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# UNIT 1 INTRODUCTION TO PSYCHOLOGY\*

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## 1.0 LEARNING OBJECTIVES

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After studying this unit, you will be able to:

- define psychology;
- appreciate psychology as a science;
- know the origin and development of psychology;
- explain the subfields of psychology;
- discuss different methods to study psychology; and
- know the development of psychology in India.

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## 1.1 INTRODUCTION

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Do you know that the word psychology is derived from two Greek words “psyche” and “logos”? *Psyche* means soul (life) and *logos* means knowledge (explanation)

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\* Dr. Meetu Khosla, Associate Professor of Psychology, Daulat Ram College, University of Delhi and Dr. Monika Misra, Assistant Professor of Psychology, SOSS, IGNOU, New Delhi.

or the study of the soul. The founders of psychology were both philosophers and psychologists and both tried to find answers to the philosophical questions in a scientific manner, like distinction between nature and nurture, existence of free will, etc. The word ‘psychology’ (*Psychologia* in Latin) dates back to 16th century, but was popularized in German by the early 18th century philosopher Christian Wolff. One of the most influential early users of the term in English was Herbert Spencer, who published the first volume of his *Principles of Psychology* in 1870.

Psychologists preferred using the word *mind* rather than *soul*. Psychology was one of the last special sciences that separated from philosophy in the nineteenth century. Today, psychology is very popular among students and has become a part of everyday lives. So, in this unit, we will talk about interesting facts and information about the origin of psychology. This unit will explain what psychology is all about and what are the different approaches applied by psychologists to understand human behavior. The unit will further elucidate various subfields of psychology and the methods used to conduct research in psychology. It will also discuss the diverse areas where psychologists work. Finally, development of psychology in India will be discussed.

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## 1.2 DEFINITION OF PSYCHOLOGY

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It is difficult to define psychology as it has a very vast scope. As the discipline was emerging, there were long debates as what should be studied in psychology and how it should be studied. The most popular definition is that it is the science of human and animal behavior and it includes the application of this science to different problems of the human beings. The most accepted definition today is *psychology is the science of behavior and mental processes*. Thus, there are three parts to the definition. Firstly, psychology is a science because it systematically tries to gather data by carefully observing and recording events or behaviors of humans and animals under controlled experimental conditions. Thus, measurement of behavior is as objective as possible in psychology. The knowledge that is gained collecting data with the help of experiments and other methods of observation, is then applied to solve real-life problems.

Secondly, the term behavior in the definition implies the overt actions and reactions. Whatever the animals or humans do, that is of interest, can be recorded, such as actions, thoughts, emotions, attitudes, etc. Lastly, the term mental processes refer to all the covert or internal processes, such as thinking, feeling and remembering. Succinctly said, psychology is a science that seeks to understand and predict human and animal behavior (Morgan, King, & Robinson, 1984).

### Box 1.1

**Psychology** is the study of the mind and behavior. The discipline embraces all aspects of the human experience — from the functions of the brain to the actions of nations, from child development to care for the aged. In every conceivable setting from scientific research centers to mental health care services, “the understanding of behavior” is the enterprise of psychologists.

-American Psychological Association

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## 1.3 PSYCHOLOGY AS A SCIENCE

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The ancient Greek philosophers inquired into how human beings *know the world*. This is known as **epistemology** (Greek words *episteme* means knowledge and *logos* means discourse). If we trace the history of psychology, we find that psychology emerged from merging of *physiology*, a branch of biology (natural science) and

the branch of philosophy, known as *epistemology*, or the theory of knowledge. Thus, the conceptual foundations of psychology are found in philosophy, but the creation of an independent science of psychology came from biology. The early psychologists believed that psychology could be developed through a systematic framework by conducting research in experimental laboratories. Contribution by Darwin (theory of evolution), Newton (conceptualization of physical laws), and Mendeleev (Periodic Table of Elements) strengthened the systematic approach towards psychological research. Thus, in the beginning, psychology was a synthesis of physics, physiology and mental philosophy and the psychological research was restricted to mind-body-physical relationships. Later, with the growth in the discipline, social, cultural and interpersonal problems of human behavior were included. It may be added here that the theoretical leanings of the psychologists, for example physiological psychologists (focus of study is nervous and glandular system) or social psychologists (concerned with social aspects of human behaviour), is most important in understanding behaviour. There have been different views as to whether psychology should be a part of natural sciences or social sciences. For psychology to be considered as a natural science, the main assumptions are, *natural monism* (also known as reductionism, where a theory or a phenomenon is reduced or simplified to its simplest part), *operationism* (validity of the finding depends on the validity of the procedures employed in arriving at that finding), and *determinism* (all actions are subject to natural laws and must be explained in terms of causative factors in individual's heredity and environment). For psychology to be considered as a social science, the researcher uses experiments, follows all precautions of scientific observation and control, and interprets the results with the help of quantitative or statistical techniques. Though, there are no assumptions in designing experiments or studies as well as in interpreting data.

Psychology thus, studies human and animal behavior very carefully, in a systematic manner. It is as objective in its evaluation as any other field of science. It has an *empirical approach*. It gathers information or data by doing experiments and observations, analyses, and interprets data within a framework that maybe replicated and verified, rather than relying on others opinions, beliefs or discussions.

**Box 1.2 : Empiricism or Empirical Approach**

All sciences are based on empiricism. Developed by English philosopher John Locke, this approach states that our senses (hearing, taste, touch etc.) are the only legitimate source of gaining information about this world.

The experiments that are conducted, have certain variables that are controlled and are designed in such a way that if someone else wants to repeat the study, they can do so. The data is collected very systematically and quantified in order to understand the order of the events that take place. Nowadays, qualitative approach has also gained importance. The results obtained thus, contribute in developing certain theories that help to predict behavior. Sometimes, theory also guides the research endeavor.

**Nomothetic and Idiographic approach**

It is an approach to describe the aims, procedures, and theoretical orientation of psychologists. Psychologists with *nomothetic* approach seek to establish general laws and principles governing mental and behavioural processes, ignoring the individual. In this approach, a number of participants are selected as being a representative sample of the population. After data collection and analysis, inferences and generalizations are carefully done from the experiment.

The *idiographic* approach is concerned with the understanding of a particular individual or event. The inquiry is focused on the person because this approach emphasizes that each individual is unique and must be understood in terms of his or her psychosocial environment.

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### 1.3 ORIGIN AND DEVELOPMENT OF PSYCHOLOGY

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It should be clear by now as to how psychology is defined and why psychology is considered as a science. In the beginning, psychology was a part of philosophy. It moved away from philosophy and became an independent discipline approximately 138 years ago. ‘Psychology has a short history but a long past’, this remark was made by Hermann Ebbinghaus over a century ago, which is a kind of reflection on Greek philosophers who wrote on human nature. Thus, Greek philosophers like Socrates (428-348 BCE), Plato (428-347 BCE) and Aristotle (384-322 BCE) tried to explain human mind and its relationship to the physical body as early as 4 BCE. Socrates famous thought ‘know thyself’ emphasized on the importance of self and personal reflection. Later on, French philosopher René Descartes (1596-1650) considered pineal gland (body physiology) as the ‘seat of the soul’, the place where all thoughts are formed.

The success of experimental methods in physics motivated some scientists to use experiments to study mind and behavior. One of the first scientists to study psychological processes was the German physiologist Gustav Theodor Fechner (1801-1887), who studied psychophysics, a branch of psychology. The first laboratory was established in 1879 in Leipzig, Germany by Wilhelm Wundt (1832-1920). In 1883 in the USA, the first formal psychology laboratory was set up in John Hopkins University by Wundt’s student, G. Stanley Hall (1844-1924). There was much progress, but moving away from philosophy was quite difficult. American Psychological Association (APA) started in 1892 and Hall became its first president. William James (1842-1910) wrote the first textbook on psychology known as “The Principles of Psychology”. The psychologists, in the beginning, had an empirical approach to understand thinking, attention, imagery, etc. The experiments were done to study the mind and mental experiences. Gradually, different schools of thought came up with different viewpoints about the nature of the study of psychology. They emphasized that the focus should be on the study of behavior rather than the mind.

Now, let us look at the main schools of thought or the main perspectives in psychology, which have contributed in the development of the discipline. These approaches begin from the traditional to modern and focus defining behaviour and conducting research according to the leanings of the psychologist(s).

- 1) **Structuralism:** The main focus is on analyzing the basic structures of the human mind. This view is known as *structuralism*. It is associated with **Wilhelm Wundt and Edward Titchener** (Wundt’s student). Wundt believed that consciousness could be broken into thoughts, experiences, emotions and other basic elements. The process to examine and measure one’s subjective experience objectively was known as **objective introspection**. Objectivity here refers to unbiased approach and this was the first attempt to bring objectivity and measurement in psychology. **Edward B. Titchener** (1867-1927) became interested in knowing the structure of the mind. With structuralism came an active interest in knowing the elements of consciousness. Structuralism was very strong in the beginning, but faded out in 1900s.



Box 1.3

**WILHELM WUNDT (1832-1920): Father of Experimental Psychology**

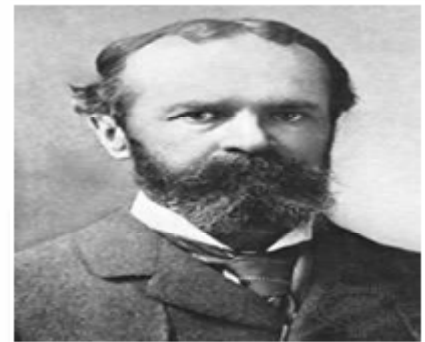
Wilhelm Maximilian Wundt was born on August 16, 1832, in Neckarau, Baden, Germany. He was the fourth child of minister Maximilian Wundt and his wife, Marie Frederike. He began his formal education at a Catholic gymnasium which he disliked and failed. He was transferred to another gymnasium in Heidelberg from where he graduated in 1851. Wundt joined medicine and after a poor start, he excelled in his studies. Wundt received an assistantship with Hermann von Helmholtz. His fundamental work *Principles of Physiological Psychology* was published in 1873 and 1874. This work proposed the main tenets of his experimental psychology and inspired scientific psychology across the world.



**Figure 1.1: Wilhelm M. Wundt**

Image Source: <http://www.famouspsychologists.org/>

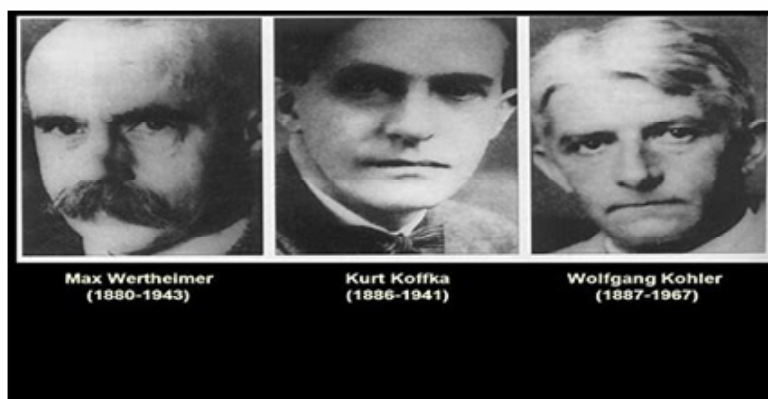
- 2) **Functionalism:** This view was strongly influenced by Darwin's theory of natural selection (functionalists believed that the theory could be applied to psychological characteristics) and the focus of study was functions of mind and behavior (like learning, memory, problem-solving and motivation). **John Dewey** (1859-1952) developed functionalism, focusing on what the mind and behavior do and how they enable a person to adapt to new and complex situations. **William James** (1842-1910), the main contributor, was concerned on how the mind allows people to function in the real world. This approach came to be known as functionalism. James established psychology laboratory at Harvard University.



**Figure 1.2: William James**

Image Source: <https://www.britannica.com/>

- 3) **Gestalt Psychology:** Later psychologists conducted experiments to study sensations in order to know how the mind functions. In 1912, **Max Wertheimer** (1880-1943), **Kurt Koffka** (1886-1941) and **Wolfgang Kohler** (1887-1967) founded gestalt psychology in Germany. They emphasized upon the whole notion of sensory experience, connecting the sensations to relations and organization as a whole. They studied the mind by applying the *principles of organization* to human behavior.

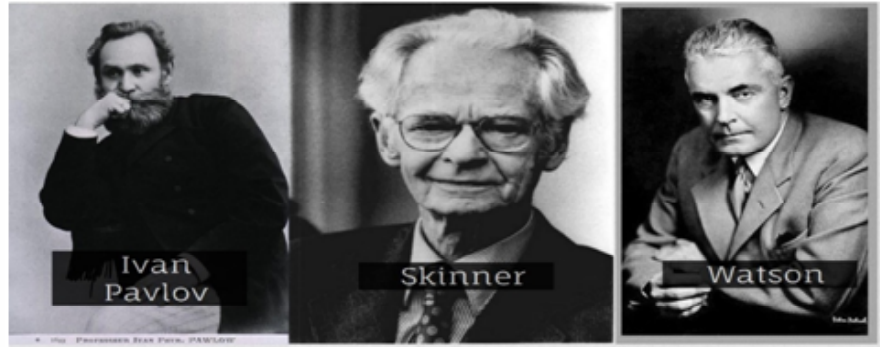


**Figure 1.3: Max Wertheimer, Kurt Koffka, Wolfgang Kohler**

Image Source: <https://slideplayer.it/slide/576962/2/images/>

**Psychology :  
What It Is?**

- 4) **Behaviourism:** This school originated with **John B. Watson** (1879-1958) and **Burrhus Fredrick Skinner** (1904-1990), who disregarded mind as the matter of study and stressed that psychology should study only observable forms of behavior, ignoring the covert processes. They gave more importance to the study of behavior and what activities animals or humans engage in. Watson emphasized on conditioned responses, learned behavior and animal behavior. **Ivan Petrovich Pavlov** (1849-1936), a physiologist whose studies of digestion won him the Nobel Prize in 1904, concluded that stimuli other than food, may produce salivation and this led him to study conditioned reflex in detail.



**Figure 1.4: Ivan Pavlov, B.F. Skinner, J.B. Watson**

Image Source: <https://www.emaze.com/>



**Figure 1.5: Sigmund Freud**

Image Source: <https://www.alamy.com/stock-photo>

- 5) **Psychoanalysis:** Psychoanalysis was founded by Austrian psychiatrist, **Sigmund Freud** (1856-1938). Freud proposed that *unconscious motivation* plays an important role in nervous disorders and stressed the importance of early childhood experiences in personality development. Freud believed that urges and drives are expressed in behavior and thought. The focus is on the role of unconscious thoughts, memories and feelings. These unconscious thoughts and memories were revealed through free-talk and dream interpretation, in a process called *psychoanalysis*. Freud influenced psychologists like **Carl Jung** (1875–1961), **Alfred Adler** (1870–1937), **Karen Horney** (1855–1952) and **Erik Erikson** (1902-1994). Their approach was known as *psychodynamic* approach and were referred as Neo-Freudians.
- 6) **Humanistic Perspective:** Also known as ‘third force’ in psychology, focused on people’s ability to direct their own lives. The key features are free-will, freedom to choose one’s destiny, strive for self-actualization, and achievement of one’s own potential. The main founders are **Abraham Maslow** (1908-1970) and **Carl Rogers** (1902-1987).



**Figure 1.6: Carl Rogers and Abraham Maslow**

Image Source: <http://slideplayer.cz/slide>

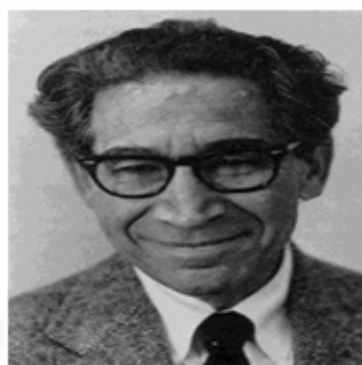
- 7) **Cognitive Perspective:** The gestalt approach and the development of computers stimulated interest in studying higher-order mental processes. This perspective gained prominence in 1960s and focused on memory, intelligence, language, problem-solving, and decision-making. Main contributors are German psychologist **Hermann Ebbinghaus** (1850–1909), who started the study on memory by investigating the formation of associations by learning serial lists of nonsense syllables, and the English psychologist, **Sir Frederic Bartlett** (1886–1969), who studied the cognitive and social processes of remembering.



**Figure 1.7: Hermann Ebbinghaus**

Image Source: <https://quotesgram.com/hermann-ebbinghaus-quotes>

- 8) **Sociocultural Perspective:** The main focus is on social and cultural factors that influence behavior. Research from this perspective is important because it can highlight the different influences of environment, social norms, class differences, ethnic identity, etc. Sociocultural psychologists concluded that norms of western cultures are primarily towards *individualism* and norms from east Asian cultures are primarily oriented towards *collectivism* or interdependence. Social psychologist **Leon Festinger** (1919-1989) proposed *cognitive dissonance* theory that states that a person is aware at some level if she or he acts inconsistent with her or his belief, attitude or opinion.



**Figure 1.8: Leon Festinger**

Image Source: <https://hubpages.com/education/>

- 9) **Biological Perspective:** It is concerned with the biological bases of behavior and mental processes. Role of nervous system, hormones, brain chemicals, and glandular system are the biological causes of behavior, and they are the focus of research.

- 10) **Evolutionary Perspective:** This perspective is inspired by Charles Darwin's theory of natural selection. *Evolution* was first proposed by Darwin which involves three basic components, namely, *variation*, *inheritance* and *selection*. The internal mechanisms are *adaptations* and are products of natural selection that has helped the humans (living species) to survive and reproduce world over. Evolutionary psychologists believe that the behavioural predispositions or tendencies, such as 'aggression', is determined by genes and which is transferred from one generation to the next. Research from evolutionary perspective examines behaviour (aggression, mating, etc.) in different species, which may be influenced by evolution. They also give importance to sociocultural factors that could have led to the actual behaviours. David Buss is one of the main founders of evolutionary psychology.



**Figure 1.9: David M. Buss**

Image Source: <https://thebestschools.org/>

**Table 1.1: Important Schools of Psychology**

<b>Schools of Psychology</b>	<b>Main Idea</b>	<b>Main Proponents</b>
Structuralism	Identify the basic elements or 'structures' of psychological experience with the help of 'introspection'	Wilhelm Wundt, Edward B. Titchener
Functionalism	The focus is on how the mind allows the people to function in the real world	William James
Psychoanalysis	Highlights on the role of unconscious thoughts, feelings, memories and early childhood experiences in determining behavior	Sigmund Freud
Gestalt	Focus is on perception and sensation, 'the whole is greater than sum of its parts'	Max Wertheimer, Kurt Koffka, Wolfgang Kohler
Behaviorism	Focus is on observable behavior only	Ivan Pavlov, John B. Watson, B. F. Skinner
Humanistic	Self-actualization and free-will are most important features	Abraham Maslow, Carl Rogers
Cognitive	Concerned with the study of mental processes, like, perception, thinking, memory, and decision-making	Hermann Ebbinghaus, Sir Frederic Bartlett, Jean Piaget
Socio-cultural	Based on how the social situations and the cultures in which people find themselves, influence thinking and behavior	Fritz Heider, Leon Festinger, Stanley Schachter
Biological	Behavior is the result of genetic influence, hormones, and neural mechanism	Charles Darwin, E. Wilson, J.M. Harlow
Evolutionary	Concerned with evolutionary origin of behaviour	David M. Buss, D. Singh

**Check Your Progress 1**

1. Define psychology.

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2. Why is psychology considered a science?

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3) Complete the following table:

Schools of Psychology	Main Idea	Main Proponents
Structuralism		
Functionalism		
Psychoanalysis		
Gestalt		
Behaviorism		
Humanistic		
Cognitive		
Socio-cultural		
Biological		
Evolutionary		

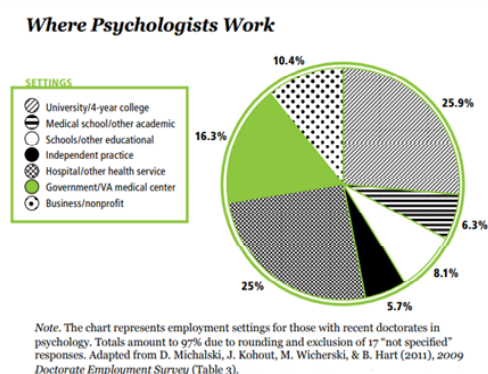
## 1.5 SUBFIELDS OF PSYCHOLOGY

There are different sub-fields of psychology. Psychology involves a wide range of studies of mind, behavior, perception, learning, to name a few. Before explaining the sub-fields, let us first differentiate between a psychologist, psychiatrist and a psychiatric social worker. A **psychologist** has a doctorate degree in psychology and not a medical degree. After academic training and specialization in a specific area, the psychologist works in a particular vocational setting or a career. On the other hand, a **psychiatrist** has a medical degree in psychiatry, and makes diagnosis and treats patients of psychological disorders by prescribing medicines. A closely related field is of **psychiatric social worker** who has earned a Master's degree in this area and is mainly concerned working on the environmental conditions that may have an impact on psychological disorders.

Psychologists examine different patterns of behaviors and study how external and internal factors influence the mind and behavior. There are varied interests of different psychologists. Some may have interest in social psychology, while others may be interested in cognitive psychology, while some may be interested in community and developmental psychology both.

There are many applications of psychology and many areas of work.

**Figure 1.10** shows the type of settings where psychologists work.



**Figure 1.10: Where Psychologists Work?**

Image Source: <http://www.apa.org/>

**Psychology :  
What It Is?**

Some of the major subfields of psychology and the career choices in psychology are as follows:

**Cognitive Psychology:** It is the area where psychologists study how the human mind, thinks, remembers and learns. Psychological principles are applied to understand the decision-making process and how we perceive the world.

**Clinical Psychology:** The field is concerned with assessment, diagnosis, causes and treatment of mental disorders. Most of the clinical psychologists are engaged with state mental hospitals or community mental health centres, schools, private practice, research and teaching.

**Counselling Psychology:** Counseling psychologists deal with people having problems of milder emotional or personal intent. Generally, people who need help in making a career choice or deciding which educational program to opt for, seek help from a counseling psychologist. They may use a variety of assessments such as tests or interviews to assess interest, aptitude, intelligence or personality attributes. Some counselors may also help people having family problems or marital problems.

**Environmental Psychology:** The focus is on human-environment interrelationship. Psychological principles are applied to improve interaction among people and for sustainable living.

**School Psychology:** The major focus of this field is psychology of learning and effectiveness of school programs. School psychologists work with elementary, and secondary school children, teachers, parents and school administration. They provide counseling and guidance in schools and assess students' interests, aptitude, adjustment, learning ability, intelligence, and such related factors. Testing also helps to diagnose students who have behavioral difficulties. Counselling is given to those students who need special attention.

**Educational Psychology:** The focus of this area is on psychology of teaching. Educational psychologists are involved in more general kind of problems that are not of immediate concern. They guide the students to enhance their efficiency in learning in school by working on the school curriculum and motivational skills.

**Experimental Psychology:** The field is concerned with the study of different facets of behavior like, learning, memory, perception, etc. using controlled experiments in the laboratory or the field. They try to understand the basis of behavior and thought and try to develop certain modification techniques on the basis of their research findings. They try to investigate how mental processes or behaviours are experienced and how behavior can be directed.

**Physiological Psychology:** The field examines the relation between brain and behavior in humans and animals. Impact of nervous system and glandular system on behavior is the focus of physiological psychologist. They use invasive and non-invasive techniques to study the biological basis of behavior.

**Organizational Psychology:** Psychological principles are applied to work-settings to enhance the well-being and performance of employees. Organizational psychologist uses various psychological tests to select and place employees in the jobs they are suited for. Many organizations employ organizational psychologists to hire people, train them, manage their interpersonal skills and job satisfaction, employee-employer communication, etc. The research in this field pertains to finding solutions to the problems faced in the organizational sector with respect to the employees or the work output or any other emotional problem faced by the employees.

**Social Psychology:** Social psychology studies groups of people, their relationship to one another, their characteristics, attitudes, beliefs, their decision-making process and communication with other members of their group, group cohesion, etc. The emphasis is to understand the behavior of an individual in a group.

**Developmental Psychology:** Developmental psychology is concerned with behavior across the life span, that is, from beginning of childhood, through adolescence into adulthood and how the behavioural patterns change across different developmental stages. Developmental psychologists particularly try to examine any behavioral disorders that occur during childhood. They also try to understand the cognitive, perceptual, social, moral, and language development that takes place in children.

**Community Psychology:** It is a new area of psychology that deals with community problems, principles, social issues, and health issues. Psychologists help the people living in one community to deal with their problems, seek out their traditional forms of psychotherapy, stress, child-rearing practices, social systems etc.

**Sports Psychology:** It is also a new area that focuses on psychological aspects of sports behavior. Sports psychologist works with professional teams at school/college level or national and international level to enhance performance in sports by working on exercise and team work.

**Health Psychology:** This is an emerging area that is concerned with the physiological processes, behavior, and social factors that influence health and illness. Health psychologists work in clinical settings, and are involved in research and teaching in higher educational institutes.

**Forensic Psychology:** It is a new field in psychology that applies psychological principles in the area of criminal justice system and legal investigations. Forensic psychologist works on the rights of victims, rights of accused, criminal profiling, policy-making, and other related areas.

### Check Your Progress 2

- 1) Differentiate between a psychologist and a psychiatrist.

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- 2) Define the work of a sports psychologist and a forensic psychologist.

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## 1.6 RESEARCH IN PSYCHOLOGY

It must be clear by now that psychology is considered a science as it accomplishes the key assumptions of a scientific approach. By scientific, it is meant that there is less likelihood of subjective bias and errors in collecting and interpreting data. So, the key assumptions in a scientific investigation are like,

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- **Description:** A psychologist is concerned with observing behaviour. The focus is on describing what is happening, where it is happening, to whom it happens, and what is the context in which an event happens.
- **Explanation:** The psychologist based on the observations tries to explain the phenomenon. Thus, the theory will emerge which will explain the facts.
- **Prediction:** It is concerned with changing or modifying behavior.
- **Control:** This step refers to modifying behavior from an undesirable to a desirable one.

It is not necessary that the psychological investigation may follow all the above assumptions. A psychologist may only describe and explain a phenomenon while as, a therapist (researcher) is involved in controlling that will help in behavior modification. Thus, the goals of research may differ keeping in perspective the objective of the study. So, to carry out a research in psychology, the basic steps to be followed are like this:

- 1) **Problem:** This is the first step to start a research. If you are curious about any interesting phenomenon and to which you want to find an explanation, you will form a question. For example, a researcher might be interested in studying whether exposure to more screen time (mobile, computer, television, tabs) makes children vulnerable to inattentiveness and decrease in school performance.
- 2) **Hypothesis/es:** Question is followed by a tentative explanation known as *hypothesis*. Hypothesis testing is fundamental to any scientific investigation and which leads to theory generation.
- 3) **Testing the hypothesis:** Hypothesis testing depends on the research design, the method in which the researcher collects and analyses and interpret data to get an explanation about the problem or question.
- 4) **Interpretation and conclusion:** After the results are obtained, it will be clear if the hypothesis is accepted or rejected. If it is a quantitative research design, the results obtained will be statistically analyzed. If the study is qualitative, then qualitative methods will be employed to analyse data. Statistical methods are used to find out association between variables or differences between groups.
- 5) **Reporting the results:** The results are to be reported so that it may be replicated, though replication is not easy. How the research was conducted, why it was conducted, and what were the findings has to be reported and shared with other researchers so that investigation continues and new knowledge is added to the research question.

**Box 1.4 : Replication**

A study maybe replicated that is, it is repeated to see if the same results are obtained in order to establish reliability of the results.

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## **1.7 METHODS OF RESEARCH IN PSYCHOLOGY**

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There are various approaches to study psychology scientifically. A *research design* is a method used by the researcher to collect, analyze and interpret data. It may be qualitative, quantitative or mixed approach (that includes both qualitative and



quantitative). Primarily, three types of methods are used in research in psychology. They are descriptive method, experimental method, and correlational method.

### 1.7.1 Descriptive Method

There are three main types of descriptive research design. They are *case study*, *survey* and *systematic observation*.

#### 1.7.1.1 Case Study

Case study is based on a small set of participants, this may include one participant or a small group. The basic premise is that each person is unique. It gives a detailed account of an individual's behavior and emotions. Interesting examples who have used case study are Freud, who used case study as a method to gather information from his patients that helped him to conclude psychoanalytic theory of personality. Jean Piaget also used case studies of his own children to come out with the most important theory on cognitive development. Rokeach (1964) 'The Three Christs of Ypsilanti: A Psychological Study', is an important case study of three patients with schizophrenia. The main disadvantage of case study is that the results cannot be easily generalized. The method is very subjective and hence, is prone to subjective bias.

#### 1.7.1.2 Survey

In survey method, the researcher asks question about the problem being studied. This may be conducted with the help of face-to-face interview, telephonic interview, online-interview or questionnaire. Many questions can be asked and a lot many participants can be included in survey method. Though, the researcher has to ensure that the participants are a **representative sample** (sample is randomly selected from a large population of participants) of the group selected. Also, survey method has a disadvantage where the participants might not give correct answers, that is their true opinion. This may also happen when the participant thinks that the answer is not socially desirable or correct.

#### 1.7.1.3 Systematic Observation

One of the important methods to study behavior is observation. It collects data or gathers information in a systematic manner. The experimenter does not manipulate an independent variable in this method. The researcher simply make systematic observations of the events/behaviors that are occurring naturally in the environment. After making a number of observations, the researcher tries to understand the plausible reasons for the observed behaviour(s). The researcher tries to understand how people vary in their behaviors and then look for logical reasons to explain the observed differences. When a number of observations are made to deduce the logical cause of behavior, it is known as inductive reasoning. From this, various principles of behavior are developed. However, there are various reasons that may impede the observed behaviors and it is relatively difficult to make the deduced observations, unlike an experiment where information is gathered in a more controlled setting. Systematic observation is preferred along with other forms of data collection as a supplement to information also. When human behavior is observed in natural conditions or where the behavior occurs is known as **naturalistic observation**. Naturalistic observation is mostly employed to study animal behavior. This may be applied to human behavior also, for instance, if the researcher wants to conduct a study in a shopping centre.

### 1.7.2 Experimental Method

Experimental method involves a research problem that needs to be investigated. Based on the review of the literature and theoretical background, certain assumptions are made about the observable events. This assumption is known as a *hypothesis* which is a statement about the expected outcome of events. The person who does an experiment is known as an *experimenter* and the person or animal on which the experiment is done is known as the *participant*. The experimenter keeps some events or behaviors constant that are likely to influence the expected observation. There are some conditions known as *variables* that could be an object or event or condition which could have different values. It can vary quantitatively and is easily measured. Variables are of different kinds. There is an *independent variable* that is manipulated by the experimenter and the effect of the independent variable is seen on the *dependent variable*. For example, if the problem is to study the effect of temperature on mood. Then the independent variable is the temperature and the dependent variable is the mood. A dependent variable can be the response of the person to a particular stimulus. A *stimulus* is an object or event that evokes a *response*.

In order to be sure that the independent variable is causing an influence on the dependent variable certain things have to be controlled. Only the specific independent variable is changed and rest all the other factors that might influence the response or the dependent variable are controlled. There are extraneous factors that could influence the performance or the dependent variable and hence they need to be controlled. Thus, there are some conditions which might influence the results and they must be controlled. Experimental design is used to control these extraneous sources of variation. One way is to have a *control-group design*. In this, the control group is not given the independent variable while the experimental group is subjected to the independent variable. Both the control group and the experimental groups are matched as far as possible so that if there is any difference in the responses of both the groups, it would be attributable to the independent variable that was introduced. The control group works as the baseline against which the experimental group is checked. In the *within-group design*, a baseline behavior is recorded before introducing the independent variable, then a recording is done after introducing the independent variable. A pre and post comparison is done to see if there is any difference in the responses. This design has an advantage as each subject serves as his or her own control, so the baseline behavior that is established before giving the independent variable is compared with the behavior that results after the independent variable is given. Independent variable does not have a long-lasting effect, it dissipates after some time. Sometimes the researcher may be interested in doing A-B-A design, where A is a condition without an independent variable and B is a condition with the independent variable. This is done just to make sure that the observed effect was indeed due to the independent variable that was introduced.

An important quality of a good experiment is that it must be replicable. That is to say that keeping the conditions same, variables same another experimenter should be able to replicate it or repeat it a number of times to confirm or reconfirm the obtained findings. There are some limitations too. Sometimes the experiments may be dangerous for the participants hence certain ethical issues have to be kept in mind even for the animals who are used in experiments (see box 1.4). We must be careful to generalize the findings from an experiment as an experiment is an artificial situation created to conduct an experiment and hence, these findings may not apply to real life or natural situations. Sometimes the experiment may interfere with the very event they are trying to measure hence, the experimenter has to be very careful while designing an experiment.

### 1.7.3 Correlational Method

When information is collected from two variables on one sample or from two samples on one variable of interest, then correlation method is used. This method tries to understand the correlation or the relationship that exists between two sets of scores. For example, if we want to study if tall people are more intelligent than short people? Or if we want to study are intelligent people also happier? If we are interested in finding out how an increase in one score would lead to a corresponding increase or decrease in another score. Or if there is no correlation between the two set of scores. The statistical procedure used helps us to compare how a particular score relates to its corresponding score in the given set of scores. The correlation value is measured by the correlation coefficient,  $r$ . The value of the correlation coefficient can vary from  $+1$  to  $-1$ . The value of  $+1$  indicates a perfect correlation. This means that the standing of one score is exactly the same as the standing of its corresponding pair score in the given set of scores. This is a perfect correlation or the highest correlation that can happen. However, the correlation of  $-1$  is also a negative correlation but a perfect one again, but it reveals that an increase in the value of one score will have a corresponding decrease in the value of another corresponding score. That is high scores in one set of scores is related to low scores in the other set of scores.

When there is no correlation between the set of scores, it is known as zero correlation,  $r = 0.00$ . This means that the value of one score in a set of scores is not related to the value of another score in the other set of scores. Thus, one cannot make any predictions here. For example, if the correlation between two sets of scores is zero, then we cannot predict the occurrence of the behavior on the basis the scores of the second set. If the correlation between intelligence and happiness is zero, it implies that intelligent people may or may not be happy. If the correlation between them is  $+1$ , it means that with an increase in intelligence scores there will be a corresponding increase in happiness scores too. If the correlation between them is  $-1$ , it indicates that with an increase in intelligence there is a corresponding decrease in happiness.

Correlations can be presented on a *scattergram*. The values of one set of scores are on the X-axis and the other set of scores is presented on the Y-axis. There are different scores spread in the scattergram as points referring to the position or value of the score on both measures. Hence, with the scattergram, it is easy to know the direction or the degree of correlation between two variables. Figure 1.11 illustrates the degree and direction of the relation between two variables.

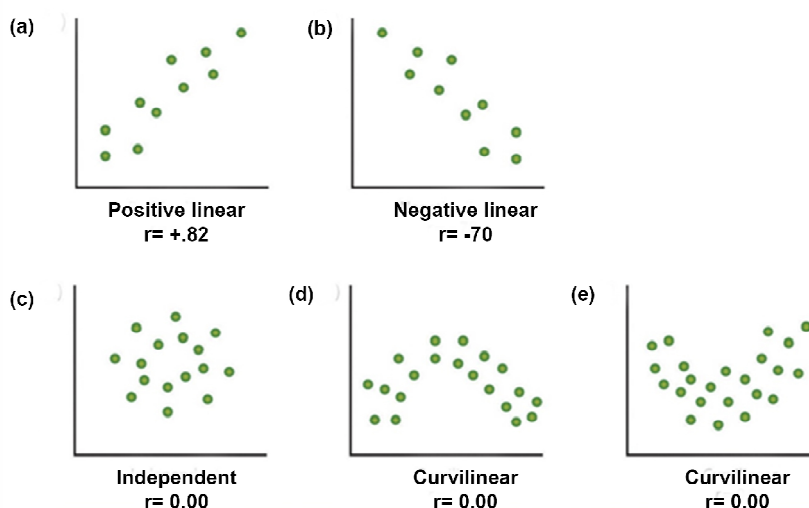


Figure 1.11: Degree and direction of the relation between two variables  
(Pearson Correlation Coefficient)

**Box 1.5 : Research ethics in psychology with human participants**

Research is an integral part of Psychology. Research is conducted by trained psychologists who have to follow strict guidelines as laid down by the government agencies or follow guidelines proposed by American Psychological Association (APA). Researcher has to strictly adhere to the norms as the research is being conducted on human participants or animals. Few of the concerns while conducting research on human participants are:

*No harm to the participants*

*Free choice to leave the experiment anytime*

*Protecting the privacy of participants*

*Use of deception* (participant should be fully aware of the nature of the research)

*Informed consent* (participant should know her/his rights during research phase)

*Debriefing* (the participant is debriefed after the research and explained the purpose and procedures involved in the research)

Every research proposal has to be placed before *Institutional Review Board* (a committee that is formed in every Institute/ University where the research is undertaken) which reviews the cost-benefit analysis of the research proposal.

**Check Your Progress 3**

- 1) List the key assumptions in a scientific research?

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- 2) Define 'systematic observation' as a method of research in psychology.

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- 3) What is the range of correlation?

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## 1.8 PSYCHOLOGY IN INDIA

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Psychology in India was greatly influenced by the western theories and concepts. According to Dalal (2010), the discipline did not connect to the inherent knowledge present in Indian scriptures and texts which have a potential to develop psychological theories of self and human development. The study of Psychology in India was first initiated in the University of Calcutta, in 1916, though the syllabus was prepared by Sir Brojendra Nath Seal (Vice Chancellor of Calcutta University), way back in 1905. Dr. N. N. Sengupta was the first faculty who was also a Harvard-trained scholar. Western model was adopted in research and teaching. The first generation of psychologists after independence were people from the background of Philosophy. In the early 20<sup>th</sup> century, Girindra Shekhar Bose, a psychoanalyst became the first president of the Indian Psychoanalytic Society (1922). He was the first person to blend in Hindu thought with Freudian concepts, and this was evident in his doctoral thesis in 1921 on “Concept of Repression”. In 1924, Psychology courses started in Mysore University. The Indian Psychological Association was established the same year. And after two years the first psychology journal “Indian Journal of Psychology” was founded which was much more advanced than its contemporaries at that time. In 1932, Psychology courses started in Aligarh Muslim University. Psychology courses started in Madras University in 1943. In 1957, psychology was introduced at the Masters level in University of Delhi with philosophy and psychology. However, in 1964, the psychology department established itself as an independent department under the guidance of Late Prof. Ganguli. In 1924, Mr. M.V.Gopalswamy was heading the department in Mysore and he was trained in psychological assessments. The National Institute of Mental Health and Neurosciences (NIMHANS) was started in Bangalore in 1974. In 1961, Prof. Durganand Sinha started psychology department in Allahabad University. At present, Psychology in India focuses on the study of human behavior using indigenous techniques and methods along with the western models. There are various Indian journals of significance such as *Psychology and Developing Societies*, *Journal of the Indian Academy of Applied Psychology*, *Psychological Studies*, *Indian Journal of Clinical Psychology*, and many others. There are many associations which have emerged to strengthen the bond of communication and learning with psychologists not only from India but also all over the world as the Indian Psychologist’s Group on the web. Indian Association of Psychology, Indian Association of Clinical Psychology, National Academy of Psychology, Indian Academy of Applied Psychology are some of the prominent groups of Indian Psychologists. Researches and writings of some of the Indian psychologists such as H.S.Asthana, Anand Paranjpe, J.B.P.Sinha, D.Sinha, Amit Ranjan Basu, Ashis Nandy, Sudhir Kakar, Mansi Kumar, Ajit Dalal, K. Ramakrishna Rao, Girishwar Misra, Uday Pareek, Janak Pandey, T.S.Saraswati, are some of the most influential in the field.

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## 1.9 SUMMARY

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Now that we have come to the end of this unit, let us recapitulate all the major points that we have covered.

- Psychology is the scientific study of human and animal behavior and it includes the application of this science to different problems of the human beings.
- The earlier psychologists were philosophers but later on, the discipline adopted more empirical, objective and scientific approach in its study.

**Psychology :  
What It Is?**

- Psychology is a science because it systematically tries to gather data by carefully observing and recording events or behaviors of humans and animals under controlled experimental conditions.
- Psychology views human behavior from various perspectives (traditional to modern) like nature of consciousness (structuralists), functions of mind (functionalists), importance of organization in mental experience (gestalt), observable or potentially observable behavior (behaviourism), unconscious motivation (psychoanalysis), behavior as a result of nervous and glandular changes (biological), learning, memory and comprehension of social environment (cognitive), personal competence, self-esteem and achievement (humanistic), evolutionary origin of behavior (evolutionary) and behavior influenced by cultural and social norms (sociocultural).
- The first lab was established in 1879 in Leipzig, Germany by Wilhelm Wundt (1832-1920). In 1883 in the USA, the first psychology lab was set up in John Hopkins University by G. Stanley Hall.
- Psychology is applied in various fields such as counseling, clinical, organization, forensic, sports, health, school, etc.
- To study psychology scientifically, three main methods are used. They are experimental method, systematic observation and correlation method.
- Experimental method involves a research problem that needs to be investigated. Based on the review of the literature and theoretical background, certain assumptions are made about the observable events. This assumption is known as hypothesis which is a statement about the expected outcome of events.
- In systematic observation method the researcher does not manipulate an independent variable. He or she simply makes systematic observations of the events/behaviors that are occurring naturally in the environment. After making a number of observations, the researcher tries to understand the plausible reasons for the observed behaviors.
- When information is collected from two variables on one sample or from two samples on one variable of interest, then correlation method is used. This method tries to understand the correlation or the relationship that exists between two sets of scores.
- Development of psychology in the west greatly influenced the emergence of psychology as a discipline in India. The study of Psychology in India was first initiated in the University of Calcutta, in 1916. The first generation of psychologists in India after independence were people from the background of Philosophy. Many Indian psychologists with their rigorous research and influential writings have immensely contributed to the development of psychology.

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## **1.10 REVIEW QUESTIONS**

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- 1) A scientific explanation that remains tentative until it has been adequately tested is called a/an
  - a) theory
  - b) law

- c) hypothesis
  - d) experiment
- 2) To estimate the degree of the relationship between birth order and achievement motivation, a researcher would do a/an \_\_\_\_\_ study
- a) naturalistic
  - b) inventory
  - c) correlational
  - d) experimental
- 3) One of the reasons to study psychology is
- a) to understand the human mind and how it works
  - b) to learn how to manipulate others
  - c) to completely understand and predict human behaviour
  - d) to have the answers to all of life's questions
- 4) The first textbook on psychology was
- a) The Principles of Psychology
  - b) The Laws of Psychology
  - c) The Theories of Psychology
  - d) The Nature of Psychology
- 5) The study of Psychology in India was first started in
- a) University of Allahabad
  - b) University of Calcutta
  - c) University of Delhi
  - d) University of Mysore
- 6) Define psychology and discuss its major fields.
- 7) What makes psychology scientific? Explain.
- 8) Who were the major figures in the historical development of psychology?
- 9) Describe the experimental method of study.
- 10) Trace the development of psychology as a discipline in India.

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## 1.11 KEY WORDS

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<b>Psychology</b>	: It is the science of human and animal behavior and it includes the application of this science to different problems of the human beings.
<b>Empirical observation</b>	: Observation based on experiment, rather than on argument, opinion, or belief.

**Psychology :  
What It Is?**

- Science** : It is a systematized body of knowledge gathered through carefully observing and measuring events.
- Clinical Psychology** : It is that branch of psychology which deals with the assessment and treatment of mental illness and abnormal behaviour.
- Counselling Psychology** : It deals with people having problems of milder emotional or personal intent. People who need help in making a career choice or deciding which educational program to opt for seek help from a counseling psychologist.
- Experimental method** : It involves manipulating one variable to determine if changes in one variable cause changes in another variable.
- Observation method** : Observation method involves watching a participant in his or her natural setting and recording relevant behavior for later analysis.
- Correlation method** : This method tries to understand the association or the relationship that exists between two variables.

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## 1.14 ONLINE RESOURCES

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- For more on Psychology as a Science, visit
  - <https://cpa.ca/cpasite/UserFiles/Documents/publications/Short.pdf>
  - <https://www.simplypsychology.org/science-psychology.html>
  - <https://pdfs.semanticscholar.org/6ace/76be6864ce2024c154d5db2dfe190215bbaf.pdf>
  - <https://cfl.in/wp-content/uploads/2015/02/Is-Psychology-a-Science.pdf>
- For more information on Subfields of Psychology, visit
  - <https://www.apa.org/careers/resources/guides/careers.pdf>
  - <https://rabbiablog.com/fields-branches-psychology-definition.pdf>
  - <http://www.eolss.net/sample-chapters/c04/e6-27-01-00.pdf>
  - <https://bsosundergrad.umd.edu/sites/bsosundergrad.umd.edu/files/psychology%20career%20subfields%20chart.pdf>
- For an overview of Research Methods of Psychology, visit

**Psychology :  
What It Is?**

- <http://lib.oup.com.au/secondary/science/Psychology/3and4/Oxford-Psychology-3-and-4-2e-Ch1-Research-methods-in-psychology.pdf>
- [http://psycho.unideb.hu/munkatarsak/balazs\\_katalin/modszertan1/Modszertan\\_Goodwin\\_kivonat.pdf](http://psycho.unideb.hu/munkatarsak/balazs_katalin/modszertan1/Modszertan_Goodwin_kivonat.pdf)
- <http://cogprints.org/2643/1/EOLSSrm.pdf>
- For more on Evolutionary perspective, visit
  - <https://plato.stanford.edu/entries/evolutionary-psychology>
- For an interesting article on Development of Psychology in India, refer to
  - Origins and Development of Psychology in India: Outgrowing the Alien Framework Durganand Sinha. *International Journal of Psychology*. First published: December 1994. <https://doi.org/10.1080/00207599408246559>
  - A journey back to the roots: Psychology in India. <https://www.ipi.org.in/homepages/homepage-ajit.php>

***Answers of Multiple Choice Questions***

1) (c), 2) (c), 3) (a), 4) (a), 5) (b)

