u>congruence</u> (a feeling of integration when the self and the ideal self match; incongruence is a feeling of conflict or unease experienced in case of a mismatch between the two).
**iv.** Complete openness to experience. **Humanistic Approaches to Therapy**

- ***The approach suggesting that people are in control of their life.***
- ***The <u>person</u> or the <u>self</u>, and personal growth and development are emphasized by the humanistic psychologists.***
- ***The humanistic approach includes a number of other theories with the same or similar***

***orientation e.g., 'existential' and 'phenomenological' psychology.***

- Rogers maintained that the therapist must possess the following qualities:
  - i. **Congruence** -- genuineness, honesty with the client.
  - ii. **Empathy** -- the ability to feel what the client feels.
  - iii. **Respect** -- acceptance, unconditional positive regard towards the client

**Carl Roger's Psychotherapy**

- ***Carl Rogers is best known for his contributions to therapy known as "person- centered/ Client-centered therapy/ Non- directive therapy.***
- ***Also known as the Rogerian Therapy".***
- ***His main technique "Reflection"_ mirroring of emotional experiences.***
- ***Therapy in which the therapist's role is to reflect back the patient' statement in such a manner that the patient finds solutions to his/ her problems.***
- Aim of the therapy: To help a person grow and self-actualize.

**Other Approaches**

**Existential Therapy**

- ***Contrary to humanistic approach to therapy that focuses on unique freedom and potential as positive force, existential therapy is based on the notion that when an individual becomes unable to deal with his/ her freedom, it will result in anguish, fear, and concern.***
- ***The goal of life, according to this therapy is to properly grip and use one's freedom effectively with value systems one has in his/ her life.***
- ***Therapy also focuses on the individual's responsibilities that he must take in order to make free choices about his lives.***
- ***Therapist's job is to probe and challenge the patient's views of the world around.***
- ***In the same way, a strong bond is developed between the patient and the therapist so that the patient feels comfortable while interacting. Also both are experiencing the same difficulties and apprehensions.***

**Gestalt Therapy**

- ***The Gestalt therapy focuses on integrating the patient's thoughts and feelings into an integrate whole***
- ***This can be done through by placing oneself in that position as mother or father and then his/ her own position in order to experience different parts of a conflict.***
- ***The aim of the therapy is to express whatever is frustrating and conflicting to the person such as kicking the things around when angry, yelling out while frustration etc***
- ***This sort of activities encouraged the person to act out/ express the things that are conflicting and frustrating.***

**Group Therapy**

- ***A form of therapy in which people discuss problems and difficulties with the group members.***
- ***Several unrelated people work with the therapist and discuss their psychological problems with him; in some cases the therapist is active and directed towards the problem and sometimes the group takes up an issue and determines how to proceed.***
- ***People often discuss issues like smoking, alcoholism, or lacking social skills.***

•The other members of the group provide emotional support and suggestions so that the it can also be helpful to them in similar circumstances.

**Family Therapy**

- ***The therapy, which involves members of the family for finding solutions to problems.***
- ***Therapist considers family members as a unit in which each member serves as a contributor in order to gain an understanding of " how" they interact with one another.***
- ***Family therapists believe that problems arise in the family due to the rigid roles and conventions exhibited by the family and the solution of their problems lies in adopting new and constructive roles and patterns of behavior.***

**Biomedical Therapies**

- ***Medication***
- ***Psychosurgery***
- ***Lifestyle changes***

**LESSON 40**

## POPULAR AREAS OF PSYCHOLOGY

- Psychology today is the most popular social science.
- American Psychological Association has 55 divisions.

Most popular areas of psychology today:

- Clinical psychology.
- Health psychology.
- Organizational psychology.

**Major Sub fields of Psychology:**

- ***Behavioral Neuroscience***
- ***Clinical psychology***
- ***Clinical Neuropsychology***
- ***Cognitive Psychology***
- ***Counseling Psychology***
- ***Cross-cultural Psychology***
- ***Developmental Psychology***
- ***Educational Psychology***
- ***Environmental Psychology***
- ***Evolutionary Psychology***
- ***Experimental psychology***
- ***Forensic Psychology***
- ***Health Psychology***
- ***Industrial/Organizational Psychology***
- ***Personality psychology***
- ***Program Evaluation***
- ***Psychology of women***
- ***School Psychology***
- ***Social Psychology***
- ***Sport psychology***

*SOCIAL PSYCHOLOGY*

The branch of psychology concerned with how people's thoughts, feelings and actions are affected by others.

- How will we have if we do not have any people around us?
- What would we be like if we had never ever come across another human being

**Attitudes, Behavior and Persuasion**

**Attitudes**

Learned predispositions to respond in a favorable or unfavorable manner to a particular object.

Attitudes can also be defined as our learned evaluations that we hold about other people, objects, events, behaviors, and beliefs.

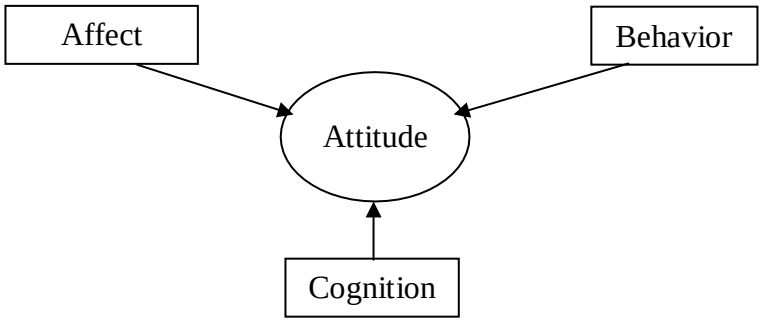
**ABC MODEL**

The model suggesting that an attitude has three components: affect, behavior and cognition.

**Affect component:** That part of an attitude encompassing how one feels about the object of one's attitude.

**Behavior component:** A predisposition to act in a way that is relevant to one's attitude.
**Cognition component:** The beliefs and thoughts held about the object of one's attitude.

**COMPONENTS OF ATTITUDES**




**Forming and Maintaining Attitudes Classical Conditioning and Attitudes**
Advertisers make use of the principals of classical conditioning of attitudes by attempting to link a product they want consumers to buy with a positive feeling or event.

**Operant Conditioning Approaches to Attitude Acquisitions**
Attitudes that are reinforced, either verbally or nonverbally, tend to be maintained.

**Vicarious Learning of Attitudes: Learning by observing others.**
For example, even if they have never met a blind person, children whose parents say that "blind people are incompetent' may adopt such attitudes themselves. We also learn attitudes vicariously through television, films and other media. (e.g. violence).

Agents of Attitude Formation

- Family
- School
- Peer group
- Neighborhood
- Social Environment
- Mass Media

***Persuasion***
Persuasion is the process through which people's attitudes are changed.

**Factors affecting attitude change**

- Message source
- Characteristics of the message
- Characteristics of the target audience**Message Source**

The characteristics of the attitude communicator or the deliverer of the message are important.
Characteristics that make a different:
Ø Physical attractiveness
Ø Social attractiveness
Ø Expertise
Ø Trustworthiness
Ø Audiences belief that the communicator does not have any ulterior motive.

**Characteristics of the Message**
Two-sided messages are more effective than one-sided messages.
Two-sided messages are the ones in which both sides of the argument are discussed.
Fear-producing messages are effective when it is accompanied by a solution to the problem as well.

© Copyright Virtual University of Pakistan

If the message is too fear provoking, and without a solution too, then it may be ignored.

**Characteristics of the Target**

Less intelligent people are less resistant and the more intelligent are more resistant to persuasion.
Persuasion is relatively easier with women when in public settings, and when they have less knowledge about the issue under question.
There are no gender differences in case of a change in private attitudes.

**Types of Information Processing used by the Target for Interpreting the Message**

a. Central Route Processing
b. Peripheral Route Processing

**Central Route Processing**

Interpretation of messages involving thoughtful consideration of the issues and arguments used to persuade.

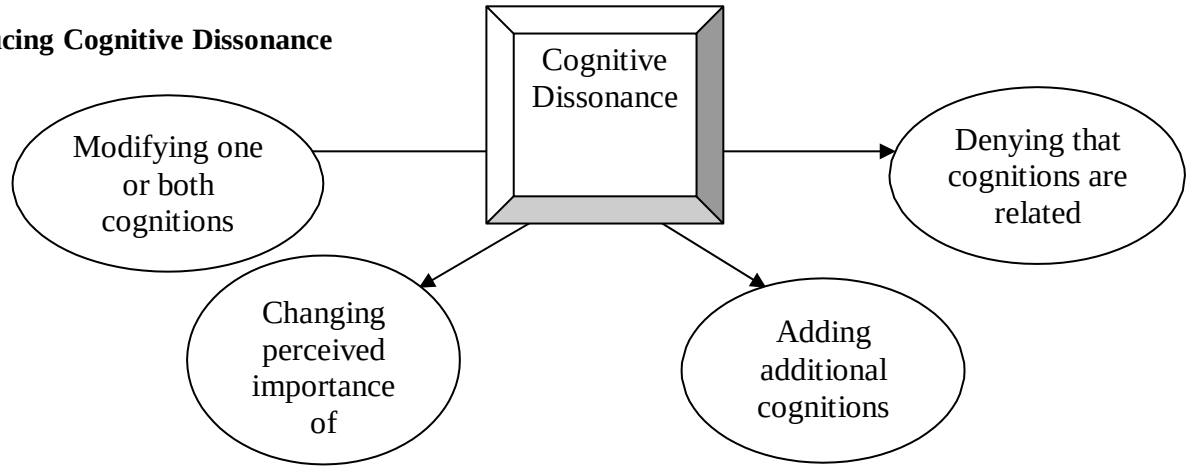
**Peripheral Route Processing**

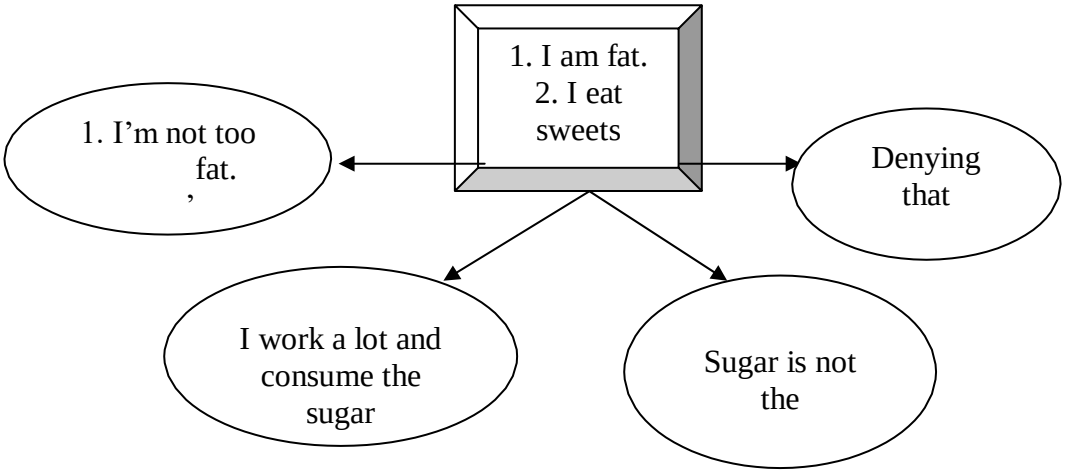
Interpretation of messages involving consideration of the message source, and related general information, instead of considering the message itself.

**Cognitive Dissonance**

•Cognitive dissonance is a conflict experienced by a person.
•This conflict arises when an individual holds two contradictory cognitions i.e., attitudes or thoughts.

**Reducing Cognitive Dissonance**



**Social Cognition**

The processes that underlie our understanding of the social world.

• We use social cognitions to understand and make sense of others and of ourselves.

**Schemas**

•Research shows that we have highly developed schemas.

Schemas are sets of cognitions about people and social experiences.

**Impression formation**

The process by which an individual organizes information about another individual to form an overall impression of that person.

**Central traits**

The major traits considered in forming impressions of others.

Theories of social cognition describe how people form an overall impression other's personality traits.

**Attribution Processes**

- ***The processes of attributing causes to other people's behavior***

**Attribution Theory**

- ***The theory of personality that explains how we decide, about the specific causes of an individual's behavior on the basis of samples of that person's behavior.***

**The Nature of Perceived Causes of Behavior**

*Situational causes*

***A perceived cause of behavior that is based on environmental factors.***

*Dispositional causes*

***A perceived cause of behavior that is based on internal traits or personality factors.***

**Biases in Attribution**

*1. The fundamental attribution error*

***People have a tendency to attribute the behavior of other people to dispositional causes; they give less importance to the situational causes.***

***2.* The halo effect**

- ***If our initial perception of a person is positive then we tend to expect that the person has other uniformly positive characteristics too.***

***3.* Assumed similarity bias**

- ***We have a tendency to think that others are similar to us. This may happen even when we see someone for the first time.***

**Social Influence**

***The process through which our behavior is affected by the actions of another individual or a group.***

- ***Social influence can be seen in terms of:***
- ***Conformity,***

- ***Obedience,***

**Conformity**

- *Conformity is going along with people.*
- *People are said to be conforming when their behavior or attitudes change as a result of a desire to follow the beliefs or standards of other people.*
- *The following variables may determine whether or not one will conform:*
    - *The characteristics of the group*
    - *The situation in which the individual is responding*
    - *The kind of task*
    - *Unanimity of the group*

**Obedience**

- *It is a form of conforming behavior that results from the commands of others.*

**Compliance**

- ***A form of conforming behavior that results from direct social pressure.***
- ***Different tactics are used by lay people, organizations, and salespersons to make others comply:***
    - ***The foot-in-the-door technique,***
    - ***The-door-in-the-face technique,***
    - ***The that's-not; all technique,***
    - ***The not-so-free sample.***

**Prejudice and Discrimination**

**Prejudice**

***Prejudice refers to the negative or positive expectations about social groups and their members.***

*Discrimination*

***Negative behavior toward members of a particular group.***

***Prejudice and discrimination may result from stereotypes:***

*Stereotype*

***A kind of schema in which beliefs and expectations about members of a group are held simply on the basis of their membership in that group.***

*Stereotypes can be positive as well as negative*

**Ingroup -Outgroup Bias**

The tendency to hold less favorable opinions about groups to which we do not belong, while holding more favorable opinions about to which we do belong.

**Out groups**

Groups to which people feel and believe they do not belong.

**In-groups**

Groups to which people feel and believe they do belong.

**Self-fulfilling prophecy**

An expectation about the occurrence of an event or behavior that increases the likelihood that the event or behavior will happen.

**LESSON 41**

## HEALTH PSYCHOLOGY

- ***The branch of psychology that focuses upon the role of psychological factors in the development and prevention of illness, in coping with disease, and in health promotion.***
- ***The branch of psychology that studies the relationship between psychological variables and well-being of a person.***

**According to Brannon and Fiest (2000)**

- ***Health psychology is the branch of psychology that concerns individual behaviors and lifestyles affecting a person's physical health.***
- ***Health psychology includes psychology's contribution to the enhancement of health, the prevention and treatment of disease, the identification of health risk factors, the improvement of the health care system, and the shaping of public opinion with regard to health.***

A health psychologist works in the following areas:
Enhancement of health
Prevention of disease
Treatment of disease
Identification of risk factors
Improvement of the health care system
Shaping public opinion regarding health

**Understanding Health**

***In order to understand the modern concept of health, we need to consider some questions:***

- ***How would you define health?***
- ***Who is a healthy person?***
- ***Can lifestyles be healthy and unhealthy?***

According to the World Health organization (WHO):

**HEALTH is " a state of complete physical, mental, and social well – being and not merely the absence of disease or infirmity".**

•The modern approach towards health is more prevention - oriented rather than treatment – oriented.

**Emergence of Health Psychology**

- ***American Psychological Association established its Division 38, Health Psychology, in 1978.***
- ***This was the formal establishment of health psychology as a separate discipline.***

**Facts leading to this newer definition and approach**

a. The leading causes of death today are no more infectious diseases, but lifestyle – related diseases: implying that they are preventable.

b. The escalating costs of health care have led to the realization that these costs could be controlled, even reduced, by preventive strategies.

c. The dissatisfaction with the existing medical model has been on a constant increase.

• Dissatisfaction is primarily based on the observation that a person, even after taking proper medication and receiving full medical care may still not be feeling healthy.

• This implies that something else may also be contributing to one's well-being. ***d. Research on the role of psychological factors in health and illness:***

- ***It was observed that psychological factors have a role in physical illness.***

- ***Also, psychological interventions are helpful in altering physiological conditions and symptoms.***
- ***Today there is a growing consensus that health is essentially an individual responsibility '.***

No community or state can give health BUT the required facilities.

**No improvement in the health care system can be efficacious unless the citizens assumes responsibility for their own well – being.**

Different psychological theories and models have tried to explain health – related beliefs and behaviors.

- The Health-Belief Model
- The Protection Motivation Theory
- The Theory of Planned Behavior
- Self – Regulatory Model
- Self – Efficacy Theory

All explanations agree on one point i.e.

A person's health, as well as the feeling of being healthy, depends to a large extent, on how much control does one feel over one's life, circumstances and health.

Health or a State of Complete Well-Being has to be earned and maintained by the Individual himself, who must accept this Responsibility

**Some Psychological Variables Affecting Health**

**Health Locus of Control**

Who is responsible for an individual's degree of health or illness? …The doctors, family/ friends, fate, or the person himself?

**Perceived Control**

The tendency to feel or experience responsibility about the personal health related acts and behaviors, as well as the ability to get the desired outcomes.

**Self Perceptions of Wellness**

The individual's personal feeling and evaluation of experiencing well-being, especially in comparison with others. •Wellness dimensions include; emotional, intellectual, physical, social, spiritual, and general dimensions.

**Learned Helplessness**

Proposed by Martin Seligman.

It is a belief that one has no control over the environment.

People conclude that unpleasant or aversive stimuli cannot be controlled.

This pattern becomes so ingrained that they do not try to remedy the aversive circumstances even if they actually can exert some influence.

**Health and Principles of Behavior Change**

- ***Classical conditioning***
- ***Operant conditioning***
- ***Observational learning***

**Classical conditioning**

- ***Many health-related behaviors are a result of classical conditioning:***
- ***Fear of going to a doctor or dentist***
- ***Fear of surgical procedures***
- ***Fear of swallowing medicine***
- ***Bulimia and Anorexia Nervosa: Fear of gaining weight after eating even in small amounts.***

**Operant conditioning**

- ***A number of health-related behaviors depend on operant conditioning:***
- ***Children tend to over-eat when mothers encourage them for eating.***
- ***Teenagers may begin drug abuse or smoking when peers dare them to try a drug or a cigarette.***
- ***Many people exercise regularly because others appreciate their physical fitness.***

**Observational Learning**

- ***Drug addiction usually results from observational learning.***
- ***People whose peer's exercise regularly tend to indulge in regular exercise.***
- ***Children may go for surgical procedures without fear if they observe other children doing the same.***

**Stress, Health, and Illness**

- *Stress* ***is the response of an organism to events that are threatening or challenging.***

***STRESSORS: circumstances that produce threats to our well-being (e.g. death of a loved one, marriage, exams, illness).***

- *Uplifts:* ***Minor positive events that make one feel good e.g. seeing an old friend, feeling healthy, completing a task.***
- *Daily Hassles* ***are also a source of stress.***

**The Nature of Stressors**

There are three general classes of events that can be seen as stressful:

**A. Cataclysmic Events**
**B. Personal Stressors**
**C. Background Stressors**

**A. Cataclysmic Events**

Strong stressors that occur suddenly affecting many people at once e.g., natural disasters.
Once they are over people can look forward to the future, knowing that the worst is behind them.
But at times the victims may experience POSTTRAUMATIC STRESS DISORDER i.e.,
Re -experiencing the original stress event and associated feelings in flashbacks or dreams

**B. Personal Stressors**

•Major life events that have immediate negative consequences, which generally fade with time (e.g. death of a loved one, loss of job, broken love affair).

**C. Background Stressors**

**Daily hassles causing minor irritations but have no long-term ill effects unless they continue or are compounded by other stressful**

**Manifestations of Stress**

A. **Psychological**: tension, anxiety, depression, and helplessness.
B. **Physiological:** Psychosomatic disorders i.e., medical problems caused by an interaction of emotional, psychological, and physical difficulties (allergies, aches and pains, flu).

**Impact of Stress**

**a. Direct Physiological Effects**

- ***High blood pressure***

- ***Decreased functioning of the immune system***
- ***Elevated hormonal activity***
- ***Psycho physiological conditions***

**b. Harmful Behaviors**

- ***Increased unhealthy behaviors e.g. smoking, alcoholism, and/or drug abuse***
- ***Poor nutrition***
- ***Sleep disturbances.***

**c. Indirect Health-related Behaviors:**

- ***Poor compliance with medical advice.***
- ***Delayed medical consultation and diagnosis.***
- ***Avoiding going to a doctor***

Stress and Illness

**Stress and Recovery from Disease**

- ***The patients' emotional response may partially determine the course of their disease.***
- ***A positive state of mind has been found to be associated with longevity of life.***

**Cancer and Stress**
Research evidence supports the hypothesis that stressors have a role to play in the onset of cancer.

**Smoking**
Cigarette smoking has been found to be associated with stress, which in turn is associated with heart disease, cancer, and a number of other diseases

**Stress and Recovery From Disease**
The patients' emotional response may partially determine the course of their disease.
A positive state of mind has been found to be associated with longevity of life.

**Measuring Stress**

- ***Major life events may be used as indicators of the stress one experienced.***
- ***The Social Readjustment Rating Scale by Holmes and Rahe is one of the assessment tools that can indicate the stress related risk that one may be facing.***

**Understanding Stress**
**General Adaptation Syndrome Model**
A model explaining the course of stress. Proposed by Hans Selye.
It suggests that a person's response to stress consists of three stages:

a) Alarm and mobilization stage: a person's initial awareness of the presence of a stressor.
b) Resistance stage: coping with the stressor.
c) Exhaustion stage: failure to adapt to a stressor leading to physical, psychological, and emotional problems.

**Coping With Stress**
The efforts to control, reduce, or learn to tolerate the threats that lead to stress.

**Strategies for Coping with Stress**
**Psychodynamic view**
**Defense Mechanisms: unconscious strategies people use to reduce anxiety by concealing its source from themselves or others. COPING CAN BE**

a. Emotion-focused

**b. Problem-focused**

Coping styles (hardiness) and social support play a significant role.

**Practical Strategies for Coping with Stress**
**1. Turn threat into challenge.**

**2.** Make a threatening situation less threatening.
**3.** Change your goals
**4.** Take physical action.
**5.** Preparing for stress before it happens i.e., stress inoculation.

Psychological Interventions for Helping People cope with Stress:

Relaxation techniques
Biofeedback
Behavior therapy
Cognitive therapy
Hypnosis
Meditation

**Behavioral/Psychological Factors in Major Disorders and Risky Behaviors**Coronary Heart Disease
Cancer
Diabetes
AIDS
Hepatitis
Accidents
Obesity
Eating Disorders
Addictive behavior

**LESSON 42**

## INDUSTRIAL/ORGANIZATIONAL PSYCHOLOGY

- ***The branch of psychology that investigates the psychology of the workplace.***
- ***Industrial/organizational psychologists use the scientific methods and knowledge for studying the affects, cognitions, and behaviors of people in the work settings.***

**Major focus of interest**

How best to fit the right person to a given job.
How best to fit the job to the person

**How best to fit the right person to a given job**

What does "doing a good job," mean?
Personnel selection: How to select people who do the job well?
Training: How to train them so that they do the job well?
Motivation: How to motivate them so that they do the job well?

**How best to fit the job to the person?**

Quality of work life
Job satisfaction
Worker safety

**Fitting the right person to the job**

***It involves the following:***

***a. Job analysis***

***b. Personnel selection***

***c. Personnel training***

***d. Worker's motivation***

**a. Job analysis**

- ***The first step in selecting the right person for a job is to do a job analysis.***
- ***Job analysis is to prepare a specific description of a job. It encompasses the qualities and behaviors required of a person to do the job properly.***
- ***It is "the systematic study of the tasks, duties, and responsibilities of a job and the knowledge, skills, and abilities needed to perform it" (Riggio, 1990).***
- ***The purpose of job analysis is to find the best person for the job.***
- ***For this we have to be very clear about the requirements of the job.***
- ***Also, these requirements have to be translated into specific measurable behaviors.***

**A complete job analysis is a two-step process**

*Step 1*

***Preparing a detailed description of what a person to be selected for a particular job is expected to do.***

- ***The job analysis has to be specific.***

- ***Instead of stating general duties it should describe actual behaviors that the person has to perform.***
- ***In general the duties and the responsibilities have to be specified.***

**Step 2**

- ***Determining*** *the performance criteria* ***needed for the proper performance of a job.***
- ***The specified duties and responsibilities have to be translated into measurable personal characteristics.***
- ***Here, the Industrial/Organizational psychological has to outline the exact behaviors and characteristics that a person ought to have in order to perform the job in the best possible manner.***

**'Hard' Criteria and 'Soft' Criteria**

*Hard Criteria*

***These are the objective criteria.***

***These criteria are obtained from the available data e.g. salary, number of units sold, number of absentees etc.***

*Soft Criteria*

***These are the subjective criteria.***

***Soft criteria have a personal touch and require a degree of judgment i.e., sense of humor, congeniality, creativity etc.***

- ***For example the best student of your college may be selected on the basis of her grades, or her interaction with fellow students, or both i.e., soft as well as hard criteria.***

**b. Personnel Selection**

- ***Once job analysis is complete, the next task is to select the right person for the job.***
- ***Personnel selection includes:***
- ***Devising ways of selecting the best applicant.***
- ***Making decisions regarding retention.***
- ***Making decisions regarding promotion.***
- ***Making decisions regarding termination.***

**Personnel Selection: Functions of an Application Form**

- ***It can be a rough screening device.***
- ***It can supplement, or provide cues for, interviewing.***
- ***The information contained in the application form may be used as a predictor of future performance e.g. academic record and job history can be indicative of a person's ability and potential.***

**Personnel Selection: Employment Interview**

- ***Employment interviews can be structured or unstructured.***
- ***Structured interviews are preferred over the unstructured interviews.***
- ***These consist of carefully phrased, prescribed, uniform, and fixed-ordered questions for all***

***applicants.***

- ***Structured interviews are considered more valid than the unstructured ones.***

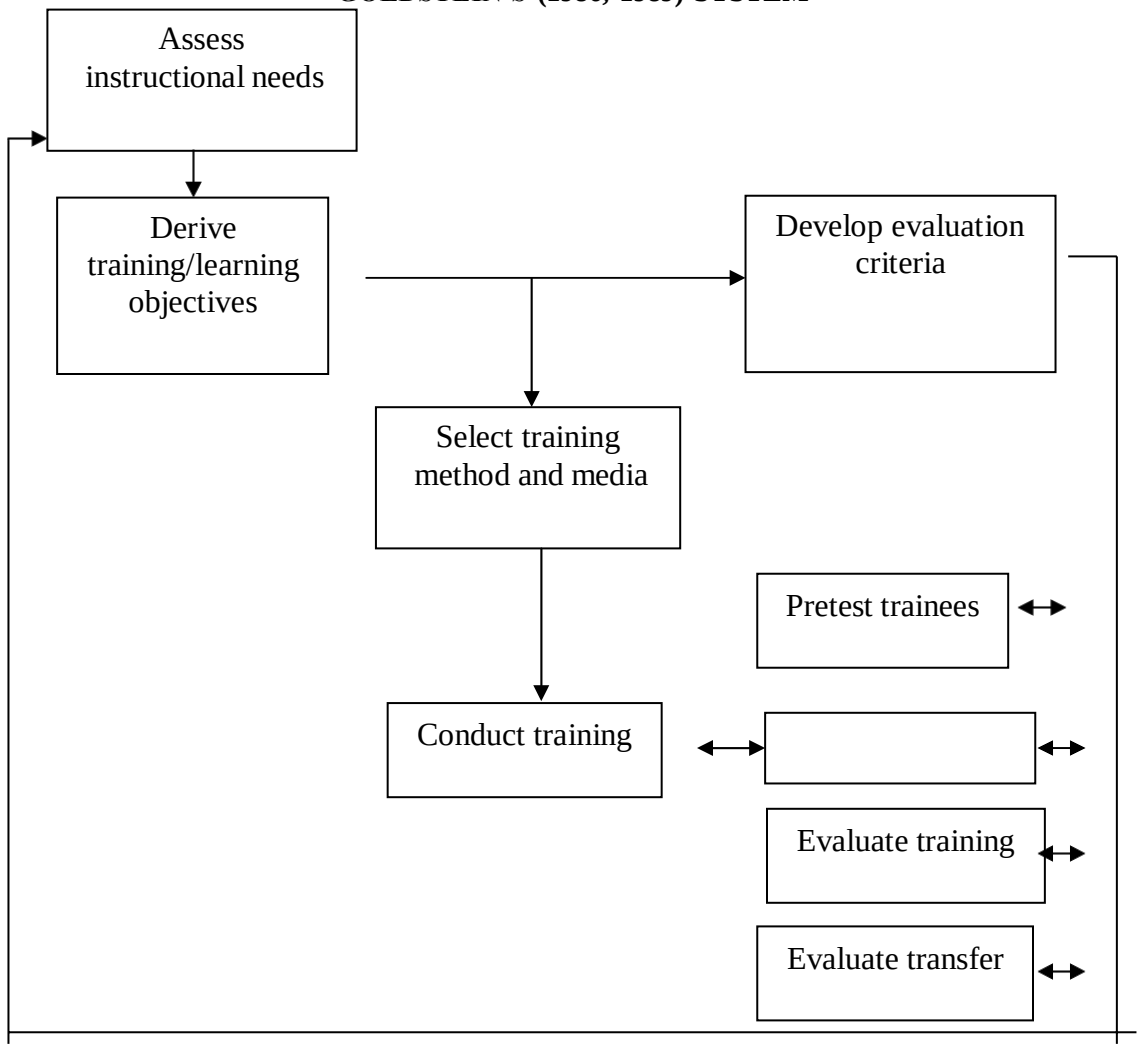
**Personnel selection: Use of Psychological Tests**

- ***At times the data obtained through application form and interviews may need to be supplemented by psychological assessment.***
- ***Intelligence, ability, aptitude, achievement, or personality tests may be used.***
- ***The tests of cognitive functioning (e.g. ability or achievement) have been found to be most useful.***
- ***The use of I.Q tests for screening purposes is an issue of dispute.***

**c. Training the Selected Personnel**

- ***Proper training is a requirement and a partial guarantee that the selected person will do the job well***
- ***Training refers to a systematic and intentional process of altering the behaviors of employees to increase organizational effectiveness (Gerow, 1997).***

**ASSESSING TRAINING NEEDS**
**GOLDSTEIN'S (1986, 1989) SYSTEM**



**Evaluating training Effectiveness**

- ***It can be done in various ways;***
  - ***Taking trainees' ratings***
  - ***Assessment by the organization i.e., measuring effectiveness with reference to training objectives***

**d. Workers' Motivation**

- ***Workers' motivation affects efficiency and productivity of the organization.***
- ***A team comprising unmotivated workers will not be able to attain the desired goals.***

**Motivation to Work**

- ***For an organizational psychologist, what motivates a person to carry on or not his work is much dependent on three explanations. They are;***
- ***Need theories***
- ***Cognitive theories and***
- ***Reinforcement theories***

**Need theories are** primarily based upon Maslow's hierarchy of needs in which the most basic needs are easily fulfilled while complex needs may be difficult to meet or may remain unfulfilled.

**In order for higher order needs to be met; the basic and lower level needs have to be met first.**

- ***When this theory relates to work, it maintains that initially workers are more concerned with salary and job security but when these requirements are met, and then they move towards the more sophisticated and complex needs.***
- ***In this way workers strive to fulfill their requirements by doing work***

**Cognitive Theories of Work Motivation**

- ***Theories that focus on the cognitive aspects of motivation; i.e. about the job and the work place as the motivational force***
- ***How people think, feel, understand and expect about the job are the cognitions that affect motivation.***

**Expectancy Theory**

- ***Workers make logical choices to do what they believe will result in their attaining outcomes of highest value.***

**Equity Theory**

- ***Workers are motivated to match their inputs and outcomes with those of fellow workers in similar positions.***
- ***This can be assumed to have a basis in vicarious learning.***

**Reinforcement Theories of Work Motivation**

- ***The theory is based on the learning principles and maintains that motivation is increased or decreased by the level and type of reinforcement that is given to the workers***
- ***Positive reinforcement increases in production or optimal production***
- ***Punishment suppresses motivation.***

© Copyright Virtual University of Pakistan

- ***No reinforcement discourages motivation.***

**Goal setting as a motivational technique**

- ***Setting goals can motivate workers:***
- ***Set difficult but achievable goals.***
- ***Goals should be specific and focused rather than general and vague.***
- ***Feedback regarding achievement of goals should be regularly provided.***
- ***Employees should be aware of the specific goals, and should accept them as reasonable.***
- ***Cultural concerns should be kept in mind.***

***In collective cultures, where working together is practiced, involvement in goal setting is more important than in individualistic cultures.***

**Fitting the Job to the Person**

- ***Molding the job and the workplace in such a way that workers put in optimal efficiency and productivity.***

**Job Satisfaction**

- ***An attitude toward or a collection of positive feelings about, one's job or job experience***

Factors of Job Satisfaction:

- ***In job satisfaction, decision- making is very important.***
- ***Usually two types of decision- making may take place:***
    - ***Decentralized decision- making and***
    - ***Centralized decision- making***
- ***In decentralized decision- making the power extends throughout the organization***
- ***In centralized decision- making power and authority rests in the hands of just few individuals at the top***
- ***Job satisfaction is higher in organizations following decentralized decision-making.***

**Some Facts about job Satisfaction**

- ***Younger workers tend to be more dissatisfied with their job.***
- ***Older workers are more jobs dissatisfied by the end of their careers.***
- ***There are no significant gender differences in terms of job satisfaction.***
- ***There is a positive relationship between job satisfaction and perceived level or status of one's job.***

**Nature and Type of Job and Job Satisfaction**

- ***It depends on two things***
- *Job clarity*

***The rules and what is being expected of the person from the particular job are explicit to the worker.***

- *Role conflicts*

***It has a negative effect on job satisfaction.***

***It arises when the person is unable to perform the job adequately and optimally because the roles and responsibilities are not clearly defined.***

- ***Role conflict may make it easier to hide mistakes.***
- ***But it also leaves little room for one's contribution being clearly identified.***

**Ways of Enhancing Job Satisfaction**

- ***Industrial and organizational psychologists are concerned with ways of enhancing job satisfaction, as it is beneficial both for the organization and the workers.***
- ***There can be three main approaches to affecting job satisfaction:***
- ***Changing the job***
- ***Changing the person in the job***
- ***Matching the person to the job***

**Worker Safety**

- ***Job satisfaction can be improved if the organization is concerned about he safety and security of the workers, and the workers are also aware of the fact.***
- ***Practical and explicit steps toward maintaining employees' protection have a positive effect.***

© Copyright Virtual University of Pakistan

**LESSON 43**

# CONSUMER PSYCHOLOGY

**Try to find answers to these questions**

- ***Why do manufacturers advertise their products?***
- ***Why do advertisers use models in the advertisements?***
- ***Why do advertisers use cartoons rather than human models in the advertisements of children's products?***
- ***Why do manufacturers introduce only one new model in a year?***
- ***How will we decide what to buy if there were no advertisements?***

**Consumer Psychology**

- ***The branch of psychology that studies consumers' buying behavior and the effect of advertisement on these behaviors.***
- ***Consumer psychology focuses upon consumers' decision making and their behavior in the market place.***
- ***The effect of advertisement on people's attitude and buying habits is an area of special interest for a consumer psychologist.***
- ***Consumer psychology is division 23 of apa.***

**Focus of Interest**

What Do Consumer Psychologists Study?

- ***The responsive attitude of humans towards the product and service related information and experiences.***
- ***Responses such as emotions, feelings, attitudes, beliefs and judgment as well as purchase decisions and consumption practices.***
- ***Information about the product and the related service information are very important.***
- ***Variables such as advertisements, product packaging, package labels, coupons, consumer magazines, and word- of - mouth communication with the near ones that affect consumer behavior.***
- ***Also brand loyalty, product preference, price, marketing and selling strategies are***

*Aim or Goal*

- ***The main aim or goal of consumer psychology is to describe, predict, influence, and/ or explain consumer responses.***

**Consumer Psychologist**

- ***Consumer psychologists are the psychologists who are educated and trained in understanding consumer habits and the influence of advertisements on consumers' attitudes, thoughts and behavior.***

**Other tasks of consumer psychologist**

- ***Consumer psychologists are educators, trainers, researchers as well as administrators.***
- ***Understanding and predicting consumer behavior is not an easy task.***

© Copyright Virtual University of Pakistan

- ***Even the experienced salesmen are not able to accurately read the consumer's mind.***
- ***The main task of a consumer psychologist is to conduct consumer research.***

**History of consumer psychology**

- ***j b. watson was the first ever-prominent psychologist to apply principles of psychology in the field of advertising.***
- ***watson believed that psychology could not be recognized as a scientific discipline until its practical utility is proved by its application and demonstration in real life situations.***

**According to watson**
**"If psychology would follow the plan i suggest, the educator, the physician, the jurist, and the businessman could utilize our data in a practical way."**

he himself designed ads for johnson and johnson's baby powder.
in that ad, he not only targeted the emotions and anxieties of mothers, but also used the experts' recommendations and the impact of using the product.

**Focus of interest**

- The main focus of interest of consumer psychology is:
- To emphasize the consumer's problems, likes, dislikes and preferences
- Develop strategies for making ads, influencing purchasing decisions, innovative marketing, brand and product techniques.

**Sub- fields of consumer psychology**

- ***Advertising***
- ***Perception***
- ***Life stages: time, experiences and preferences have a physical as well as psychological effect.***
- ***Motivation***
- ***Psychology of price***
- ***Market research***

**Important terminology of consumer psychology**

- ***Consumer behavior***
- ***Personality***
- ***Sales***
- ***Marketing***
- ***Product choice***
- ***Product preference***
- ***Brand loyalty***

**Learning principles used for attracting consumers**

**Classical conditioning**
Advertisers use models to create a positive feeling and attraction for the product.

**Operant conditioning**
Manufacturers announce prizes, prize coupons, and extra amounts of product, upsized products at same price, price reductions, and lucky draws for consumers.

**Observational learning**
advertisements show renowned people using the product under question so that potential consumers feel like following their footsteps.

**Some factors affecting product preference**

- personality type and brand loyalty
- peer pressure
- product price
- reputation of the product
- packaging: color, wrappers, shape, size, captions etc
- quality of the product
- advertisement
- need

**Advertising appeals**

Advertisements are to develop a positive image about the product by using attractive models and positive feelings like happiness, excitement, curiosity, and desire.
Two main techniques are used to make advertisements:

i. soft sell appeals
ii. hard sell appeals

**i. Soft sell appeal**
An approach used to selling the product in which the softer aspects of the product are promoted.
the product is associated with an image related to the product's use.
The soft sell delivers the message that the potential buyers will obtain or radiate a desirable image through the use of the product.
The purpose is to attract the potential buyer through the peripheral rout.
Here the image rather than the product is sold.

Examples of the soft sell appeal

- ***Advertisements promoting cosmetics talk about the beauty of the model.***
- ***As of men's products deliver messages about the manliness of the male model, or how people are impressed by his masculinity e.g. advertisements of cigarettes.***

**ii. Hard sell**
The hard sell approach is the opposite of the soft sell appeal.
It focuses on the qualities of the product itself.
The advertisers promote the function of the product

Qualities like taste, smell, speed, durability, efficiency, dependability, and/or its nutritional value are emphasized.
It is stressed as to how much improved the consumers' lives will be because of using the product being advertised.

**Examples of the hard sell appeal**

***Advertisements of automobiles, joggers, mechanical instruments, exercisers, metal products, air conditioners etc.***

**Research findings about advertising appeals**

- ***Children's products are sold through soft sell appeal.***
- ***In case of women's products soft sell appeal is used in advertisements of cosmetics, toilet soaps, and garments.***

- ***But in case of women's perfumes or shoes hard sell appeal is preferred.***
- ***Advertisements of household linen and paints use the hard sell appeal.***

**Self- monitoring and buying behaviors**

Self monitoring has been found to be an important variable in ones buying behavior and experimenting with new products.

Self monitoring is the tendency to consider our own behavior and changing it in order to present us well in particular social situations

High self- monitors are flexible in nature and adjust their behavior from situation to situation in an attempt to present them in an effective manner.

They are concerned about the image they project and are apt to show conspicuous variations in their behavior from one social context to the next

In contrast, low self- monitors are relatively more "fixed" in their general attitude.

They are much less sensitive to the demands of different social settings, and their behavior is more indicative of their attitudes, values and beliefs.

The behavior of low self- monitors is considerably more consistent across situations, as compared to that of high self- monitors

High self-monitors are affected more by advertisements in general and soft sell appeal in particular.

Psychographics: investigating the psychology of the consumers

When the manufacturer launches a product, or the advertiser plans a campaign, they have to be aware of the needs of the potential buyers.

Research has shown that people belonging to different backgrounds and different socioeconomic classes have different buying needs and behaviors.

It has been identified that people with different lifestyles and needs go for different varieties of products.

Researchers have used different psychological profiles of people based upon their lifestyles to predict and target their needs.

Psychographics is a technique for dividing people into life style profiles that are related to purchasing patterns.

Such profiles take into account characteristics as marital status, race and ethnic background, and educational level, as well as the kinds of activities that potential buyers engage in.

One of the most popular and widely used general classification systems for consumers is vals or values and lifestyles (mitchell, 1983).

the vals approach divides consumers into four major groups.

vals nine american lifestyles

**Need driven consumers include?**

Survivors

Sustainers

**Outer- directed consumers include**

•belongers

emulators

achievers

**Inner- directed consumers include**

i- am- me

experientials

Societal conscious

**Combined outer- and inner- directed group**

integrateds

research findings show that members of particular subcultures will have distinct purchasing patterns.

**Different groups have significant differences in values and interests, besides the socio- economic variations.**

•awareness of these differences enables the sellers to attempt to target products and advertisements toward certain groups.

**a. Need- driven consumers**

they make purchases primarily to satisfy basic, elemental needs.

**Outer- directed consumers:**

**they make purchases in order to increase their own self- awareness.**

the outer- and inner- directed consumers have similar social and self- needs
like maslow's hierarchy, the first few levels in the vals hierarchy classify groups of individuals whose needs are largely related to two particular lifestyles,

**The survivors and the sustainers**

both of these are small, impoverished groups whose basic preoccupation is to simply ' living'.
these groups have limited material resources.
the range of products that are advertised through advertisers is quite limited for the sustainers and the survivors.
the manufacturers, sellers, and the advertisers are keener to work upon the groups that have the financial means to purchase the products that they are there to sell.
there are two other categories:
the i- am-me's (young, egocentric people confused about their goals in life).
the experientials (former i-am- me 's who become surer of their goals and more outward looking) and socially conscious (mature, well informed individuals with a strong interest in social issues such as politics or the environment).

**Psychographic profiles can be used for many reasons**

- ***Identifying specific needs of people coming from specific backgrounds i.e., where to sell tissue papers, and where to paste the advertising posters.***
- ***Also, these help in deciding the medium of advertising.***
- ***For example, in areas without electricity tv ads would be meaningless.***
- ***Instead radio could be an apt medium since most people will be listening to a transistor.***

**Sub cultural differences in consumer behavior**

consumer research has revealed a lot about the understanding of differences that exist between sub groups within the general population.
the way different groups make decisions regarding purchase are different e.g. in our culture taking loans for buying household goods is generally not considered desirable.
studies on sub cultural differences in consumer behavior have revealed that clear differences exist between different racial and ethnic groups.

Consumer cognitive processing: decision making in the marketplace

how do you decide which product to buy, which brand to stick to, and which new brand or product to buy?
Micro marketing is a technique of targeting marketing efforts to particular buyers on a neighborhood or even individual store level.

Problem recognition:

the first process in the model is to recognize that some types of needs exist.
in the case of the cell phone that continually breaks down, the need is to buy a new one. in the other cases, such as buying a music system, the need is not fully clear, and a certain amount of cognitive efforts is required before one can make decision.
Information search:

once the problem is clear; the consumer gathers relevant information through different sources.

Evaluations of alternatives:

different alternatives gathered after research are compared and contrasted.
their pros and consequence are evaluated.

Brand beliefs:

consumers also make decisions regarding their brand beliefs and brand loyalties.
brand beliefs are the assumptions held by consumers of a product, based on their knowledge of the reputation of the manufacturer.
prior experience with a brand also plays a role in taking a decision.
Purchase
finally the purchase is made.
when purchasing a product the consumer tries to keep the risk to the minimum.
he may seek a guarantee or assurance.
post purchase evaluation

Last stage in the decision buying process
In this stage, we assess the decision to buy, including the choice of the product.
Advantages and qualities are also evaluated.
In case of an expensive choice, the consumer may experience cognitive dissonance

*Cognitive dissonance reduction strategies may be used here*

- ***However if the re evaluation suggests that in spite of being expensive the product was worth buying, then there may be no cognitive dissonance.***

**LESSON 44**

## SPORT PSYCHOLOGY

**Have You Ever Thought About These Issues?**

- ***Why don't cricketers show a consistent performance?***
- ***Why do they come back to the pavilion when we expected them to make a century?***
- ***Why do sportsmen end up with a sprain or a pulled muscle when they had to play a crucial match?***
- ***Why do spectators cheer up their favorite teem and hoot the other one? Why do some players become aggressive, agitated. Irritable, and even refuse to play when hooted or teased by the crowd?***
- ***The answers to these questions may be found in sport psychology.***

**Sport Psychology**

- ***Exercise and sport psychology is Division 47 of APA.***
- ***The branch of psychology that studies, understands, describes, and predicts the impact of psychological variables on athletic and sport performance.***

*Sport psychology is the application of the principles, knowledge, training, and understanding of psychology for the understanding of factors affecting sport performance, with an aim to improve it, and to make the sportspersons feel stronger and more confident.*

- ***"The application of psychological principles to sport and physical activity at all levels of skill development" (Brown an Mahoney, 1984).***

History of Sport Psychology

- ***Although man was always interested in sports, in improving sport performance, in sport training, and in negatively affecting the performance of the opponent's team, the history of scientific research is not very old.***
- ***Research in psychological aspects of sport originated in Europe and then flourished in the U.S.***
- ***The earliest proper sport research was reported by Norman Triplett in 1897.***
- ***He analyzed the performance of cyclists under conditions of social facilitations.***
- ***For this purpose he used field observation and secondary data.***
- ***He reported from his research that the presence of other competitors could facilitate better cycling performance.***

**Coleman Roberts Griffith**

- ***Known as the father of Sport psychology in North America.***
- ***He established the first sport psychology laboratory at the University of Illinois in 1925.***
- ***He studied the nature of psychomotor skills, motor learning, and the relationship between personality variables and physical performance.***

**The formative years of Sport psychology**

- ***The period from 1950 to 1980 is considered as the formative years of sport psychology.***
- ***Sport psychology emerged as a separate discipline distinct from exercise physiology and motor learning.***

© Copyright Virtual University of Pakistan

**The Subject Matter of Sport Psychology**

- ***Education***
- ***Training***
- ***Research***
- ***Sport performance***

**Psychological Characteristics of Athletes**

- ***One of the areas of special interest to the sport psychologists is the study of personality characteristics of athletes and sportspersons.***
- ***One could predict sport performance and choose good athletes if one knew the psychological indicators of sport performance***
- ***One has to be clear about the different connotations of the words 'athletes' and 'sportsmen'.***
- ***Although the two terms are used differently in everyday life vocabulary, to a sport psychologist these two do not mean much different.***

**Some Research Findings**

- ***Although not very strong empirical evidence is available on this issue, some interesting facts are available in research literature.***
- ***As compared to the non athletes, the athletes usually score higher on tests of: assertion***
- ***Dominance***
- ***Aggression, and***
- ***Need for achievement***

**Athletes score lower on**

- ***Anxiety level***
- ***Depression, and***
- ***Fatigue.***
- ***These findings stand truer when the athletes are at a high skill level.***
- ***Athletes in some sports e.g. hockey and football are more tolerant of pain as compared to athletes in other sports e.g. bowling or golf.***
- ***But there is some evidence suggesting that the pain tolerance may be an outcome of an athlete's success rather than a cause.***

**Enhancing and Maximizing Sport Performance**

- ***One of the major tasks of a sport psychologist is to assist the trainers, the coaches, and the team managers as well as the sportspersons themselves in raising the level of performance.***
- ***In this regard, a major portion of research evidence pertains to the arousal level of the sportsperson.***
- ***Sport psychologists have also worked in the following areas:***
- ***Enhancing motivation***
- ***Learning relaxation techniques***
- ***Stress management***
- ***Pain control and management***
- ***Overcoming anxiety***

© Copyright Virtual University of Pakistan

- ***Enhancing stamina***
- ***Improving performance***

**Arousal level**

- ***Sport psychology suggests that sport performance can be improved by manipulating arousal level of the***
- ***one playing in the field.***
- ***Arousal level has been found to be related with motivation of the sportsperson.***

***A certain level of arousal is good, in fact essential, for sport performance and competition. However, too much or too little arousal has negative effects.***

**What is Arousal?**

- ***Arousal is a neutral physiological phenomenon or state accompanied by:***
- ***Increased heart rate***
- ***Elevated Blood pressure***
- ***Rapid respiration***
- ***Increased metabolism***
- ***More than usual hormone secretion***
- ***The state of arousal is an active sympathetic nervous system (SNS) state.***
- ***It is like a fight or flight response.***

**How much Arousal is Good for Sport Performance?**

- ***Although no standard can be fixed for it, research shows that different levels of arousal may be involved in optimal performance on different tasks.***
- ***According to Cox (1990):***
    - ***Making a long putt in golf requires a low level of arousal,***
    - ***Blocking a shot in volley ball requires a slightly higher level,***
    - ***Making a tackle in football an even higher level, and***
    - ***A bench press in weight lifting requires a very high level of arousal.***

**Arousal Level and the Role of a Sport psychologist**

- ***A sport psychologist makes the sportspersons aware of, and sensitive to, their arousal level.***
- ***They are trained to maintain arousal at a certain appropriate level in a manner that the task being performed remains concentrated upon.***
- ***The knowledge of biofeedback is applied here.***
- ***They are trained in being sensitive to arousal related indicators e.g. blood pressure, respiration rate, heart and pulse rate, muscle tension etc.***
- ***There is abundant evidence available that suggests, and that has proved, that human beings can gain control over even their involuntary functions.***

**Mental Practice: Helping sportspersons give "Peak Performance"**

- ***Sport psychologists have devised strategies for helping athletes and others in reaching and maintaining peak performance.***
- ***Research suggests that mental practice involving "imagery "accompanied by actual physical***

***practice is helpful in learning skills, improving and maintaining performance.***

**Mental Practice and Sport Performance**

- ***Rehearsing the task mentally, imagining one's self in the actual field.***

**Functions of Mental Practice**

- ***The task at hand is rehearsed mentally. This provides a vivid image of the scenario to occur later.***
- ***Negative thoughts that may interfere with performance are reduced.***
- ***The sportsperson can rehearse his/her part in a team sport.***
- ***It helps in setting realistic goals.***

**The Phenomenon of Home Field Advantage**

- ***It is a common observation that athletes and sportspersons perform better and are more relaxed when playing in home ground.***
- ***Psychological research does not provide a 100% solid support to this observation.***
- ***Mixed findings are available in this regard.***
- ***Research has shown that frenzied, yelling, screaming hometown fans may raise arousal levels of the home team beyond the point of maximum efficiency.***
- ***This reveals the negative effects of playing on the home ground.***
- ***One possible fallout may be that the athletes feel more under pressure as they feel they are expected to perform at their best, and no one is going to forgive a mistake.***
- ***According to Mahoney, while commenting on Olympic athletes:***

***"At this level of competition the different between two athletes is 20 percent physical and 80 percent mental".***

***Mental practice can help overcome this problem.***

**Other strategies used by sport psychologists**

Overcoming self consciousness

- ***The same tactics as those used for assertiveness training are used.***

**Principles of learning and sport performance**

- ***Operant conditioning approach involving positive reinforcement is effective in raising motivation to performance at peak level.***
- ***In learning a sport observational learning is most beneficial.***
- ***Vicarious learning can take place through direct, live observation, or through video recordings.***

**Stress management and overcoming anxiety**

- ***Relaxation techniques***
- ***Good nutrition***
- ***Developing optimism through cognitive interventions***
- ***Self Talk***

© Copyright Virtual University of Pakistan

**LESSON 45**

## FORENSIC PSYCHOLOGY

- ***Applying psychological rules in the judicial system.***
- ***Area of psychology that applies psychological principles and methods to various areas of the legal system.***
- ***It is also defined as the area where clinical methods and techniques are used in the legal system.***
- ***It is one of the fastest flourishing areas of psychology.***

**Bartol & Bartol (2004:8) define forensic psychology as:**
"The research endeavor that examines aspects of human behavior directly related to the legal process and the professional practice of psychology within, or in consultation with, a legal system that embraces both civil and criminal law."
Psychologists' job is both clinical and forensic in nature in the sense that they provide clinical services to the traumatized patients, and also submit the assessment report to the court about the extent and the nature of psychological damage that has occurred.
Forensic psychology is dealt with under the Division 41 American Psychology- Law Society of APA.

**The role of the psychologist in the legal system**

- ***Assessment of the accused.***
- ***Testimony.***
- ***Psychological intervention for those under trial.***
- ***Rehabilitation of the convicted.***
- ***Research in criminal psychology: causes and contributing variables.***

**Forensic Psychology's Contributions in Various Judicial Areas**
Forensic psychology is mainly concerned with:
i. Divorce and child custody.
ii. Determining the criminal responsibility or insanity and the competence of an accused to stand trial.
iii. Selection of the jury.
iv. Recording case proceedings for assessment.
v. Providing expert point of view and opinion while assessing questions, which are psychological in nature.
v. Assessing and evaluating the response receptiveness.
vi. Usage of psychological principles and tests.
vii. Recruitment of police officers, fire fighters, security and military personnel.
viii. Explaining the causes and effects of psychological disorders and illness.
ix. Providing consultation to develop and maintain workplace safety and for violence debriefing procedures.
x. Developing and applying treatment programs to offenders and people at risk.
xi. Conducting researches on increasing, improving, and modifying the treatment and rehabilitation procedures.
xii.Developing profiles of different types of offenders.
xiii. Teaching, training, and providing professional help on various issues of forensic psychology.

**What is the role of forensic psychologist?**
A forensic psychologist does a number of things:

- **Basic and applied research:** mainly on the legal matters and/ or related issues. In this, a forensic psychologist studies: the legal practice and the legal matters, attitudes and behavior of criminals, police officers, eyewitness testimony, jury behavior, memory, perception, recall etc.
- **Training/ education** to the people in the legal system such as police officers, judges, lawyers (rarely) correctional staff etc

- **Clinical applications** (these are the activities that are most well-known).
- **Judging and evaluating various behaviors:** insanity, various competencies, civil commitment, custody, claims of psychological injury, and psychological fitness for law enforcement work.
- **Providing counseling and treatment:** to offenders, inmates, police officers and their families, and the victims.
- **Providing consultation to law enforcement agencies:** for crisis intervention, hostage negotiation, critical incident debriefing, autopsy, psychological profiling
- **Providing expertise to courts** such as expert testimony, amices curiae briefs, alternative dispute resolution.
- **Helping the lawyers:** Giving suggestions about how to evaluate the clients, preparation of witnesses, jury selection.

**Origin and History of Forensic Psychology**

- ***Forensic comes from the Latin word*** *"forum".*
- ***Forums were the public places or gatherings in the Roman city- states where the debates took places on the judicial processes.***
- ***Its history dates back to at least the turn of the 20th century.***
- ***Hugo Munsterberg is regarded as the first forensic psychologist.***

Alfred Binet and Sigmund Freud were the ones who developed psychological tests that could be used in judicial proceedings and suggested that the time taken by the person to answer questions could be an important factor in estimating whether the person is the real culprit or not.

In 1916, Lewis Terman began to apply psychological tests for law enforcement and used intelligence tests in assessing intelligence of 30 applicants for the jobs of police and fire fighters.

Psychology's applications in law and law enforcement continues since the 1920's. Today there are almost 2000 psychologists who belong to the American Psychology- Law Society.

Different psychologists take this field with different perspectives. i.e. some defines it as the intersection of psychology and legal system, whereas others take it as the clinical practice of psychology in legal departments.

The American Board of Forensic Psychology and the American Psychology-Law Society (1995) define forensic psychology as:

"**The professional practice by psychologists within the areas of clinical psychology, counseling psychology, neuropsychology, and school psychology, when they are engaged regularly as experts and represent themselves as such, in an activity primarily intended to provide professional psychological expertise to the judicial system."**

They also emphasize on:

- Investigations,
- Studies,
- Evaluations,
- Advice to attorneys,
- Advisory opinions, and

Depositions and testimony that helps in the resolution of disputes relating to life or property. Also, forensic psychologists assist other lawful tribunals, and deal with the issues that reach the court, as well as the situations arising after the court decision.

**Important Terminology in Forensic Psychology**

***The commonly used terminology in forensic psychology is:***

- ***Competency.***
- ***Insanity.***
- ***Expert witness.***
- ***Criminal profiling.***

- ***Jury consulting/consultation.***

**Important Sub- Fields of Forensic Psychology**

- ***Clinical- forensic psychology.***
- ***Developmental psychology.***
- ***Social psychology.***
- ***Cognitive psychology.***
- ***Criminal investigative psychology.***

**Ethics Essential to Be Followed by the Forensic Psychologist**

- ***The following rules are essential to be followed by forensic psychologists. They are;***
- ***Responsibility,***
- ***Competence,***
- ***Relationships,***
- ***Confidentiality,***
- ***Use of scientific, approved and standardized methods,***
- ***Communication harmony.***

**Requirements of Becoming a Good Forensic Psychologist**

- ***Those who wish to become a forensic psychologist need to have special skills like:***
- ***Patience,***
- ***Adaptability,***
- ***Feeling comfortable while working with other people,***
- ***Research- oriented mind.***

**Psychology of Women**

***Division 35 of APA Society for the Psychology of women.***

The main focus is on psychological, biological. social, and lifespan development differences and similarities of the genders with emphasis on the major life events of women.

The following areas are of special interest to a psychologist involved in women/gender research:

- Female physiology and reproductive health.
- Female cognitive skills
- Early socialization into sex roles.
- Stereotyping women in media.
- Cultural determinants of sex differences
- Work issues; power relationships between men and women, psychosocial factors in
- Women empowerment
- Physical and mental health issues.
- Discrimination and violence prevention.
- Gender equality and equity