



# INTRODUCTION TO PSYCHOLOGY

## ICLM

This module gives discussion topics on basic Loss Management Psychology. The loss management program covers Loss Management Psychology as an integral component of the loss management programme. This module is not meant to be a text book or a publication. The material content is an extraction of information from various reference books and published works put together to serve as a foundation of the institute's Advanced Diploma in Loss Management programme reference and lecture material. The module remains the property of the Institute of Certified Loss Management.

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## UNIT 1

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### 1.1 THE NATURE OF PSYCHOLOGY AND ITS SCIENTIFIC METHODS

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Psychology is the science human and animal behavior, it includes the application of this science to human problems.

A science is a body of systematized knowledge that is gathered by carefully observing and measuring events sometimes, but not necessarily, in experiments set up by the scientist to produce the events being studied. The observations of events are systematized by various ways, but mainly by classifying them into categories and establishing general laws and principles to describe and produce new events as accurately as possible. Since psychology has these characteristics, it clearly belongs within the province of science.

The psychotherapist talking to a worried client, the educational psychologist advising a school board on a new curriculum, the clinical psychologist trying to lessen tension between management and workers in a large industry are all practitioners of the art of psychology.

Behavior can include feelings, attitudes, thoughts and other mental processes, all internal events which cannot be observed directly, if they can be measured indirectly through what people say and how they react to different problems and situations.

What a person says or does can be studied as objectively as a chemical reaction in a test tube. Perhaps the psychologist's measurements are less precise than the chemists' but the in principle; the psychological and chemical observations are the same in that rules of science can be applied to both. Just as the chemist uses scientist principles to understand and predict physical events, so the psychologist uses those principles to understand and predict behavior.

The psychology can also be defined as the science which seeks to understand and predict human and animal behavior. Although the emphasis in psychology is on the behavior of the human / animal, many psychologists study the behavior of other creatures because it is intrinsically interesting and because of what it can tell us about ourselves. For instance, studying and comparing the aggressive behaviors of various species of animals may shed some light on similar human activities. In addition, experimental conditions can be more vigorously controlled in animal experiments than in human ones and the general behavioral principles discovered in tightly controlled animal experiments can often be generalized to human beings. Suppose for instance, that a scientist wishes to see whether a new drug may help in the treatment of behavioral problem such as alcoholism. The drug must be tried out on alcoholic animals before clinical research is done with human beings because the drug may have dangerous side effects.

Psychiatry, anthropology, sociology, economic political science, geography and history also study various aspects of behavior. Together with psychology, these areas make up the discipline known as behavioral sciences. What sets psychology apart from other sciences is partly its exclusive interest in behavior and partly the wide range of behavior it studies. Psychiatry, for example, focuses on behavior

disorders; anthropology compares the behaviors of various cultural groups, sociology studies the behavior of groups, and economics is involved with the behaviors that go into the exchange of goods and services. Many sciences also have subfields which are not directly concerned with the study of behavior. For instances, physical anthropology studies among other things, the evolution of the physical structure of the human body; while it is related to behavior, this is strictly speaking on behavioural study. The study of behavior is also part of biological sciences, especially zoology but also to some extent pharmacology and psychology.

In the areas where the many disciplines which study certain aspects of the behavior overlap with psychology, the boundaries become blurred. For instance, psychologists might study mob behavior but so might a sociologist or anthropologist. Another psychologist might study the personality patterns of political leaders so might a political scientist or a historian. The person who studies the effects of marijuana or any drug on behavior might be a psychologist, a psychiatrist or a pharmacologist.

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## 1.2 THE WORK OF PSYCHOLOGISTS

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One psychologist might be interested in the use of high sensitivity training groups to enhance human effectiveness; another might study effects of drugs on behavior; another might be interested in the development of behavior during childhood; another might be a psychotherapist who attempts to help people with behavioral problems; still another might study the sensory process involved in our perception of the world.

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### 1.2.1 CLINICAL PSYCHOLOGY

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Clinical psychologists are ‘doctors’ who diagnose behavior disorders and treat them by means of psychotherapy. A clinical psychologist normally holds a PhD or M.A degree while a psychiatrist is an M.D. the PhD clinical psychologist has taken 4-5 years of post-graduate work in a psychology department. The

M.A. clinical psychologist has about 2 years postgraduate work under the supervision of PhD psychologist. The psychiatrist on the other hand has gone to medical school and has then completed 3 to 4 years of residency training in psychiatry. Thus the clinical psychologist who does not have medical training cannot prescribe drugs to treat behavioral disorders. It also seems that whenever there is a possibility of a medical disorder, a patient should be examined by a psychiatrist or other physician. Further, only a psychiatrist can refer a patient to a hospital for care and treatment. Psychologists are usually better trained in doing research, therefore, clinical psychologists are somewhat more likely than psychiatrists to involve in studying better ways of diagnosing, treating and preventing behavior disorders. Clinical psychologists also tend to rely more heavily than psychiatrist on standardized tests as an aid to diagnosing disorders.

Both clinical psychologists use various techniques to relieve the symptoms of behavior disorders and to help people understand the reasons for their problems. Such psychotherapeutic techniques range from giving support and assurance to someone in a temporary crisis to extensive probing to find the motives behind behavior. Most clinical psychologists practice in state mental hospitals, veteran’s hospitals, community mental health centres and similar agencies.

A psychoanalyst is a person who uses the particular psychotherapeutic techniques which originated with Sigmund Freud and his followers. Since psychoanalysis originated in Freud's medical and psychiatric practice, it was adopted by psychiatrists and thus today many psychiatrists are also psychoanalysts. But clinical psychologists who have had psychoanalytic training can also be psychoanalysts as can people who are neither psychoanalysts nor clinical psychologists. Psychoanalysts without M.D. degree are known as lay analysts.

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### 1.2.2 COUNSELLING PSYCHOLOGY

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The work of the counseling psychologists is quite similar to that of the clinical psychologist. The difference between them is that counseling psychologists generally work with people who have milder emotional and personal problems. Counseling psychologists are often consulted by people with specific question such as a choice of career or educational program. In their practice, counseling psychologists may make extensive use of tests to measure aptitudes, interest and personality characteristics. A number of counseling psychologists try to help people who are having problems with family living; these are marriage and family counselors.

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### 1.2.3 SCHOOL AND EDUCATIONAL PSYCHOLOGY

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The psychologists who provide counseling services in schools are called school psychologists. The problems they face and the techniques they use are somewhat specialized and for this reason they are considered to be in a distinct subfield of psychology. School psychologists are involved in the testing and counseling of students who need special attention. Testing provides information which can be useful in the diagnosis and disposition of behavior difficulties. For example, on the basis of tests and other information, the school psychologist may recommend that a poor reader be assigned to a remedial reading class. A student with mild adjustment problems may be counseled in a manner that amounts to psychotherapy. In some colleges and universities, school psychologists evaluate and administer admissions examinations. Some school psychologists may do vocational counseling but most of that is done by school counselors who have studied testing and counseling in a university department of education. In practice, the difference between school psychologists and school counselors is often not clear.

Educational psychology may include school psychology, but educational psychologists as such are usually involved with more general, less immediate problems than are most school psychologists or school counselors.

Educational psychologists are especially concerned with increasing the efficiency of learning in school through the application of psychological knowledge about learning and motivation to the curriculum.

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#### 1.2.4 EXPERIMENTAL AND PSYCHOLOGICAL PSYCHOLOGY

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Many psychologists are not primarily engaged in work that applies directly to practical problems. Instead, these psychologists attempt to understand the fundamental causes of behavior. They do what is sometimes called ‘basic research’, studying such fundamental processes as learning and memory, sensation and perception and motivation. In other words, the experimental psychologist studies how behavior is modified and how people retain these modifications, how human sensory systems work to allow people to experience what is going around them and the factors that urge them on and give direction to behavior. A number of experimental psychologists are concerned with the relationship of the brain and other biological activity to behavior; these are physiological psychologists.

Controlled experiments are the major research method used by experimental psychologists, but experimental methods are also used by psychologists other than experimental psychologists. For instance, social psychologists may do experiments to determine the effects of various group pressures and influences on a person’s behavior. Experimental psychology is distinguished by what it studies; the ‘fundamental’ processes of learning and memory, sensation and perception, motivation and the physiological or biological bases of behavior.

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#### 1.2.5 INDUSTRIAL AND ORGANISATIONAL PSYCHOLOGY

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The first application of psychology to problems of industries and organizations was the use of intelligence and aptitude test in selecting employees. Today many companies use modern versions of such tests in their hiring and placement programs. Private and public organizations also apply psychology to problems of management and employee training, to supervision of employees, improving communication within the organisation, to counseling employees and alleviating industrial life. The applied psychologists who do this work are sometimes called personnel psychologists. Many industrial and organizational psychologists work as member of consulting firms which sell their services to companies. For one business they may set up an employee selection program; for another they may recommend changes in the training program; for another they may analyze problems of interpersonal relationships and run programmes to train company management and employees in human relations skill; and for another they may do research on consumer attitudes concerning the company’s products.

Therefore, industrial and organizational psychology has a subfield called personnel psychology in which principals are applied to practical problems of work and commerce.

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#### 1.2.6 SOCIAL PSYCHOLOGY

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We all belong to many different kinds of groups, our family, and informal and our social class, to mention only a few.

The groups to which we belong influence our behaviour and shape our attitude about many things. Social psychologists are primarily engaged in studying the effects of group membership and individual behaviour. For instance, a social psychologists might study how the decisions of a committee member are influenced by what others on the committee to and say. Sometimes however, the emphasis on the way in which an individual affects the group, as in studies of leadership. Another focus of social psychology is on the way we perceive other people and how these perceptions affect our behavior towards them. Social psychology merges with sociology. In contrast with the social psychologist whose interest is in small groups and their affect on the individual, the sociologist is more concerned with the formal characteristics and structures for groups and what large masses of people do, so the boundary between social psychology and sociology is often not clear at all. Social psychologists sometimes study group characteristics and behavior.

Social psychologists have developed and perfected techniques for measuring attitudes and opinions; surveys of political opinions consumer attitudes and concerning controversial social questions give need information to politicians, business people and community leaders when they must make important decisions.

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### 1.2.7 DEVELOPMENTAL PSYCHOLOGY

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Developmental psychologists attempt to understand complex behaviours by studying their behaviour and the orderly ways in which they change with time. If we can trace the origin and developmental sequence of certain behaviour occur rapidly in the early years of life, child psychology, the study of children's behaviour comprises a large part of developmental psychology

Developmental psychology has both research and applied aspect. For instance a great deal of research has been done on the development of thinking in children. Do progressive and systematic changes take place in children's thinking during the first few years of life? They do. On the applied side, developmental psychologists are often concerned with children who have behaviour disorders. The kinds of behaviour found in disturbed children are frequently quite different from behaviours found in disturbed adults and different methods are used to treat them.

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### 1.2.8 COMMUNITY PSYCHOLOGY

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Community psychology apply psychology principles, ideas and points of view to help solve social problems and to help individuals adapt to their work and living groups. Some community psychologists are essentially clinical psychologists. They set up programs to reach people in communities who have behaviour problems or who are likely to have such problems in the future and who are not served by the traditional methods of psychotherapy. These psychologists are a part of the

community mental health program.

Other community psychologists are less directly concerned with mental health of individual and more concerned with bringing ideas from the behavioural sciences to bear on community problems. We might call these the 'social problem community psychologists'. hostility among groups in the community, bad relations between the police and community members or stress due to lack of employments opportunities, for example, might be problems on which a social problem community psychologist would work. On the positive side, such psychologists often work to encourage certain groups to participate in community decisions to provide psychological information about how to make their curricula meet the needs of community members to accomplish their needs. Social problem community psychologists sometimes focus on changing community organizations and institutions to help remove the sources of community problems.

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### **1.3 PSYCHOLOGY AS A SCIENCE**

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Psychology studies behaviour in the same way that the other sciences study their subject matters and therefore shares a number of features with them. In common with other sciences, psychology as a science has the following characteristics

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#### **1.3.1 EMPIRICAL OBSERVATION**

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Psychology as a science is first of all and above all empirical. That is to say it rests on experiment and observation rather than on argument, opinion or belief. Psychologists perform experiments and make observations which other psychologists can repeat; they obtain data, often in the form of quantitative measurements which others can verify.

#### **1.3.2 SYSTEMATIC APPROACH AND THEORY**

Psychology as a science is also systematic. Data from observations and experiments are essential to science, but for them 'to make some sense' in helping us to understand events, they must be ordered in some way. The scientist tries to find a limited number of principles which will summaries that data economically. The principles may be merely a system of classification such as we find in the arrangement of the various plant and animal species or they may be precise laws stating the orders of relationships among the vents observed, such as we meet in physics.

Scientific theories are general principles which summaries many observations and predict what can be expected to happen in new situations. Because theory in a predictor it is also a guide for making observations or doing experiments. Theories are subject to modification and they grow and change as more and more of their predictions are tasted.

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#### **1.3.3 MEASUREMENTS**

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Another distinguishing feature of many sciences is measurement defined as the assignment of numbers to objects or events according to certain rules. We rank highest among the sciences, the one which had developed the most ‘scientist’ of the sciences. But measurement is not always essential to science. In a field such as zoology for instance, the important principles may problems are questions of ‘more than’ or ‘less than’. That is, they are questions of measurements.

Measurement in psychology is often more difficult than in physics and chemistry because many of the things studied cannot be measured directly by physical scales. Even though many psychological qualities are difficult to measure, psychologists have designed a number of ingenious tests to assign numbers to them.

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### 1.3.4 DEFINITION OF TERMS

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Careful definition of terms is essential to clear thinking in science. This is especially true of psychology; we want to give precise definitions to terms which are used imprecisely in everyday language. The procedure in psychology is to define concepts by relating to them to observable behavior. One way of making sure that concepts are defined in terms of observables is to use what are called operational definitions. When we define a concept operationally we define it in terms of measurable observable operations; how many times was a ruler put down when measuring a table? In psychology such concepts as intelligence, forgetting or hunger can be defined in terms of the observable operations performed to measure them. Intelligence, for example, might be defined as a score on a certain test, forgetting might be defined by measuring how much information is retained after a certain time period; hunger might be defined in terms of the amount of food consumed after a period of starvation.

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### 1.3.5 SCIENTIFIC METHODS IN PSYCHOLOGY

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Having formulated a testable hypothesis in terms of observable events, the experiments;

- i. Changes or varies the events which are hypothesized to have an effect
- ii. Keeps other conditions constant and
- iii. Looks for effect of the change or variation on the system under observation.

Since psychology is the science of behaviour the psychologist looks for an effect or the experimental changes on the behaviour.

**VARIABLE** is an event or condition which can be measured and which varies quantitatively. Variable may be either independent of dependant. An independent variable is a condition set or selected by an experimenter to see whether it will have an effect on behaviour. It might be a stimulus presented, a drug administered, and a new method of training business managers and so on. The dependant variable

is the behaviour of a person or an animal in an experiment. A dependent variable in an experiment might be the response of a person to a stimulus, a change in behaviour after the administration of a drug, changes in managerial behaviour after a new training program has been instituted, a score on a test, and a verbal report on an event in the environment and so on. The dependant variable is so called because its value depends or may depend on the value of the independent variable, the one independent variable; the one independently chosen and directly manipulated by the experimenter. The independent variable is the one to produce changes in the dependant variable.

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### **1.3.6 CONTROLS**

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In an experiment, it is important that only the specified independent variables are allowed to change. Factors other than the independent variable which might affect the dependant variable must be held constant. Two main strategies or experimental designs are used to control extraneous factors. One strategy includes control groups. If the other measures of behavior are made before the independent variable is introduced to establish a behavioral baseline against which to compare behavior after the independent variable has been presented; the subject of the experiment the animals or the people in it are said to serve their own controls in this before-and-after, or within subject's type of experiment. In order to match subjects in an experimental group, they are randomly selected.

It is literally true that an experiment is no better than its controls. It is a mark of scientific sophistication to be able to spot defects in experimental controls. Being sensitive to controls may also help one to evaluate claims made in 'scientific' TV commercials.

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### **1.3.7 REPLICATION**

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Experiments should be replicated e.g. water is made up of hydrogen and oxygen, simply by burning hydrogen, (i.e. combining it with oxygen) in psychology we can experiment on recitation – one group reciting and the other not reciting.

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### **1.3.8 LIMITATIONS OF THE EXPERIMENTAL METHOD**

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Although the experimental method is the best, it has limitations e.g. some experiments might be dangerous for the subjects; they may be restricted in application. The conclusions may be limited to the artificial experimental situation; they may not apply to natural situations or even to other experimental situations. Sometimes experiments interfere with the very thing they are trying to measure the effects to fatigue after 24 hours of sleeplessness might be interfered by motivation.

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### **1.3.9 SYSTEMATIC OBSERVATION**

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This approach is similar to the experimental method in that variables are measured but is different in that researchers do not willfully manipulate the independent variable. Instead they capitalize on variations that occur naturally. Researchers make the most exacting and systematic study they can of naturally occurring behaviour. After making a number of observations, the psychologist can use certain rules of logic and try to infer the causes of the behaviour studied e.g. finding the cause (source) of pollution, using questionnaires, survey and interviews. Psychologists might study the personality and motivational patterns of political leaders, the attitudes of successful executives, or the ideas that liberal and conservative parents have about the best ways to rear children. Psychologists might make systematic observations of the differences in the brain activity of creative and non-creative people in school performance of children who are bussed to school and those who are not, or behavioural differences between men and women  
e.g. the way female students carry their books.

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### **1.3.10 FROM THE OBSERVATIONS**

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Having found out what happens, psychologists may want to know why things happen, but this is much more difficult. The symptoms of schizophrenia include bizarre or strange patterns of thought and behaviour, inappropriate emotional responses and perhaps hallucinations and delusions. Using the method of systematic observation the researchers may attempt to test this hypothesis by comparing the ways in which schizophrenic groups on as many factors such as age, sex, socio-economic status, years of schooling, intelligence and so on, as possible. They will look for differences in the rearing practices used by the parents of schizophrenic and the normal. A great many more observations must be made before the likely cause or causes of schizophrenia can be established. Finding the cause of behaviour from a number of observations is a problem in the logic of inductive reasoning or the establishment of general principles from particular instances. Try to find the cause of a particular behaviour we must look carefully at the results of many observations and experiments, noting the effects of a particular factor. For example it has been observed that in almost all right handed people, damage from a stroke to an area of the left cerebral hemisphere impairs speech in certain ways.

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## **1.4 NUMBERS AND STATISTICS**

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To help summarize and interpret meaning of numbers, we use various statistics.

### **1.4.1 Descriptive Statistics: Measures of Central Tendency and Variability**

Many behavioural measures or scores are usually obtained in experiments or observational studies. It is very useful to have a single number that gives us the 'average' of the score. Such number is called a measure of central tendency. Median is the point in the group of scores above and below which half the scores fall. It is sometimes called the 50<sup>th</sup> percentile because 50 percent of the scores are above it and 50 percent below it. Because extremely high or low scores will bias the mean more than the median, the median is the preferred measure of central

tendency when a group of scores or measures contains some extreme values. The mode is the score that occurs most often. Variability is the range or the interval between the highest and lowest scores which gives a rough idea of the spread of measure. However, the most commonly used measure of variability is the standard deviation (SD). The SD is a measure of the spread of measurements around the mean value. If the measurements are grouped closely around the mean value, the SD is small, perhaps one-tenth of the mean. If the measurements are widely spread out the mean, the SD is large.

#### 1.4.2 Descriptive Statistics

Correlation refers to a co-relationship between two sets of scores. Thus to obtain a correlation we must have sets of scores on the same individuals or on individuals paired in some way. Correlation gives us an answer to the following type of question; do high scores on an intelligence test go along with the high scores on a reading ability test or vice versa? If the correlation is perfect, that is if the standing of one score is exactly the same as its male and if this is true of all pairs of scores in the two sets the number of correlation coefficient expressing this perfect relationship is 1:00. This is the highest possible correlation. Note that a correlation of  $-1:00$  is also perfect.

The negative sign indicates the type of relationship, not the degree of relationship. With a correlation of  $-1:00$  high scores in one set are related to low scores in the other set and vice versa.

If, on the other hand no correlation exists, the correlation coefficient is 00. In this case the standing of a score in one set of scores tells nothing about the standing of its paired score in the other set of scores. Various degrees of correlation are expressed by numbers between .00 and 1.00 or if negative between .00 and -1.00. A correlation of .80 (-80) or .90 (-90) might be considered high, one of .40 (-40) .60 (-60) moderate and one of .20 (-20) or

#### 1.4.3 Inferential Statistics

Observations may be made from small samples e.g. from an enriched environment having a 10 of 120 while from an impoverished environment has a 12 of 90. Note that these observations are made from relatively small samples drawn from the larger pools in terms of the populations of potential subjects. If we assume that the difference is not due to sampling bias or the 'luck of the draw' we can infer that the samples really represent the populations from which they are drawn.

For a particular experiment or set of observations, researchers compute the odds that the obtained difference is due to chance sampling factors. The result is stated as a probability (P) that the difference obtained is a chance one arising from sampling bias. For instance, in the 12 examples the probability that the differences obtained between the groups was due to sampling bias might turn out to be less than 1 in 100 (PC .01). In other words, there is less than 1 chance out of 100 that the difference obtained was due to chance sampling factors. This would be described as statistically significant. Differences with higher odds ( $P=.10$ ) are said to mean significant meaning that the chance sampling factors cannot be ruled out with confidence.

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## ASSIGNMENT

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As a branch of knowledge, what does psychology study and how is it related to other sciences?

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## **2.1 EVOLUTION, GENETICS AND BEHAVIOUR**

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Innate or inborn actors are referred to as nature, the interaction of nature and environmental factors affect behavior. The human species is a product of a long history of evolution. Our physical structures and physiological processes are the outcome of evolutionary pressures that acted on our forerunners over the millennia. The different experiences individuals have, especially while growing up are very important in shaping and moulding behavior. In other words, environmental factors collectively referred to as nature have much to do with the ways in which people behave.

Within the limits set by or species heritage each of us (unless we have an identical twin) inherits from his or her parents a different set of genetic constitution. People vary in their behavior partly because of their differences in generic constitutions. So this aspect of our animal natures, genetics and behavior must also be explored. In studying of nature and nurture is crucial; what we do depends partly on the complex interaction of our genetic constitutions with our natures.

### **2.1.1 THE NATURE OF EVOLUTION**

Using the few facts that were available in the middle of the nineteenth century, the English naturalist Charles Darwin was able to make a convincing case for evolution in his book, 'The origin of Species' which was published in 1859. Darwin knew about the fossil record for many species of animals and he knew that this record showed progressive development from species to related species. He had also observed especially on his trip around the world which he recorded in another book, 'the Voyage of the Beagle' that animals develop structures which help them adapt to their environments. For example, he observed that animals isolated on islands develop structures and behaviors that enable them to get the types of foods available on those islands.

Darwin and his associates made an inspired guess, based by the evidence at their command, that the various species of animals (human beings included) were the result of evolution that is of gradual change from other earlier forms of animal life. Basic to evolutionary process is the tendency of living things to reproduce rapidly, to overproduce. The overproduction creates competition for food favorable environments and other scarce resources. The competition can be among members of a single species or it can involve several species. In the case of some animals, there is also competition between predators and their prey. Predators evolve more efficient means of catching their prey, the prey evolve better ways of protecting themselves, thus living under pressure to evolve in ways that will make successful competition possible.

Genetic variability refers to the fact that individual members of a species differ in their genetic make-up and therefore have slightly different structural or behavioral characteristics. The source of this variability is a matter of debate but is likely that a good deal of it is due to small genetic changes called mutations which occur randomly.

By adaptation we mean that some of the structural or behavioral characteristics stemming from genetic variability help the individuals who possess them to compete more successfully than others and most

important to survive and have more offspring than those individual who do not possess them. The individuals with adaptive structural and behavioral characteristics are selected relative to those without them; they survive and pass on their genetic adaptations to their offspring, and so on and so on. If this process of selection goes on long enough, the receptors only in certain ways. Probably because of the elaboration of certain regions of the brain's cerebral cortex we are species and in visual imagery for the most part. The ability to represent the world symbolically and process information effectively has been of enormous adaptive value to human kind and it is what makes human civilization possible. Recent work has shown that chimpanzees, under very special experimental conditions can learn the rudiments of language. However, human beings have the evolutionary potential to be better at the symbolic processing of information than any other animal species.

Related to our ability to symbolize events is the ability to think about our world and ourselves in it. Each of us is aware that he or she is different from other people, and all of us try to fit our experiences into some meaningful framework. Thus, the memory, learning and so on is given by our evolutionary heritage. These capabilities are only potentials; they are filled and modified by environmental influence.

### **2.1.2 GENETICS AND BEHAVIOUR**

Our species heritage from evolution gives us potentialities behavior and sets broad limits on it. Within the limits and framework established by our species heritage, each person inherits from his / her parents and a special genetic make-up. This individual genetic inheritance, interacting with environmental factors, helps determine the behavioral traits that are unique to a person. The study of the ways in which an individual's genetic constitution contributes to the determination of behavior is called behavior genetics.

### **2.1.3 CHROMOSOMES**

The genetic material consists of chromosomes and genes. Genes are the real genetic units and we may think of them as being carried on the chromosomes, each of which contains many genes. Under a microscope, chromosomes (the term means colored bodies) can be seen within the nuclei of body cells that have been treated with special dyes. The chromosomes in the egg and sperm or the germ cell carry the genes responsible for heredity. Each animal species has a characteristic number of chromosomes per cell. Human beings have 46; since the chromosomes occur in pairs, each of us has 23 pairs of chromosomes. The sex chromosomes also carry the genes necessary for the formation of the pigments in the cone cell of the eye which make color vision possible. Because these other genes are on the sex chromosomes, the characteristics they determine are called sex-linked characteristics. By convention, the sex chromosomes are labeled X and Y. Males have an X and a Y chromosome, females have two X chromosomes. The other 22 pairs of chromosomes, called autosomes carry genes that determine structures and behaviors that are not sex linked.

The sperm cells pass through a stage, meiosis, in which the pairs of chromosomes split apart, leaving only one chromosome of each pair – a set of 23 single chromosomes for each germ cell. The two single sets from the egg and sperm combine to make new pairs, when the egg and sperm unite they form a new individual. Therefore, we find 23 pairs of chromosomes again in the fertilized cell called the zygote which is the new individual. As a result of this process, each person receives half of his / her genes and chromosomes from each parent. The genes themselves are complex chemical packets

which are parts of the deoxyribonucleic acid (DNA) molecules that make up chromosomes. In general, genes control the production of chemicals called enzymes. The genes, as active parts of DNA molecules contain the codes for the production of various substances that cells need if they are to live and grow. By controlling and somehow influencing the interaction cells the genes 'direct' the formation of many kinds of tissues needed to build the different organs and structures of the body. In so far as behavior depends upon certain chemicals or structures, genes are also involved in the determination of behavior.

Genes work in pairs because the chromosomes we inherit from mother and father pair up in such a way that pairs of similar genes determine particular characteristics. If a trait is determined by a single pair of genes and both genes of the pair are identical there is no doubt the characteristic that will result (provided that environmental influences are held constant). Often though the genes determining a characteristic are not identical in such cases, one gene is usually dominant over the other member of the pair which is said to be recessive. Thus although the genetic constitution of an individual known as genotype – contains a dominant and recessive gene, the characteristic actually produced – known as the phenotype is the result of the expression of the dominant gene. Recessive genes are expressed in an observed characteristic or phenotype, only when both members of the gene pair are recessive.

Thus whether the tongue can be curled or not, the phenotype depends on the genotype. A dominant gene controls the expression of the tongue curling. Inability to curl the tongue is a recessive characteristic. If the genotype, both genes of the appropriate pair are dominant, the phenotype will of course be tongue curling; also if one of the genes is dominant while the other is recessive, the same phenotype will be observed. Only when both genes are recessive will the phenotype be an inability to curl the tongue.

## **2.1.4 TWINS**

People's genotypes differ in various degrees. Only in the case of identical twins or identical triplets, identical quadruplets and so on can two or more individuals have absolutely identical heredities. Identical twins develop from the same zygote. Sometimes during the first cell division of a zygote, each cell develops into new individual. Since each cell has the same genes as the zygote, the heredity of the two individuals will be identical. Developing as they do from single zygote, identical twins are sometimes known as **monozygote (MZ)** twins. Since sex is determined genetically, monozygote twins will always be of the same sex, they will also be identical in many other respects.

But not all twins are identical. Most are fraternal twins – twins that develop from two separate zygotes formed by the union of two different sperms with two different eggs. Fraternal twins, often called **dizygotic (DZ)** twins are no more alike genetically than brothers and sisters born at different times. Fraternal twins may or may not be of the same sex. The only unique thing about fraternal twins is that they are born at the same time and thus are more likely to have similar environments, both before and after birth than brothers and sisters born at different times.

Twins, especially identical ones are very useful in studying the relative contribution of heredity and environment to behavior. Because identical twins have identical genetic constitutions any difference

between them must be due to environmental influences. Ordinarily, the environmental differences are minor, but if identical twins are separated in early life and are reared in rather different environments, we can begin to see how much impact the environment can have on the behavior.

### **2.1.5 CHROMOSOMES AND BEHAVIOR**

Most of the behavioral traits are called polygenic. This means that they are determined by many genes and it is not possible to show that certain chromosomes are necessary for the development of a number of complex behaviors in both animals and humans.

Much of what we know about the role of chromosomes in human behavior comes from the study of chromosomal abnormalities. Most of these abnormalities are so disruptive that the developing foetus dies and a miscarriage or spontaneous abortion occurs. A few chromosomal abnormalities however, are not incompatible with life and it's from studying these abnormalities that chromosomes can be related to human behavior. For instance, some forms of mental retardation have been linked to abnormalities of sex and autosomal chromosomes. It is also suspected that certain forms of anti-social behavior may be related to abnormalities of sex chromosomes.

**DOWN'S SYNDROME** is a form of mental retardation resulting from a chromosome abnormality. A person with Down's syndrome tends to be moderately to mildly mentally retarded with an (IQ of 40 to 70 where 100 is the normal) and have obliquely slanted eyelids, a round face, short stature, and the abnormalities of hand and feet. "Down's babies

Are usually quiet and placid, their mortality during infancy is high since many succumb to respiratory infections and heart malformations.

Chromosomal analysis of individuals with Down's syndrome has shown that they have an extra chromosome; instead of a pair of number 21 chromosomes, they have three. (Thus Down's syndrome is also known as trisomy 21). For some unknown reason the twenty first chromosome pair of the egg or sperm cell does not always divide during meiosis. When it does not, one of the parents passes along one chromosome in the normal way. Sometimes the error happens because the number 21 chromosome in one parent is hooked onto another chromosome. In either case, the result is that there are three chromosomes present instead of the normal pair.

Down's syndrome is unfortunately rather common. It occurs in about 4 births per 10 000 among mothers under 30 years of age, and its incidence is greater among older mothers – about 1 per 100 for 40 year old mothers. Examining the cells of the foetus during pregnancy of old mothers and those who have already given birth to a Down's syndrome child make it possible to reduce the number of Down's syndrome children born.

## **2.2 THE GENETIC OF HUMAN INTELLIGENCE**

Human intelligence is not easy to define. However, we can define it as being made up of:

- Verbal comprehension (the ability to define and understand words)
- Word fluency (the ability to think of words rapidly)
- Number (the ability to think about mathematical relationships)
- Space (the ability to visualize relationships)

- Memory (the ability to memorize and recall)
- Perception (the ability to see differences and recall)
- Reasoning (the ability to find rules, principle or concepts for understanding or solving problems)

Psychologists have devised tests – intelligence tests that employ a single number (the intelligent quotient or IQ) to describe such abilities in individuals. It is probably determined by the genes. Comparisons of IQ score of people relied upon. IQ scores from people of different degrees of genetic relationships are compared by means of correlation coefficients. The decrease in average correlation from identical twins to fraternal twins points to heredity as a factor in intelligence. The average correlation between pairs of identical twins reared apart is quite high although it is lower than that for one-egg twins reared together. The average correlation between pairs of foster parents and their foster children is lower than the correlation for parents and their ‘true’ biological children. In cases where children are reared apart, i.e. in different environments, correlations are smaller than in cases where children are reared together. A study of identical reared apart under different conditions of educational advantage shows that the difference in IQ between them increases as the difference in educational advantage increases. The issue of heredity and environment in intelligence has also been raised in connection with the question of racial differences in intelligence. The argument s races differ in genetic make-up; if intelligence is also genetic, perhaps races differ in the aspect of their genetic constitutions. Ultimately, the question of racial difference in intelligence may prove unanswerable.

### **2.3 THE GENETICS OF PERSONALITY TRAITS**

Personality like intelligence is a difficult concept to define but it can be described as being made up of various enduring and distinctive traits that are characteristic of a particular person. People differ from one another behaviorally and mentally in many ways; in the things which trigger emotion; whether one is reflective or impulsive; in motivations, in interests; in attitudes; in the ways people cope with stress, guilty and anxiety and so on. Personality is the study of such individual differences among people. Temperament is that aspect of personality that has to do with emotionality- easy emotional arousal, the characteristic types of emotion expressed and typical mood or state, whether up or down.

The genetic constitution, interacting with the environment may influence other personality traits as well. For instance, such personality traits as dominance, sociability, sense of well-being, responsibility, self control, tolerance, achievement, flexibility and many more may have a partial basis in genetics. Environmental influences contributing to personality may be more alike for identical twins than for fraternal twins and this similarity could result in higher correlations for pairs of identical twins. However, in this study it was found that variation in similarity of upbringing were not a major factor in the higher correlations of identical twins thus strengthening the argument for a genetic influence on some personality traits. Thus both heredity and environment are involved in an interactive way in the development of a number of personality traits.

### **2.4 THE GENETICS OF BEHAVIOUR DISORDERS**

There is some evidence for a genetic component in the chronic alcoholism and heredity seems to be a factor in the severe behavior disorder known as bipolar affective disorder (manic depressive psychosis). There is also strong evidence for a genetic basis for the behaviors disorder known as schizophrenia. Schizophrenia is a severe behavior disorder in which thinking is mixed up so that 'reality' is distorted. The emotions expressed are often inappropriate to the situation and behavior is likely to be withdrawn, childish or bizarre. A mild form of schizophrenia is called schizoid behavior. A person with a schizoid behavior disorder is likely to be very shy and eccentric whose patterns of thinking are rigid, who is deficient in experiencing pleasure, who generally expresses little emotionality and who may tend to be overly suspicious. Against this background of these core symptoms, a number of other deviant behaviors are common in schizoid disorders. These include violent and impulsive crime, panic attacks in the face of ordinary social challenges, alcoholism and sexual deviance (Heston, 1970). It is supposed that schizoid abnormalities of behavior are mild expressions of the same genes which are related to schizophrenia.

Whatever the genetic basis, it is clear that the environment play a role in schizophrenia.

## **2.5 NATURE AND NURTURE**

Both species heritage and individual genetic constitution contribute to behavior. But influences from the environment or nurture also contribute heavily to the behavior. The genotype may be said to provide potentialities for the development of structures, behaviors and other psychological characteristics but the realization of these potentialities depends on the interaction of the genotype with environmental factors.

Human social impoverishment has been much studied mostly in orphanages. These children are frequently crowded together, facilities for playing or learning are often inadequate and staff is often too small to give each child much attention. Such 'impoverished' children are then compared with children reared in normal homes. These studies generally show that children from impoverished environments are retarded in mental and social development (Dannis, 1973).

Some studies suggest that geniuses come from environments rich in interactions between the developing genius and the older people (McCurdy, 1957), but the evidence for the beneficial effects of a super rich environment is not very conclusive. However, these studies show that enriching the environment may be able to undo the effect of impoverishment. Thus, the intellectual abilities and school performance of children from impoverished environments may be improved by special enrichment of the environment.

## **ASSIGNMENT**

**What are some examples of genetic contribution to human behavior?**

**How are twins useful in studying these contributions?**

## UNIT 3

### 3.1 BRAIN, BEHAVIOUR AND EXPERIENCE

Neurology is the science of the nervous system. The branch of the psychology and neurobiology to which studies how activity in the nervous system most importantly the brain, is related to behavior and experience goes by many names. The most common is physiological and psychology, but other names are biological psychology, biopsychology, neuropsychology and psycho-physical functions and chemistry of the neurons systems.

There is evidence that some mental illness such as schizophrenia are due in part to brain chemistry malfunctions.

### 3.2 NERONS, SYNAPSES AND NEURO TRANSMITTERS

The brain is estimated to contain about 10 to 12 billion nerve cells or neurons, each of which connected to many others. The connectors between nerve cells are called synapses.

#### 3.2.1 NEURONS

Nerve cells or neurons are the information carriers of the nervous system but other cells in the nervous system called neuralgia or glia cells are the 'housekeeping' cells of the nervous system. They are essential for the nutrition of neurons for the nutrition of neurons, the formation of the fatty covering of certain neurons and removal of the dead cells from the system. Neurons come in many sizes and shapes but they have certain features in common. There is a body cell that contains the machinery to keep the neuron alive and there are fibres of two types. These are dendrites and axon. Dendrites are usually relatively short and have many branches which receive stimulation from other neurons.

The axon is often quite long. For instance, axons connecting the toes to the spinal cord can be more than a meter in length. The function of the axon is to conduct nerve impulses to other neurons or to muscles and glands. Some dendrites and the cell body receive information which is then conducted along the axon; the direction transmission is from dendrites to the fine axon tips. In many cases the axon but not the cell body or dendrites is surrounded by white fatty covering called myelin sheath. The covering increases speed with which nerve impulses are sent down the axon. However, it is the cell membrane which immediately surrounds the cell body, the dendrites and the axon, that is essential for the generation and the conduction of nerve impulses.

#### 3.2.2 NERVE IMPULSES

By using fine wire or fluid field glass tubes known as microelectrodes, neurophysiologists have shown that nerve impulses are electrical event of very short duration which moves along the axon. As the electrical activity coming along the axon reaches and passes the microelectrode, the recording device attached to the electrode registers a quick spark electric impulse. This is the nerve impulse because it is brief and sharp; it is called a spike.

When a neuron is resting and nit conducting a new impulse, the inside of the cell has a negative electrical charge. A stimulus which excites the cell makes the inside charge a little less negative until

a critical point called the threshold, the membrane surrounding the neuron changes its characteristics so that channels are briefly opened which allow sodium ions (charged particles) to enter the cell. The rapid inflow of sodium ion is the basis of the electrical nerve impulse. After a spike or nerve impulse has occurred, other membrane mechanisms restore the cell to its original negative charge and it is ready to fire another nerve impulse.

The electrical nerve impulse travels along an axon somewhat like a fire travels along a fuse. An important principle about nerve impulse is known as the all-or-one law. It states that when a particular neuron is excited to fire a nerve impulse, the spike is always the same size and travels at the same rate in the axon of the neuron. In general, the more strongly a neuron is stimulated, the faster will be its rate of firing. Thus, some information in the nervous system is carried by a frequency of firing code; but the nervous system also has a chemical means of information transmission.

### **3.2.3 SYNAPSES AND THEIR FUNCTIONS**

The axon tips of a neuron makes functional connections with dendrites or cell bodies of other neurons at synapses. A narrow gap called the **synaptic cleft** separates the neurons. A number of small bulbs called **boutons** (from the French bouton) are found at the ends of the axons of the transmitting, or pre-synaptic neurons. Boutons have in them small bodies or vesicles which contain chemicals known as neurotransmitters. These chemicals are released from the vesicles into the synaptic cleft when a nerve impulse reaches the boutons of the transmitting cell. The neurotransmitter then combines with specialized receptor molecules in the receptor region of the receiving cell. The effect for the neurotransmitter on the receiving cell is either to increase its tendency to fire nerve **impulses – excitation** or to decrease this **tendency – inhibition**.

### **3.2.4 NEUROTRANSMITTERS**

Pharmacologists and neurochemists have identified a number of the chemical substances that act as neurotransmitters, as synapses in the nervous system and at the junction between nervous muscles (the neuromuscular junction).

Only one neurotransmitter is stated for action in the vesicles of any given neuron. The combination of neurotransmitter and receptor initiates changes in the membrane of the receiving neuron that lead to excitation or inhibition. The combined neurotransmitter is rapidly deactivated as is excess neurotransmitters in the cleft to make the postsynaptic cell ready to receive another message. One method of deactivation is by catalysts called enzymes which trigger chemical reactions that break up the neurotransmitter molecules, another way deactivation occurs is through the process of re-uptake. In re-uptake the transmitting or presynaptic boutons take back the released neurotransmitter and store it in vesicles for use at another time. In brief, the stages in synaptic transmission are manufacture, storage, release, diffusion, combination with the receptor and deactivation.

The drugs that affect behavior and experience, the psychoactive drugs are namely:

- LSD Lysergic acid diethylamide

- Mescaline
- Marijuana
- Heroin
- Cocaine
- Caffeine
- Barbiturates
- Alcohol

### 3.3 PERIPHERAL AND CENTRAL NERVOUS SYSTEMS

The nervous system is divided into two major sections, the peripheral and the central nervous system. The peripheral nervous system, in turn has two divisions, the somatic nervous system and the autonomic nervous system. The autonomic nervous system, which is important in emotions, has two components the sympathetic division and the para-sympathetic division.

The central nervous system consists of the brain and the spinal cord. The spinal cord carries sensory information to the brain and nerve impulses that command movements from the brain. It also has connections between sensory input and motor output which make possible the autonomic stereotyped responses known as reflexes.

### 3.4 SPINAL CORD AND BRAIN STEM

The brain stem extends from the spinal cord to the fore brain. Going upward from the spinal cord, the main regions of the brain stem are the medulla, pons and midbrain. These structures contain nuclei, or groups of nerve cells and fibre tracts that are important in many reflex activities, important sensory and motor tracts which connect the lower parts of the central nervous system with the forebrain run up and down through the brain stem. Because of the role it plays in alertness, waking and sleep, the reticular formation of the brain stem is of special interest in physiology, psychology, the fibres and nerve cells of this structure that are responsible for arousal are known as the ascending reticular activating system (ARAS).

Major structures in the forebrain are the thalamus, hypothalamus, and cerebrum. The thalamus lies just above the brain stem, it relays and processes sensory information on its way to the cerebral cortex. The hypothalamus is positioned just below the thalamus and is especially concerned with motivated behavior of biological nature. A link between the nervous system and the glandular system of the body is provided by connections between the hypothalamus and the and the pituitary gland.

The cerebrum consists of two hemispheres – the cerebral hemispheres. Covering each hemisphere is a thin, folded sheet of neurons known as the cerebral cortex contain many fibre tracts (the white matter) interconnecting parts of the hemispheres bringing sensory information in and conducting motor commands out. Grooves in the cerebral cortex are called sulci or fissures ridges are known as gyri. The deeper grooves mark off the lobes of the cerebral cortex – **the frontal lobe, the temporal lobe, the parietal lobe and the occipital lobe.**

### **3.5 LIMBIC SYSTEM**

The limbic system consists of structures in the thalamus, hypothalamus and cerebrum which form a sort of ring or border around the lower part of the forebrain. Major structures within the limbic system include the olfactory bulb, the septal nuclei, the septal hippocampus, the amygdala and the cingulate gyrus of the cerebral cortex. Certain structures of the limbic system are involved in emotional behavior, especially the expression of aggression and feelings of pleasure. Other structures in the limbic system have memory functions, especially the **hippocampus** which is said to be important in changing short-term memory into long-term memory.

### **3.6 CEREBRAL CORTEX – BEHAVIOR AND EXPERIENCE**

When considering the functions of cerebral cortex in behaviors and experiences, it is convenient to divide it into sensory areas, motor areas and association areas. The sensory areas receive input from the various sensory receptors; the motor areas send out commands to control patterns of muscle movements; the association areas integrate information being received by the cortex, and thus are involved in such complex psychological processes as memory, perception and language.

### **3.7 SENSORY CORTEX AND PATHWAY**

An important principle applying to the sensory cortical areas is its topographical organization. Specific portions of sensory cortex receive input from particular sensory receptor regions. The senses are mapped on the cortex of the occipital lobe and show a high degree of topographic organization. Fibers in this pathway originate from the ganglion cells of the retina and run through the optic nerves to the optic chiasm where some of them cross the side of the brain opposite the eye from which they originate. The fibers then continue through the optic tract to the lateral geniculate body of the thalamus where they synapse. The axons from the lateral geniculate cells go through the optic radiations to end in the visual sensory cortex of the occipital lobe. The projection is arranged so that particular point in the visual field is projected to the left visual cortex, while those in the right visual field are represented in the right cerebral cortex.

The auditory pathway starts from the hearing receptors in the inner ear that runs to the auditory sensory area of the cortex on the lower bank of the lateral fissure in complex. Important parts of this pathway are the spiral ganglion, the cochlear nuclei, the internal lemniscus, the inferior olive, and the medial geniculate body of the thalamus. Input from one ear reaches both cerebral hemispheres.

The somatosensory system carries information from touch, temperature, pain and joint position receptors to the primary body sense area on the post central gyrus of the cerebral cortex. The body is topographically represented on the post central gyrus, with the lower part of the body represented at the top of the gyrus and progressively higher parts of the body represented lower and lower on the gyrus. The somatosensory system has two major pathways both of which are crossed. They carry information from one side of the body below the head to the somatosensory cortex of the opposite side. One of the somatosensory pathways is the dorsal column pathway, the other is known as the spinothalamic pathway.

The primary motor of the cerebral cortex is on the precentral gyrus. The body is topographically represented so that stimulation of a certain portion of the primary motor cortex causes a pattern of activity in a certain group of muscles. As with the somato sensory cortex, the body is represented upside- down on the precentral gyrus. Since many of the fibres leaving the motor cortex especially those that activate muscles below the body, cross to the other side of the nervous system, damage to the motor area of the cortex typically results in paralysis of muscles on the side of the body opposite the damaged cortex.

Activity in the association areas of the cortex underlines many important psychological functions. Most of our knowledge about human association cortex functions comes from the study of people who have suffered damage of these areas. Damage to the frontal lobes seems to result in problems with the type of memory that enables us to keep track of when events occur in the stream of experience; it also impairs the complete memories that are involved in creative thinking.

### **3.8 SOMATO SENSORY SYSTEMS**

After damage to the parental areas, patients show typical agnosia or inability to recognize objects by touch even though sensory information is reaching the somato sensory area of the cortex. Difficulty is partial orientation, neglect of one side of the body, paraxial, or impairment of the ability to perform sensory motor tasks in the absence of specific paralyses and certain types of aphasia or language difficulties.

Damage to the temporal-occipital; association areas may result in visual agnosia, or difficulty with the visual recognition of objects in spite of normal sensory input to the primary visual sensory area of the cortex.

### **3.9 MAJOR AND MINOR CEREBRAL HEMISPHERES**

Much evidence shows that the cerebral hemisphere performs somewhat different functions. One hemisphere, the major one, is specialized for the processing of language; the other hemisphere, the minor one has only rudimentary language abilities but seems to be somewhat specialized for pattern recognition. The left hemisphere is the major one for almost all right- handed thus since most people are right handed, the left hemisphere is the major one in about 95 percent of the population.

### **3.10 LEFT HEMISPHERE AND LANGUAGE**

The language processing region of the major hemisphere usually the left one has been subdivided into three major components; a posterior component called Wernicke's area, an anterior component known as Broca's area and a fibre tract, the accurate fasciculus which connect the posterior and the anterior areas. Wernick area is involved in understanding spoken and written language and in the formulation of meaningful speech for communication. Broca's area is responsible for the coordination of the movement necessary in making the sounds of speech. The actuate fasciculus carries commands from Wernick's area about what is said to be Broca's area, where they are put into speech movements.

### **3.11 THE RIGHT HEMISPHERE SPECIALISATION**

Studies of patients who have undergone operations for the treatment of severe epilepsy in which portions of the minor hemisphere – usually the right one were removed show that this hemisphere is somewhat specialized for non-verbal pattern recognition and non-verbal memory. However, the degree of specialization for the minor hemisphere is not as great as the language specialization of the major hemisphere. Another operation for the treatment of severe epilepsy is to cut the forebrain commissural such as the corpus coliseum and the anterior commissural that connect the two cerebral hemispheres. Testing of divided-brain patients dramatically shows the separation of language functions in the major and minor hemispheres.

## **ASSIGNMENTS**

**Why is it sometimes said that the neurons system is an information processing system?**

The Rorschach test consist 10 ink blots which may have colored parts. Each card is presented with the question “what might this be?” or “what does this remind you of?” after recording initial responses to all 10 cars, the psychologist asks for more details in order to understand what it is about, card that determined the particular response of the person taking the test.

## **ASSIGNMENT**

**Distinguish among achievement, ability, aptitude and personality test.**

## Unit 4

### 4.1 HUMAN LEARNING AND MEMORY

#### 4.1.1 MEMORY

Memory is the storage and retrieval of things learned earlier.

#### 4.1.2 MEMORY STAGES

According to Atkinson-Schiffrin, memory starts with a **sensory input** from the environment. The input is held for a very brief time - several seconds at the most in a **sensory register** that is associated with the sensory channels: vision, hearing, touch and so forth. From the sensory register information may be passed on to the **short-term storage memory** where it is held for perhaps 20 or 30 seconds. Some of the information reaching the short term store is processed in what is called a **rehearsal buffer**. The term buffer refers to a **holding stage** in which information is processed in certain ways by being rehearsed. Rehearsal means that **attention is focused** on an item of information; perhaps it is repeated over and over or perhaps processed in some other way so as to link it up with other information which has already been stored in memory.

Information processed in the rehearsal buffer may be passed along to the **long-term store memory**; information not so processed is lost or forgotten. When items of information are placed in the long term store they are put into **organized categories** where they reside for days, months, years or a lifetime.

When you remember something a copy of the item is withdrawn or retrieved from the long term store.

#### 4.1.2 THE SENSORY REGISTER

The storage function of the sensory channels is called the sensory register. Most of the information briefly held in the sensory register is lost. The transfer of information from the sensory register to the short term store depends on attention. Some ingenious experiments have shown that visual **sensory register** holds information for up to about a second (Sperling, 1996) while the **auditory (hearing) register** holds information somewhat up to about 4 or 5 seconds (Darwin, Turvey and Crewder, 1972). Studies with the visual sensory register have also shown that it can hold at least **11 to 16 items** of information during the second before it loses the information through decay (Averbach and Sperling, 1961; Estes and Taylor, 1966). The sensory stage seems to be in the **form of faint image called an iconic image**; it is this iconic image which persists in the visual sensory register for a second before it gradually decays but under many conditions the capacity may be as small as two or three items (Glanzer and Razell, 1974). The storage capacity of short term memory can be increased, however, by a process known as chunking. Under optimal conditions for instance, as many as 40 separate items contained in seven chunks can be held in the short term store.

The information in the short term store is usually said to consist of **speech sounds, visual images and words** but recent work has shown that **meaningful sentences** can also be stored in short term, memory (Glanzer and Razell 1974). Much information in this memory stage is lost because it is **displaced by incoming items** of information. Before it is lost the information can be retrieved and used. Studies of

retrieval from short term store (Sternberg 1966, 1975) shows that **we rapidly scan** through the short term store when we are searching for an item of information in it. The scanning is said to be exhaustive. If the item was found in the short term store during the scan, it is retrieved. Finally, some of the information is passed along to the **long term store**.

### **4.1.3 REHEARSAL BUFFER**

The process of rehearsal – keeping items of information at the center of attention, perhaps by repeating them silently or aloud is critical for this transfer of information. Rehearsal is said to go on in a special part of the short term store known as the rehearsal buffer. The more an item is rehearsed, the more likely it is to become part of the long term store. Just going over and over what is to be remembered – called maintenance rehearsal does not necessarily lead to long term memory (Graik and Watkins, 1973). What is known as elaborative rehearsal is more likely to lead to long term memory. Elaborative rehearsal involves giving the material organization and meaning as it is being rehearsed, it is an active rehearsal process. In elaborative rehearsal, people use strategies that give meaning and organization to material so that the to-be remembered information can be filled in with existing organized long-term memories.

### **4.1.4 THE LONG TERM STORE**

Long term memories last for days, months, years or lifetime. The capacity of the long term store is huge and has known limit.

Some theorists believe that there is **no true forgetting** from the long term store. According to this view, once information is stored it is there for good. When we seem to forget, it is because **we have trouble retrieving or getting access to what has been stored**. The information is still there, we just cannot get to it because it has not been stored in an **organized fashion** or because we are not searching for it in the right part of the memory storehouse. Other students of memory maintain that we forget because of the **confusion and interference** produced by new things which are learned.

### **4.1.5 SEMANTIC MEMORY**

The semantic memory store contains the meanings of words and concepts and the rules for using them in language; it is a vast network of meaningfully organized items of information.

### **4.1.6 EPISODIC MEMORY**

This contains memories of specific things that have happened to a person (reminiscences) in his / her life.

## **4.2 LEVELS OF PROCESSING AND AMOUNT OF ELABORATION**

The first **perception**. This gives us immediate awareness of the environment. Analysis **to the deep level** of meaning gives us the best memory.

### **4.2.1 REHEARSAL**

This refers to **keeping of information at the centre of attention**, perhaps by repeating over and over. But according to the levels of processing view, simply repeating information – **maintenance rehearsal** is not enough for good memory. Rehearsal must process the information to the **meaning level** if the information is to be retained.

### **4.2.2 ELABORATION**

This means the **degree to which incoming information is processed** so that it can be led to or integrated with existing memories. The amount remembered depends on both **levels** of processing and the degree to which information is elaborated. The best memory is the result of processing to **semantic level** where the amount of **elaboration is also great**.

### **4.2.3 LONG-TERM MEMORY**

This refers to our reminiscences of past events in our lives, memory, especially the long term variety is essential for behavior and mental life. It is one of the cognitive processes.

## **4.3 ENCODING AND STORAGE IN ENCODING**

One way to remember things well is to organize or arrange, the incoming information so that it fits into existing memory categories, is **grouped in some logical manner** or it is arranged in some other way that makes ‘sense’. When we do our **own organizational encoding** of the incoming information, the process is called **subjective organization**. Memory depends upon the **number of categories** used; the more the categories used or organize what is remembered the better the memory.

### **4.3.1 IMAGERY AND ENCODING**

Incoming information may be encoded by **forming images** of it. An image is not literal copy of an input. Images are **partial and altered representations** of what is in the world around us. The words for which visual images are easily formed are called **concrete** while those that evoke very little imagery are termed abstract, desk (concrete) and mercy (abstract).

### **4.3.2 PAIRED ASSOCIATE LEARNING**

This is like learning a foreign language vocabulary which is paired by English equivalents.

### **4.3.3 ENCODING FOR RETRIVAL**

Finding information stored in long term memory is aided by **‘remainders’** or **retrieval cues** which direct the search through long term memory. A good deal of evidence says it is important to have the retrieval cues **encoded along with the information** that is being put into long term memory. This is known as the **encoding specificity principle**, (Turving and Thomson 1972).

### **4.3.4 LONG TERM MEMORY ORGANISATION**

Information is this organized, categorized and classified in a number of ways.

### **4.3.5 THE TIP OF THE TONGUE PHENOMENON**

When one is trying to remember the name of a person but cannot, it is said the name is at the TOT but it cannot just be reached. Looking at TOT in greater detail we find evidence for the organization of long term memory (Brown and McNeil 1966).

### **4.3.6 FORGETTING**

Forgetting from long term memory refers to the apparent loss of information that has already been stored. Forgetting depends on many factors including the way memory is measured. Memory can be tested by seeing how many trials it takes to relearn a list of nonsense syllables at several times after the original learning (savings method). Another way of measuring forgetting is simply to have people to try to **recall what they have learn (recalling method)**. A third way to assess forgetting is to see **whether people can pick out** or organize previously learned items when they are presented along with incorrect items, this is the recognition method. **Recognition** (1), **savings** (2), and **recall** (3). Information is not well encoded or organized at the time it is learnt, it will be easily forgotten. If what was learnt was **not processed deeply and richly enough**, it will be easily forgotten. One cannot **recall something while engaged in one activity** although it can be recalled later. **Emotional factors** can also play a role in the retrieval failure which underlies much forgetting. Repression which originated in psychoanalysis refers to the failure to recall unpleasant, anxiety provoking events or thoughts and the things associated with them. Psychoanalysis uses the method of free association.

### **4.3.6 INTERFERENCE**

The learning of new things (retroactive) interferes with the memory of things learned earlier. Also, prior learning interferes with memory of things learned later., (proactive).

### **4.3.7 MEMORY OF TEXTS**

It is the meaning or gist but not the text that is remembered (Filelbaum 1966, Bransford and Frank, 1971). According to Kirscht and colleagues (1974, 1975) the meaning of a text called the text base consists of a sequence of meaningful elements called propositions. The propositions in turn are made up of elements called concepts, the meaning of which is stored in semantic memory. Every proposition contains one type of concept called a relational term and one or more other concepts which are called arguments. In a simple proposition the relational term might be the verb which relates the subject and object, two arguments to each other e.g. (HIT, GEORGE JOHN) is the way the proposition 'George, hit John' would be written in this kind of analysis. Simple propositions are embedded in the complex one e.g. 'George apologized for hitting John' would be (APOLOGISE GEORGE, HIT GEORGE, JOHN). Time or casual relationships are expressed by WHEN AND CONSEQUENCE. When 'George, hit John' would be (WHEN GEORGE, JOHN).

When the Romans conquered the Greeks they occupied them. (WHEN (CONQUER, ROMANS, GREEK), COPY, ROMAN, GREEK)

## **4.4 HOW IS TEXT MEANING RECALLED? CONSTRUCTIVE AND RECONSTRUCTIVE PROCESSES**

We do not really remember, in a literal sense what we think we remember, much of our memory is not a 'copy' of the 'to be' remembered material. Instead, the material is elaborated, simplified, and changed in many other ways at the time of input. These modifications at the time of input are called constructive processes. Also changing may occur at the time of recall, reconstructive processes. Reconstructions sometimes called reintegration or confabulation in the case of people with memory disorders who remember very little.

### **4.4.1 EFFICIENT LEARNING AND REMEMBERING**

Skill learning involves:

1. Cognitive stage in which a person learns what is in the task;
2. Association stage in which the skill is perfected;
3. Automation stage; the skill becomes automatic e.g. driving a car;

One is usually much more interested in learning when one knows how well he / she is doing. The distribution of practice helps learning e.g. short practice periods. Carry over from other skills that have been learned must be taken into account. This transfer of training can either be positive or negative if it helps or interferes.

### **4.4.2 MNEMONIC DEVICES**

MBMA (Management by Moving Around)

These are memory aids; SMART (Specific, Measurable, Achievable, Relevant / Realistic, Time Framed)

KRA's (Key Result Areas)

### **STUDY METHODS AND VERBAL LEARNING**

1. Plan a study that you stick to
2. Maintenance rehearsal and elaborative rehearsal; ask yourself what you have just read
3. Remember the importance of organization during learning
4. Get some feedback – test yourself through headings
5. Review before and after examination. Key your review to the type of examination

### **ASSIGNMENT**

What are the major factors involved in the encoding and storage of information in long term memory?

## Unit 5

### 5.1 THINKING AND LANGUAGE

#### 5.1.1 THINKING

Thinking consists of the cognitive rearrangement or manipulations of information from the environment and **symbols stored** in long term memory. A symbol represents or stands for **some event or item in the world**. Thinking, which is highly private such as dreams, is autistic. Thinking, which is aimed at solving problems or creating something new, is called direct thinking. Thinking may be regarded as a form of **information processing** which goes on during the period between a stimulus event and the response to it. The symbols that we use in thinking **are often words and language** and therefore, thinking and language are closely related. A language makes available hundreds of thousands of potential symbols and **gives us rules for using them**. To a large degree, the availability of language symbols is what makes human thinking so much more sophisticated than the thinking of other animals.

#### 5.1.2 IMAGES

Images are a type of symbols used in thinking. However, they are not usually complete 'pictures in the head'. Instead, they are incomplete. In general, images are abstractions of certain features of previous experience.

#### 5.1.3 VERBAL THINKING

Thinking is a verbal matter. Verbal thinking uses **word symbols and rules of grammar** to join words and phrases into sentences. The words, their meanings, and the rules for joining them together are store in **semantic long term memory**. When we think verbally, we draw on this store of information. Thinking is a kind of **'inner speech'** or 'talking to yourself under your breath'.

#### 5.1.4 CONCEPTS

A concept is a symbolic construction that represents some common and general feature or features of subject or events e.g. 'man', 'red', 'triangle', 'motivation' –atom – anger - and learning. In fact most of the nouns in our vocabulary are names of concepts except for proper nouns. The human ability to form concepts enables us to divide things into classes since concepts

are ways of classifying the diverse elements in the world around us; they are convenient tools to use in thinking about the world and solving problems.

#### 5.1.5 TYPES OF CONCEPTS

Simple concepts are defined by the presence of a single property, feature or attribute e.g. red. Conjunctive concepts are defined by the joint presence of two or more features of objects or events e.g. football team. In a disjunctive concept, any of several properties puts an object in the class of the concept

e.g. cards containing three shapes, two borders and squares. These are difficult to learn. Relational concepts are formed on the basis of the relationships among features e.g. more than, heavier than,

taller than, unique and near.

## 5.2 FACTORS AFFECTING CONCEPT ATTAINMENT

When people know a concept similar to the one being learned, they can learn the new one rapidly (**positive transfer**). If a new concept appears to be similar to a known concept but is quite different in some important respect people may have trouble understanding this new concept. Anything that makes the common properties of the concept stand out aids concept attainment; anything that obscures these properties or embeds them in irrelevant details retards concept attainment. **Rearranging, redrawing or reorganizing materials** containing the common properties help people to discover the common elements, they do better than if they are not given such directions (**instructional set**). People learn concepts faster if they have all the relevant information available at the same time.

### 5.2.1 PROBLEM SOLVING

Problem solving is any conflict or difference between one situation and another we wish to produce our goal.

### 5.2.2 RULES IN PROBLEM SOLVING

In everyday problems the rules are given by **customs and laws** of a society. Many of the rules used in solving problems concern the changes that are permissible in going from one situation to another. Two major types of such rules are algorithms and heuristics. **An algorithm is a set of rules which if followed correctly will guarantee a solution to a problem. Heuristics are strategies usually based on past experience with problems**, which are likely to lead to a solution but which do not guarantee success. One common strategy or heuristic is to **break the problem down into smaller sub-problems**, each of which is a little closer to the end goal.

**GXDOBHAWD FX VBC XOFC QOC HM BNKIQ IQZ IQDSA PCBITFHS. IQZ VBC  
IGGAFDIXFHQ HM VBC XOFCQOC VH BNKIQ GSHPACKX**

- i. The sentence is probably English
- ii. The most commonly used letter in English is e
- iii. Only a few two-letter words are commonly used in English. Could some of the short words in the sentence be the, are or is?
- iv. Are any words repeated?
- v. Look at the double letter. Only some combinations are permissible in English and certain double letters are more likely to appear at some places in words than others.
- vi. Since this is a book about psychology, perhaps the sentence is about psychology

### 5.2.3 HABIT AND SET IN PROBLEM SOLVING

The algorithm and heuristics we use in solving problems typically come from past experience with the solution of similar problems. Practice in solving problems in one way tends to give people a set to use the same rules on other problems.

**MACDONALD – MAC TAVISH – MC MILLAN – MAC HINERY – MAC GREGOR**

**GIVEN THE FOLLOWING EMPTY JARS AS MEASURES**

Obtain this amount of water

<b>PROBLEM NO.</b>	<b>A</b>	<b>B</b>	<b>C</b>	
1. Practice	21	127	3	100
2. Practice	14	163	25	99
3. Practice	18	43	10	5
4. Practice	9	42	6	21
5. Practice	20	59	4	31
6. Test	23	49	3	20

**FUNCTIONAL FIXEDNESS**

It is a set to use objects in the way that we are accustomed to BOX WITH TOW DRAWING PINS AND CUBE

**5.3 DECISION MAKING**

Decision making is a kind of problem solving in which we are presented with several alternatives among which we must choose. The decision makers will be trying to optimize utility perceived benefit or psychological values in making decisions. One guessed decision or perceived probabilities estimates are known as subjective probabilities. One idea about decision making which has been formulated as a mathematical model of the decision making process says that people make decisions which will maximize subjectively expected utility. In real life people use ‘rules of thumb’ or heuristics in deciding among alternatives.

**5.3.1 HEURISTICS AND BIASES IN DECISION MAKING**

Tvsersky and Kahneman (1974) have described the heuristic decision making rules of representativeness, availability and adjustment e.g. personality descriptions. A fundamental axiom of statistics says that probabilities estimated from large samples are likely to be closer to the true probabilities than those obtained from smaller samples. The logic of probability says that if

each event is independent then the doors are still 50-50 despite previous failures e.g. in casino (gamblers fallacy).

Another judgment heuristic is known as availability. Some events are easier to imagine or remember than others.

Our subjectivity probability estimates are sometimes known as adjustment. We start with a certain subjective probability and raise or lower it depending on the circumstances. Judgments which depend upon the starting point have a biasing report known as anchoring e.g. estimating  $8 \times 7 \times 6 \times 5 \times 3 \times 2 \times 1$  or  $1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$ .

#### 5.4 WEIGHTING ALTERNATIVES

A manager who has select effective players can do better during the off season, e.g.

ATTRIBUTE	Morgan	King	Robinson	M	K	R
Cost (High utility) 1	3	2	3	3	2	1
Means low cost 2	1	2	3	2	4	6
Previous year scoring 3	1	2	3	3	6	9
Inclusion 2	1	2	3	4	8	12
Ball possession 4	1	2	2	5	15	10
Fitness 5	1	3	SUM	17	35	38

#### 5.5 CREATIVE THINKING

A creative thinker is trying to create something new under the sun. Creative solution are new ones that other people have not thought of before. Creative thinking in the arts and sciences seem to involve a considerable amount of unconscious rearrangement of symbols. The sudden appearance of new ideas is called insight.

##### 5.5.1 INSIGHT IN CREATIVE THINKING

E.G King Hiero’s golden crown and assignment to Archimedes.

##### 5.5.2 STAGES IN CREATIVE THINKING

- i. Preparation
- ii. Incubation
- iii. Illumination
- iv. Evaluation
- v. Revision

## **5.5.2 NATURE OF CREATIVE THINKING**

Converse thinking is concerned with a particular end result.

When thinking creatively people tend to think in a divergent manner, thus having many varied thoughts about a problem. Divergent thinking also involves artistic thinking (private dreams).

## **5.5.3 PERSONALITY TRAITS OF CREATIVE THINKERS**

- i. they prefer complexity
- ii. they are more complex psycho dynamic
- iii. they are more independent
- iv. they are more self-assertive and dominant
- v. they reject suppression

## **5.6 LANGUAGE AND COMMUNICATION**

We use it thinking and communicating with other people. Communication consists of signals made by one organism that has meaning for other organisms and affect their behavior.

### **5.7 SIGNS AND SYMBOLS**

A sign is innately meaningful or acquires meaning through the natural relationship of event to one another. Symbols have arbitrary meanings. Symbols can take many forms. The most universal system of communication with symbols is a language in which word symbols are used in various combinations to convey meaning. Language symbols can either be written or spoken, (letter and sounds).

## **5.8 ANIMAL COMMUNICATION**

Nearly all species of vertebrate animals (those with backbone) communicate with members of their own species and sometimes with members of other species too. The word communicate means they make signs often innate ones which have meaning for other animals. The number of signs by lower animals species is rather small. The rhesus monkey for instance, has a repertory of about 37 signals (Wilson, 1972). Although animals can communicate they do not have natural languages. A language employs symbols with arbitrary meanings. The barks, songs, grimaces or threats of animals are meaningful signs but not symbols and therefore not language.

Of all the animals chimpanzees have brains that are most likely those of human beings in size and structure, however, attempts made to teach chimpanzees language have proved that language is a species-specific ability limited to homo sapiens.

### **5.8.1 SPEECH STIMULI**

Speech sounds are made by blowing air across the vocal cords which sets the codes vibrating. The sound that is produced is modified by movement of the tongue, lips and mouth.

### **5.8.2 PHONEMES**

Phonemes are sound units. They differ from language e.g. b; g; k; n; etc

### **5.8.3 SYLLABLES**

The syllable, a combination of two or three phonemes is the smallest unit of speech perception.

### **5.8.4 MORPHEMES, WORD PHRASES, CLAUSES AND SENTENCES**

Morphemes are the smallest units of meaning in speech perception. The perceived meaning of speech is also carried by words, phrases, clauses and sentences.

### **5.8.5 PSYCHOLOGY OF GRAMMA**

The grammar of a language is basically a set of rules for constructing sentences from words and phrases. Beginning at about 18 months of age children start putting words together in sequences and so begin to learn the grammar of their language.

## **5.9 SURFACE STRUCTURE AND DEEP STRUCTURE**

The surface structure is that given by rules of grammar e.g. Harry is willing to help, versus Harry is difficult to help.

### **5.9.1 ASSOCIATIVE STRUCTURE**

The fact that certain words are likely to appear together in sequence is what is meant by the associative structure of a language, e.g. black – white, ladies – gentlemen, chalk – board and pots – pans.

#### **ASSIGNMENT**

**What is thinking and how does it take place?**

## UNIT 6

### 6.1 INTRODUCTION TO PSYCHOLOGY

#### EMOTION

This word can be defined in many different ways:-

- The way we feel when we are emotional
- The behavioral arousal that occurs in certain emotional states
- The psychological or bodily basics of emotions
- Emotions are expressed by language, facial expressions, and gestures
- Some emotions fear and anger are very much like motive states in that they drive behavior.

#### EXPRESSION AND RECEPTION

This is done in various ways e.g.

- If a friend wins a price and shows joy, one might also be happy or be jealous
- Screams denote fear or excitement, groans-pain or unhappiness, sobs- sorrow and laughter-enjoyment.
- A tremor or break in the voice may mean great sorrow; a high pitched sharp voice usually means anger.
- We also perceive a great deal about emotion from facial expression.

In an early set of studies it was found that three dimensions of facial emotional expression could be perceived with reasonable accuracy. These are pleasantness, attention, rejection and sleep tension. Attention is characterized by the shuttering of the eyes, lips and nostrils. Sleep tension refers to the level of tenseness or excitement portrayed. However, learning can modify the expression or even the expression of an emotion. When it comes to more subtle emotions such as awe and jealous, different ways of expressing them can be used thus making it difficult it perceive such emotions. Also a person can express several emotions at the same time.

### 6.2 SOURCES OF EMOTIONAL FEELINGS

- Moods; emotional tone or background i.e relating long lasting
- Specific emotions of joy, anger and fear

Moods tend to cycle from 'up to down' and break again with a period that varies from person to person and from time to time for a given person. Perhaps they reflect subtle cynical changes seen in manic-depressive psychosis; a severe behavioral disorder may be related to the amounts and availability of certain neurotransmitter chemicals.

#### 6.2.1 SITUATIONS LIKELY TO CAUSE FEELINGS OF PLEASURE, FEAR, ANXIETY, ANGER, HOSTILITY. DEPRESSION AND GRIEF

Pleasure: is a reaction to the satisfaction of a motive of the attainment of a goal. This could form daydreams of fantasies.

**Fear and anxiety:** It is triggered by situations that are perceived as physically threatening, damaging to one's sense of wellbeing or potentially frustrating. Classical conditioning can be a source of fear. Fear may depend on an individual. A very strong fear such as someone who has fallen from a height may through life experience fear high places. This is known as 'phobes'. Anxiety is a vague fear experienced without our knowing just what the matter is. One cause of anxiety can be an unconscious memory of fear stimulus of generalization also causes anxiety.

**Anger and hostility:** they are frequently reactions to the frustrations of motives, injuries, insults and threats. For infants, simple reaction e.g. being required to go to bed, having things taken away, have face washed, being left alone, losing attention of an adult, failing to accomplish something. For older children and adolescents cause of anger shift from physical constraints and frustrations. Social frustrations also apply to adults but adults have learned to suppress their anger. They usually show this as annoyance, as socially disapproved behaviors or things that we do not want other people to do e.g. spitting, smelling bad, cheating, etc

Pre-school children express anger through temper tantrums, surliness, bullying and fighting. Adolescents and adults show anger subtly through sarcasm, swearing, gossiping and plotting. A harsh father who frequently makes his son angry by restricting the boy's activities may become such a stimulus for anger that the boy feels generally hostile to all superiors (conditioned hostility).

### **6.3 DEPRESSION AND GRIEF**

Depression may result from many blocked motives. When depressed, people often feel inadequate and worthless because of their failures to reach important goals. Also, they may give up many activities and often withdraw from other people into their own shells. Depression often lasts a short period but for some people because of innate predisposition, depression can be prolonged and severe enough to make suicide a possibility or therapy a necessity.

**Grief or sorrow and depression** are closely related but grief is the emotion triggered by a specific loss such as the death of a family member or a friend. However, the grief-stricken person does not feel equally the worthlessness and inadequacy we feel sorry because we cry, angry be characteristic of depression because the emotional feelings are perceived as external and not due to personal inadequacies.

### **6.4 THE PYSIOLOGY OF EMOTION**

Psychologists are able to measure the heart rate, the blood pressure, the blood flow to various parts of the body, activity of the stomach and gastrointestinal system levels of various substances such as hormones in the blood, breathing rate and depth and many other bodily conditions in emotion.

Many of the bodily changes that occur in emotion are produced by the activity of a part of the nervous system called autonomic nervous system has parts which often work in opposition. One part, the sympathetic system increases the heart rate and blood pressure and distributes blood to the muscles of the legs and arms. Observations indicate that it is this part of the autonomic

nervous system that is active in many strong emotions especially fears and anger.

## **7. PATTERNS OF BODILY RESPONSE IN EMOTION**

Activity occurs in both the autonomic and somatic parts of the peripheral nervous system in emotional states. The somatic nervous system is the aprt of the peripheral nervous systems which activates the stripped muscles of the body, the arm, leg and breathing muscles etc.

The changes in breathing, muscle tension and posture seen in emotion are brought about by activity of the somatic nervous system. The patterns of emotion in anger and fear are known as emergence reaction or 'slight-or-fight' response. For example in both anger and fear the heart rate usually increases, blood vessels in the muscles dilate so that the body is more prepared for action, blood sugar is mobilized from the liver, the hormones, epinephrine are released from the adrenal gland, the pupils of the eye dilate and the peripheral blood vessels of the skin are constricted thus reducing the possibility of bleeding and making more blood available to the muscles. Muscles tensions and breathing rates tend to increase in both fear and anger.

## **8. THE BRAIN AND EMOTION**

The brain is involved in the perception and evaluation of situations that give rise to emotion. In other words, the brain controls the physiological expression of emotion.

## **9. AROUSAL**

Many emotions are said to have an arousal component. Thus when we are emotional we often feel excited and 'keyed up'. Some therapists have argued that all emotion is just the degree to which a person or animal is stirred up. For example, high levels of arousal are present in anger, fear and joy with low levels in sadness and depression.

## **10. PSYCHOSOMATIC REACTION**

The bodily changes that take place in fear and anger mobilize the body's energy to deal with emergence situations e.g. making a person to react more quickly, exert more strength, run faster or fight harder. However, in time the high heart rate and blood pressure, the increase in secretion of hormones and the alteration of digestive function can bring about actual damage to tissues and organs of the body. Alternatively, they can make the individual more susceptible to infection or less able to recover from diseases. Thus chronic anxiety, hostility and tension can bring the bodily disorders known as psychosomatic reactions. It has been demonstrated that many disorders have a psychosomatic basis in some people e.g. stomach ulcers, high blood pressure. Asthma, dermatitis (inflammation of the skin) and obesity.

## **11. THE 'LIE DETECTOR'**

'Lie detectors' do not detect lies but measures bodily indicators of arousal. Many of these measure blood pressure, breathing rate and depth and changes in skin conductance. Because they make a record or graph of several bodily functions, ie detectors are often called polygraphs. The idea is that a person can lie without showing it outwardly but cannot control the arousal response that accompanies fear, anxiety and apprehension evoked by telling a lie.

A lie detection test presents words and questions carefully chosen to provoke emotion if a person is lying but not if he / she is telling the truth. The subject is usually asked a series of questions while record is made of physiological response. Some of the questions are 'neutral'; they are routine questions such as what is your name, where do you work, where did you go to school etc. others are critical, they concern the crime about which the person may have knowledge. The critical questions are designed to evoke fear of detection or feelings of guilt about crime. After these questions have been asked, the examiner compares the record for differences between the critical and neutral questions. However, lie detectors are not fooling proof. Hardened criminals may not show any change, others may lie because of distorted memories.

## 12. THEORIES OF EMOTION

- i. **JAMES – LANGE THEORY:** felt emotion is the perception of bodily changes. 'We feel sorry because we cry, angry because we strike, afraid because we tremble.' This theory gives the following sequence: - perceive the situation that will produce the emotion, react to this situation, and notice the reaction weakness, bodily reactions are quite similar in many emotional states.
- ii. **CANNON-BARD THEORY:** Says that felt emotion and bodily reactions in emotion are independent of each other, both are triggered simultaneously. Sequence perceives potential emotion producing situation, lower brain areas are activated and send output to two directions:
  - a. To internal bodily organs external muscles to produce the bodily expression of emotion
  - b. To the cerebral cortex where the pattern of discharge from the lower brain areas is perceived as the felt emotion

**13. SCHACHTER-SINGER THEORY:** the interpretation of bodily arousal Schachter and Singer (1962) argue that the bodily state of emotional arousal is much the same for most of the emotions we feel and that even if there are physiological differences in automatic patterns of response people cannot perceive them. The theory says since bodily changes are ambiguous any number of emotions can be felt from a 'stirred up' bodily condition. People are said to have different subjective or felt emotions because of difference in the way they interpret or label the physiological state. Sequence (a) perception of a potential emotion-producing situation (b) an arousal bodily state which results from this perception and which is ambiguous (c) interpretation and labeling of bodily state so that it fits the perceived situation.

## SENSORY PROCESSES

- a. The senses are the channels through which we come to know about the world
- b. Vision enables us to find our way through crowded streets, to appreciate the riches of an art museum or the delicate new foliage of spring.

- c. Hearing makes possible the use of speech for communication among people – the lover’s tender words, the bigot’s venom, or the professor’s wry humor.
- d. Through the chemical senses of the taste and smell we avoid spoiled foods or savour the delights of French cooking.
- e. The skin senses enable us to feel pain of a bruise or appreciate the tingle of a cold day and the warmth of a fire.
- f. The skin sense may be sub divided into cold, warmth, pain and touch.
- g. Sense organs in the muscles, tendons and joints tell us about the position of our limbs and the taste of tension in the muscles. They serve the sense called kinesthesia.
- h. The vestibular sense which are sense organs in the semi-circular canals and other organs of the inner ear inform us about the movement and stationery position of the head, it is the key sense in maintaining balance.
- i. Including these other uncommon senses we have the following: vision, hearing, taste, smell, cold, warmth, pain, touch, kinesthetic and vestibulant senses.

**j. SENSORY CHANNELS**

Each sensory system is a kind of channel, which is stimulated by light and also by kind of experience. Thus the visual channel is usually stimulated by light and also by pressure applied to the eyeball. Regardless of the source of stimulation, activity produced in a sensory channel will result in a certain type of experience. In other words, what we experience is activity in the nervous system. We do not experience the stimulating word directly; instead we experience the patterns of activity in our nervous systems which are triggered by stimulating events.

**k. Receptor stimulation, transduction and codes**

Each sensory channel consists of a sensitive element (called the receptor) nerve fibres leading from this receptor to the central nervous system and the various relay stations and places of termination within the central nervous system. a receptor is a cell of group of cells specialized to respond to relatively small changes in a particular kind of functions. Other receptors such as those for pain are merely the relatively unspecialized ends of nerve fibres. In other cases, such as taste, hearing, kinesthesia and vestibular sense, the receptor has developed from the same sort of cells that produce skin.

Each of these receptors responds primarily to a certain kind of physical energy. The temperature senses of warmth and cold respond to thermal energy. The receptors smell and taste respond to chemical substances. Four senses, touch, kinesthesia, the vestibular sense and the hearing are mechanical ones; some kind of mechanical movement is required to activate them. The pain sense is stimulated by tissue destruction and by extremes of chemical and thermal energy. The remaining sense, sight, responds to a certain change of electromagnetic energy.

**14. A THEORY OF RELATIONSHIPS AMONG EMOTIONS**

In order to show the relationships among emotions Phitchil assumes that they differ in three ways: intensity, similarity with one another and polarity or oppositeness. Thus Phitchik has proposed a descriptive theory that is concerned with what are called basic or primary emotions and the way they

can be mixed together.

### 15. EMOTIONS AND MOTIVATION

The line between motives and emotions and emotions is a thin one: fear for example, is an emotion but is also a motive driving behavior because people engage in goal directed behavior when they are afraid. One theory of motivation by (1970) says that almost all our sustains and goal-directed behavior is emotionally toned and that is the emotional tone which provides direction for long sequences of behavior. For instance, the motive during a person’s behavior in his or her job might be fulfillment of doing good work or the satisfaction of being esteemed by friends and colleagues or pleasure of mastering new things.

### 16. A COGNITIVE THEORY OF EMOTION

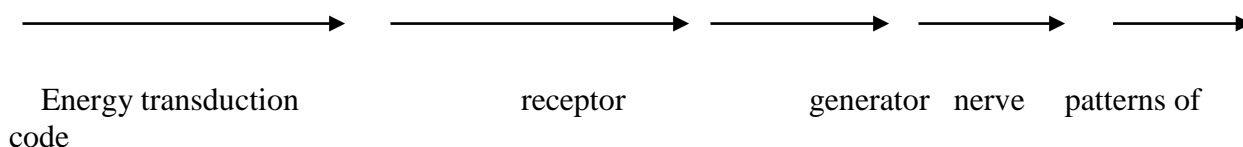
Richard Lazarus (1970) and his co-workers have developed a theory of emotion which emphasizes the appraisal of information coming from several sources. Since appraisal involves cognition or the processing of information coming from environment, from the body and from memory; the theory is called a cognitive one.

### ASSIGNMENT

**What are the general situations that result in pleasure, fear, anger and depression?**

In order for us to know about the world around (within) us physical energy must be changed into activity within the nervous system. The process of converting physical energy into nervous system activity is known as transduction. Transduction occurs at the receptors: the cells which are specialized for the more efficient conversation of one particular kind of energy. In general, during the transduction process receptor cells convert physical energy into an electrical voltage, or potential called the receptor potential. In some sensor systems the receptor potential itself directly triggers the nerve impulses which travel to the central nervous system. The electrical nerve which triggers nerve impulses is known as the general potential.

For a given event in the environment, thousands of nerve impulses are generated and conducted to the central nervous system. Since these impulses travel long different fibres at slightly different times, they form a pattern of input to the central nervous system that is basic to our sensory experience of the vent. Thus beginning with the transduction process at the receptor, physical energy results in a pattern of nerve impulses in the nervous system,. In other words, the physical energy is changed into a code made up of a pattern of nerve firings. The firing patterns that correspond to events in the environment are known as afferent codes (the word afferent in this context means ‘input’.)



## **1. PSYCHOPHYSICS**

This means the relationship between physical events at one end of the sensory channel and experience and behavior at the other end.

## **2. DETECTION AND THE ABSOLUTE THRESHOLD**

Each receptor requires some maximum level of physical energy to excite it and make detection possible. This can be done statistically.

## **3. DISCRIMINATION AND THE DIFFERENTIAL THRESHOLD**

This is the smallest difference that can be discriminated e.g. a room lit by a 25 watt bulb and additional 25 watt bulb versus a room lit by 1000, 25 watt bulbs having one 25 watt bulb added. Thus the value of the differential threshold depends upon the intensity of stimulus to which more energy is added.

## **4. THE SCALING SENSATION**

Respondents sat the method of magnitude estimation as the best unbiased measure of sensation e.g. assigning the loudest tone, the number 20 and the weakest 1 and the intermediate tones the numbers in between.

Only a small portion of the electromagnetic spectrum is visible. These are called visible spectrum or light waves. To express wavelength the metric scale is used. The wavelengths are expressed in billionths of a meter or monometers (nm). In sunlight, rays of different wavelengths are mixed together. In 1666 Isaac Newton found that a ray of sunlight could be broken down into its component; wavelengths bypassing a beam of white or mixed light through a glass prism.

## **5. STRUCTURE OF THE EYE AND SEEING**

Light enters the eye through the pupil and travels through the cornea and lens and the interior of the of the eyeball strike the rod and cone cells of the retina at the back of the eyeball. Transduction of the physical energy receptor potentials occurs in the rod and cone cells. Nerve impulses are then generated in certain other cells of the retina. These impulses travel to the brain along optic nerve and pattern signals a visual event in the environment. The pattern of the nerve impulses that corresponds to a particular aspect of a visual stimulus is called the afferent code for the aspect.

## **6. HEARING**

Through hearing we can understand speech, receive many great signals and cues and drive one of the greatest pleasures: listening to music.

## **7. THE PHYSICAL STIMULUS FOR HEARING**

The loudness, pitch and timbre (distinctive sound) which person perceives ‘the psycho’ part of the psychophysics are associated with features of the physical stimulus – the ‘physical’ part.

## **8. SOUND WAVES**

Sound waves are usually generated by vibration of a physical object in the air. A wave of pressure moves through the air like ripples of water at about 760 miles per hour or about 1 130 feet per second at about 20<sup>0</sup>C the alterations in air pressure moving in all directions from the source are called sound waves and such sound waves are the physical stimuli for everything we were. A sine wave is produced is a pure tone. The distance between the peaks of the sine wave is the wavelength. In hearing, the term is frequency. The frequency of a sine wave is simply the number of cycles, alterations between positive and negative pressure in a given period of time. Frequency is related to our experience of pitch. In general; the higher the frequency the higher the perceived pitch Frequency is usually expressed in terms of the number of cycles of pressure change occurring within a second. One cycle per second is called hertz (HZ).

## **9. MEASUREMENT OF PHYSICAL SOUND INTENSITY**

Intensity gives us a measure of how great the pressure changes are. The loudest sound that people can listen to without experiencing discomfort has amplitudes; decibel (db) is used as a unit of measurement. The decibel expresses a ration of two pressures without specifying the pressures. Thus 20 decibels represents the ration of 10 times; 40 decibels 100 times, 60 decibels 1 000 times, up to 120 decibels 1 000 000 times. Thus the decibel scale is logarithmic one and decibels can be defined by the formula:

$$\text{dB} = 20 \log \frac{p_1}{p_2}$$

## **10. THE AUDITORY RECEPTOR AND TRANSACTION**

In order for a person to hear, the nervous system must be set into action. Physical energy must be converted or transduced into electrical activity by auditory receptors. The external ear collects the energy; the middle ear transmits the energy and the inner ear transfuses the energy into nerve impulses.

## **11. FREQUENCY AND PITCH**

Generally speaking, the audible range for humans is between 20 and 20 000 HZ. Dogs and bats can detect higher frequencies than humans can.

## **12. AFFERENT CODES IN HEARING**

The afferent codes for loudness may be based on the fact that sense organs usually generate more and moore nerve impulses as the intensity of stimulus increases.

## **13. THE CHEMICAL SENSES**

The smell and taste receptors respond to various aspects of chemicals in the environment. For this reason, smell and taste are known as the chemical senses. Through smell people can detect and experience many changes in the chemical world that surrounds them. The sense of smell

in many animals surpasses that of human beings.

#### **14. TASTE**

The receptors for taste are specified cells which are grouped together in little clusters known as taste buds. Most of these buds are covered on the top and sides of the tongue but a few of them are at the back of the mouth and in the throat. A number of bumps on the tongue called papillae are richly populated with taste buds. To stimulate the taste receptors, substances must be in solution which wash around the papillae and penetrate to the taste cells within them. Taste sensitivity is not nearly as keen as that for smell. For instance, depending upon taste substances it takes from 1 part in 25 to 1 part in 2000 before it can be easily detected. In general people are more sensitive to acids and bitter substances than to qualities namely; salty, sour, sweet and bitter.

#### **15. AFFERENT CODE FOR TASTE**

The 'neutral message for gustatory quality is a pattern made up of the amount of neutral activity across many neutral elements.' (Erickson 1963, p213).

#### **16. THE SKIN SENSES**

Four skins are usually distinguished: pressure or touch, cold, warmth and pain. Much of what we receive from the skin senses results in such 'simple' experiences as itches, tingling, and feelings of hot and cold or painful sensations of injury. The skin's senses can tell us much more

e.g. identify objects by touch or even learn to read Braille. The skin has punctuated sensitivity i.e. it is sensitive and the thumb and callused areas are the least sensitive of all.

#### **17. TEMPERATURE**

Experiences of cold and warmth are elicited by changes in the normal gradient of the skin temperature i.e. by changes in the difference between the temperatures of the skin surface and the temperature of the blood circulating within it. The surface of the skin is usually 32°C and 33°C and that of the blood beneath it 37°C. A stimulus of 28 to 30°C which is definitely felt as cold increases its gradient a little. A stimulus of 34°C which can be felt as warmth decreases a little. Thus it takes a change in skin temperature of only 1 to 2°C to be experienced as warmth or cold.

#### **18. PAIN**

Pain motivates a multitude of behaviors. Many people will do many things to reduce it. Pain may trigger aggression against the source of the pain or even against neutral objects in the environment. Pain has immense biological importance because it may signal something is wrong with the body. Many different stimuli produce pain; a needle prick, scalding steam, a cut, a hard blow to the skin (noxious stimulation). Pain stimuli are said to be those that receptors stimulated by this bodily tissue in some way. There is evidence that receptors stimulated by tissue damage are free nerve endings. The fibres carrying the information about pain are the smallest diameter fibres of the sensory nerves and rates of firing in these fibres probably constitute much of the afferent code for pain.

## 11.0 PERCEPTION

Perception refers to the way the world looks, sounds, feels, tastes or smells. It may also be defined as what is immediately experienced by a person. It can also be defined as the processed giving rise to our immediate experience of the world. A famous American psychologist William James has said, "Part of what we perceive comes through the senses from the object before us, another part always comes out of our own head." The 'out of the head' part of this quotation refers to the elaborations, transformations and combinations of the sensory inputs that make our experience or perception of the world what it is.

An illusion is not a trick or misperception; it is a perception. We call it an illusion because it is a perception that does not agree with other perceptions. For instance, our immediate perception of the line lengths in the Muller-Lyer illusion does not agree with the perception we obtain from actually measuring the lines. Thus illusions demonstrate that what we perceive often depend on processes that go far beyond the 'raw data' of the sensory input. Psychologists are interested in illusions because they show that perception results from the transformation, elaboration and combination of sensory inputs. The gestalt psychologists have said, 'the whole (perception) is more than the sum of its parts (sensory).'

- 1.0 Perception processes we are interested are:
- 1.1 Attention or the selection of certain inputs to be at the focus of experience.
- 1.2 Form perception
- 1.3 The constancy of experience despite variations in the sensory
- 1.4 Depth perception
- 1.5 The perception movement
- 1.6 The role of past experience and learning in perception
- 1.7 The influences, motivation, emotion and experience.

These important processes go on so smoothly and automatically that we are seldom aware of them at work. They become dramatically apparent however under the influence of certain drugs which later alter them.

## 2.0 ATTENTION SELECTIVITY IN PERCEPTION

Only a small fraction of the sensory input we receive at any time in experience or perceived. There is a focus and a margin to our conscious experience. The events we perceive clearly are the focus, while other events in the margin of experience are only dimly perceived or not perceived at all. With time what was in the focus shifts to the margin may become the focus of experience. Attention is the term given to the processes that select certain inputs for inclusion in the focus experience. Thus attention is a critical part of perception because it determines what we are experiencing or perceiving at a given time.

## 3.0 FILTERING

A basic process in attention is considered to be a kind of filtering of the sensory information we receive. We cannot process all the information in our sensory channels so we filter out or block irrelevant information (Broadbent 1958). Thus we focus on certain aspects of the sensory input and ignore others. Suppose a different message is presented to each ear through headphones a procedure

called dichotic presentation of stimuli is very difficult if not impossible to attend to the two messages with both ears, binaural presentation of stimuli.

#### **4.0 WHAT DIRECTS OUR ATTENTION**

Why do we ‘pay attention’ to some things and not to others? As any good advertising person could explain, there are certain external factors in the environment that direct attention. And as psychologist (and may be an advertising person too) might be explained there are no internal factors such as motives or needs that direct attention.

#### **5.0 EXTERNAL FACTORS, DIRECTING ATTENTION**

Of many external factors governing what is selected for focus of attention some of the most important are:

1. Intensity and size
2. Contrast and novelty
3. Repetition
4. Movement

#### **6.0 INTERNAL FACTORS THAT DIRECT ATTENTION**

Besides the external factors in the environment that attract and direct attention, there are factors within individuals that cause them to attend to one event instead of another. One is motives or needs. People who are hungry, thirst or sexually aroused are likely to pay attention to events in the environment which will satisfy these needs. Implied promises of sexual gratification for instance are common in advertisements, especially those selling beauty products to men and women. Another internal factor is preparatory self – a person’s readiness to respond to one kind of sensory input but not to other kinds. For instance, a husband who is expecting an important phone call may hear the telephone ringing in the night but his wife may not. The wife on the other hand may be likely to hear the baby crying and not the phone. A third internal factor is interest. For example, on a winter evening a person interested in basketball is likely to hear the words ‘basketball’ or ‘score’ spoken by a radio announcer while paying little attention to the rest of the news.

#### **7.0 FORM PERCEPTION**

The sensory inputs we receive come into our awareness as shapes, patterns and forms. We do not ordinarily perceive the world around us, patches of color, variation in brightness or loud sounds. Instead we see tables, floor, walls, trees and buildings; we hear automobile horns, footsteps and words.

#### **8.0 FIGURE AND GROUND IN FORM PERCEPTION**

Perhaps the most fundamental process in form perception is the recognition of a figure on a ground. We see the objects and forms of everyday experience as standing out from the ground. Pictures hang on a wall; words are seen on a page. In these cases, the pictures and the words are perceived as the figure while the wall and the page are the ground. The ability to distinguish an object from its general background is basic to all form perception.

The figure ground relation is also found in senses other than vision. When we listen to a symphony we perceive the melody or theme as the figure and the chords as ground. In rock music, the guitarist uses repetitive chords as the ground for a more or less varied son or figure.

## **9.0 CONTOUR IN FORM PERCEPTION**

We are able to separate forms from the general ground in our visual perception only because we can perceive contours. Contours are formed whenever a marked difference occurs in the brightness from white at one border to lack at the opposite border you will perceive no contour. The paper will appear uniform and if you are asked to say where the sheet stops being light and starts to become dark you can only guess or be arbitrary. On the other hand if the change is marked rather than gradual – suppose shades are skipped – you will see the paper as divided into two arts, a light and dark. In perceiving the division at the place where the brightness gradient abruptly changes, you have perceived a contour.

Contours give shape to objects in our visual world because they mark off an object from other objects of from the general ground. When contours are disrupted visually as in camouflage, objects are difficult to distinguish from the background. But just because contours give shape to forms does not mean that contours themselves are shapes.

## **10.0 ORGANISATION IN FORM PERCEPTION**

When several objects are present in the visual field, we tend to perceive them as organized into patterns or groupings. Such organization was studied intensely in the early part of this century by the gestalt psychologists. They emphasized that organized perceptual experience has properties which cannot be predicted from a simple analysis of the components. The gestalt psychologist stressed the fact that the ‘whole is more than the sum of its parts.’ This simply means that perception has its own new properties after organization has taken place.

Organizations in perception partially explain our perception of the complex patterns as unitary forms per objects. We see objects as objects only because grouping processes operate in perception. Without grouping processes the various objects and patterns we perceive – a face on a television screen, a car, a tree, a book – would not ‘hang together’ as objects or patterns. They would merely be so many contoured dots, lines or blotches.

What are some of the laws of perceptual organization? Another is similarity yet another is symmetry and also continuation which is the tended to perceive a line that starts in one way as continuing in the same way. For example, a line that starts out to be a curve is seen as continuing on a straight course, or if it does change direction as forming an angle rather than a curve. There is also the law of common fate. The law of common fate says that the elements which perceived as moving together form an organized group. Finally the law of closure makes our perceived world of form more complete than the sensory stimulation that is presented. The law of closure refers to perceptual processes which organize the perceive world by filling in gaps in stimulation. But their action we perceive as a whole form, not just disjointed parts.

## **11.0 CONSTANCY OF PERCEPTION**

The rest of our perceptual world is stable and this stability is present early in life. A man's size does not appear to change much as he walks towards us. A dinner plate does not look like a circle when viewed from another. The location of a sound does not appear to change when we move our heads. Stability of perception helps us to adapt to the environment. It would be impossible in a world where sounds changed their locations when we moved our heads and where objects changed their shapes and sizes when we saw them from different positions and distances.

## **12.0 CONSTANCY PERCEPTION**

The size of the image of an object on the retina of the eye depends on the distance of the object from the eye, the further away it is, the smaller the image. Size constancy decreases as distance and background information available to the subjects decreased. Size constancy occurs because both the object and its background change together as the distance of the object changes. Perpetual size constancy results when an object and its background change together so that the relationship between them stays the same.

## **13.0 CONSTANCY OF BRIGHTNESS**

Visual objects also appear constant in their degree of whiteness, grayness or blackness even though the amount of physical energy reflected from them may change enormously. Our experience of brightness stays relatively constant despite great changes in the amount of physical energy reaching the eye. For example objects or surfaces that appear white in a bright light are still perceived as white in dim illumination. Similarly what looks black to us in dim light still looks very bright in sunlight, white snow continues to look white even at night. The physical energy ratio between an object and its surround stays constant. Unchanged brightness ratios give constant brightness, experiences or brightness constancy.

## **14.0 DEPTH PERCEPTION**

We are able to make use of information or ones in sensory input to 'generate' the three dimensional world that we see. We are able to see depth because of the cues received by each eye separately – the monocular (one eyed) cues we get from both eyes working together – the binocular (two-eyed) cues.

## **15.0 MONOCULAR CUES FOR DEPTH**

Monocular cues are those which can operate when only one eye is looking. These cues are the ones painters can use to give a three dimensional experience from a flat painting. The eye picks them up and we perceive depth.

### **LINEAR PERSPECTIVE**

Objects that are far away project a smaller image on the retina than do nearby objects. In addition, the distances separating the images of far objects appear to be similar and the tracks seem to run closer together until they appear to meet at the horizon.

## **16.2 CLEARNESS**

In general the more clearly we can see an object, the nearer it seems. The distant mountain appears further away on a hazy day than on a clear day because the haze in the atmosphere blurs the fine details so that we see only the largest features. Ordinarily if we can see the details we perceive an object as relatively close, if we see only its outline, we perceive it as relatively far away.

## **17.0 INTERPOSITION**

Interposition occurs when one thing obstructs our view of another. When one object is entirely in sight but another is partly covered by it, the first object is perceived as being the nearer

## **18.0 SHADOWS**

The pattern of shadows or highlights in an object is very important in giving an impression of depth.

## **19.0 GRADIENTS OF TEXTURES**

A gradient is a continuous change in something – a change without an abrupt transition. The regions closest to the observer have a coarse texture and many details. As the distance increases the texture becomes finer and finer. This continuous gradation of texture gives the eye and brain information that can be used to produce an experience or perception of depth.

## **11.0 MOVEMENT**

Whenever you move your head you can observe that the objects in the visual field move relative to you and to another. If you watch closely you will find that objects nearer you than the spot at which you are looking – the fixation point – move in a direction opposite to the same direction in which your head moved. On the other hand objects more distant than the fixation point move in the same direction as your head movement. Thus the direction of movements of objects when we turn our heads can be a cue for their relative distance. Furthermore, the relative amount of movement is less for objects than for near ones.

## **ACCOMMODATION**

Accommodation involves adjusting the shape of the lens to bring the image of an object into focus on the retina. This adjustment is done by muscles which are attached to the lens in such a way as to allow it to thicken when they contract. When the lens thickens nearby objects can be focused on the retina. For distant objects the muscles relax allowing the lens to become thinner so that more distant objects can be focused on the retina. Since there are sensory receptors in muscles which signal their tension we may be able to use this sensory input about muscle relaxation and contracting as a cue to depth. However, there is controversy over whether accommodation really provides a depth cue. But since the two eyes are separated from each other by about 65mm they get slightly different views of the object and the two images are not exactly the same. Moreover the images are more dissimilar when the object is close than when it is far in the distance. In other words, within limits, the closer an object is, the greater the retinal disparity. The correspondence between distance and the amount of disparity is the

reason retinal disparity can be used as a depth cue.

## **CONVERGENCE**

It is known that the retinal disparity serves very effectively as a binocular cue to the depth but it is not certain about another possible binocular cue. This is a cue from the sensory receptors in the muscle that turn and point the two eyes together. For the objects further away about 20 metres the lines of sight of the two eyes are essentially parallel. However nearer objects the eyes turn more towards each other, that is, they converge. The greater the convergence; the greater the tension in the muscles turning the eyes. Thus there is a relationship between muscle tension and distance of an object and sensory input from the tension receptors in the muscles may give us a cue to depth. However, there is controversy over the role of these sensory inputs as cues for depth perception. That is more distant objects can be focused on the retina since there are sensory receptors in muscles which signal their tension we may be able to use this sensory input about muscle relation and contraction as a cue to depth. However, there is controversy over whether accommodation really provides a depth cue.

## **BINOCULAR CUES FOR DEPTH PERCEPTION**

Many of the cues for depth require only one eye. In fact one eyed people under most conditions have quite adequate perception. Most of us look at the world with both eyes simultaneously and we are thus able to add the binocular cues for depth perception to the binocular ones. By far the most important binocular cue depends upon the fact that the two eyes – the retinas receive slightly different or disparate views of the world. Therefore, this cue is known as the retinal disparity.

## **RETINAL DISPARITY**

Retinal disparity is the differences in the images falling on the retinas of the two eyes. It can be explained by considering the geometry of the situation when the two eyes view an object. The fovea in the center of the retina is a much more sensitive than the rest of the retina. When we look at an object we fixate our eyes – point them in a manner of speaking so that the image of the object falls mostly on each fovea.

## **MOVEMENT PERCEPTION**

Adaptive behavior in the visual world requires us to perceive movement accurately. Suppose that car, motorcycles and bicycles are whizzing towards you, should you jump aside or should you leisurely stroll out of the way? If I am batting for the baseball team I must have good perception of movement if I am to spend the season on the bench or in the hospital. Perceived motion also occurs without any energy movement across the receptor surface. This type of motion is called apparent motion. Furthermore, the perception of real motion like all perception requires active elaboration and transformation of the sensory input.

## **REAL MOTION**

The perception of the actual physical movement of objects in the world is termed real motion perception. We can perceive very small velocities of movement. For instance, people can detect the movement of a luminous dot against a plain background when its velocity is about 0.1 inch per second and is about 20 inches away. Against a textured background movement perception is about 10 times better so that people can perceive the movement of a dot at the same distance when the velocity is only about a 0.01 inch per second. Our lower sensitivity movement without a background may be due to eye movements that interfere with movement perception. The background may improve movement perception because the eye can fixate on the background and therefore move less because additional information is provided by the relative motion of the dot with respect to the ground.

## **CONSTANCY OF REAL MOTION PERCEPTION**

In order to adapt to events in the visual world we need more than mere sensitivity to physical movement. We must also have movement constancy. The velocity of real motion must be perceived as unchanging despite changing physical conditions. Suppose you are in the grandstand watching stock cars race around an oval track; while the cars will show up on curves they will be going at about the same speed on the straight away in front of the grandstand as on the back stretch some distance away. We perceive the straight away in and the back stretch speeds at about the same despite the fact that because of the geometry of the situation the image of a car travels further over the retina in a given time when it is near than when it is far away. Motion constancy is a result of perceived velocity which depends on the rate at which an object moves relative to its background not on the absolute velocity of the image across the retina. Since the relationship between the object and its background stays relatively constant with distance as one changes, relatively constant the other does too – perceived velocity also remains fairly constant.

## **THE BRAIN COMPARATOR AND REAL MOTION PERCEPTION**

If we hold our eyes steady and an image moves across the retina, we perceive movement. The concept of a brain comparator has been postulated to explain how it is possible for us to differentiate between real motion of an object and motion caused by our own movement. The brain comparator is a system which compares information about muscle movements with movement of the retinal image. When an eye movement occurs and the retinal image moves, the movements signaled from the retina are fed into the comparator where they are matched against the information the comparator already has about eye movements. The brain comparator 'evaluates' the moving retinal image as due to eye movements and cancels the perception of movement. On the other hand if the comparator has no image moves over a stationary eye, the perception of movement is not cancelled.

## **APPARENT MOTION**

In contrast to real motion, apparent motion is movement perceived in the absence of physical movement of an image across the retina. In other words, with the eyes, head, and body steady and with no physical movement of an object is still perceived. Many kinds of apparent motion exist. The type

seen in the movies called stroboscopic motion is one familiar. Some other kinds of apparent motion are the auto kinetic effect, induced motion and motion in stationary pattern.

## **STROBOSCOPIC MOTION**

A movie projector simply throws successive pictures of a moving scene onto the screen. When you take the film and examine the separate frames you see that each is a still picture slightly from the preceding one. When the frames are presented at the right speed you perceive continuous smooth motion.

A small stationary spot of light in a completely dark room will appear to move if a person fixates on it for some time. This movement is known as an auto kinetic effect. Movements of the eyes have an influence on the auto kinetic effect but do not seem to account for it.

If a stationary spot or object is perceived a moving when its frame or background moves we speak of induced movement. For example, the moon is often perceived as racing through a thin layer of clouds. The movement of the framework of clouds 'induces' movement on the relatively stationary moon. Or if you are in a motionless train in a station and the train next to you starts to move you as may feel that you are moving too.

## **PERCEPTION LEARNING**

Eleanor Gibson has defined perception learning as 'an increase in the ability to extract information from the environment as a result of experience or practice with stimulation coming from it (Gibson 1969).

Gibson gives a number of examples which show how perception can be molded by learning. She cites the competence of people who are trained in various occupations to make perceptual distinctions that untrained people cannot. Skill and artistry in many professions is based upon facility in making such subtle distinctions. The remarkable feats of blind people often matters of perceptual learning. It is not that their absolute threshold or sensitivity to non-visual physical stimulation is greater than that of sighted people. Instead blind people learn to extract from the environment information that sighted people do not ordinarily use. For instance, many blind people move around in the world avoiding obstacles with surprising ease. Blind people learn to perceive the sound echoes of their football and cane tapings that bounce back from objects in their paths. Some blind people even learn to distinguish among various shapes and textures of surface by perceiving the difference in sound echoes.

The ability to adopt in inverted world experiments seems due mainly to plasticity in the perception of bodily position or pre-perception. People are able to adapt their movements in reversed visual worlds because they change their perception of bodily position to match the distorted visual perception. For instance, the perception of body position changes so that it 'feels' right to return down for an object that is visually perceived a up.

## **SENSORY DEPRIVATION**

When people or animals are deprived of sensory input their perception of the world changes. These changes may last only for short time or they may, when the deprivation takes place early in life, be long lasting or permanent

## **SHORT TERM DEPRIVATION**

Modification of perception can be shown by depriving people of sensory experience for a few days or even a few hours if the deprivation is complete enough.

A few unfortunate people are born with a condition known as cataract in which the lenses of the eyes are clouded over, others may be born with it or develop it soon after birth corneas. These people can perceive large areas of brightness but they are blind in the sense that they have no useful detail vision. They can be helped by special training and in some cases operation can correct the problem. For instance, in case of cataract the lenses can be removed and glasses or contact lenses substituted for them,. Corneal transplant can sometimes be done to replace cloudy corneas. After the operation light can be focused on the retina and the eyes are ready for normal sight.

It would be an error to suppose that a patient whose sight has been restored to him by surgical intervention can thereafter see the external world. The eyes have certainly obtained the power to see but the employment of this power as a whole constitutes the act of seeing, still has to be acquired from the very beginning.

When bandages come off after the operation, these patients can visually recognize objects that were familiar to them through their outer senses. They can for instance, visually recognize objects such as telephones, chairs or spoons that they could not when they were blind. However, they have great difficulty with the visual recognition of 'new' objects. For example they find faces and letters of the alphabet very hard to recognize and their perception of such 'new' objects may never be normal. But as these patients visually experience the environment, perception gradually becomes more normal and this recovery is another example of plasticity of perception.

## **BRAIN PLASTICITY AND PERCEPTUAL PLASTICITY**

Much experimental evidence indicates that sensory deprivation and special experience during an early critical period can change brain cell activity. For example, kittens raised so that they see only spots of light have brain cells that respond to spots and not as is normal, to lines with certain visual space.

## **NATURE AND NURTURE**

Theorists who are called nativists, these who argue for nurture are known as empiricists. The nativists say that brain organisation is determined by the genetic codes therefore is innate. The perception that depends on this organisation is thus also innate. The nativists explain many of the changes in

perception as due to loss or attrition or inborn connections during critical periods. In other words, sensory deprivation or special sensory experiences during critical periods result in a loss of the brain connections that were environmental input or nurture for their maintenance. On their side, the empiricists argue that while genetic codes may provide a rough blue print, nurture interact with the genetic outline during critical periods to direct growth and cause the proper brain connections to be made. Therefore, according to the empiricists alterations in the environment during critical periods actually change the way the brain grows and the connections which are made.

### **MOTIVES, EMOTIONS AND EXPECTATIONS AFFECT PERCEPTION**

These are said to influence perception. When people are motivated or emotionally involved they tend to see what they want to see and hear what they want to hear. Our motives and emotions may also lead us to expect to perceive certain things.

In other words, we may be set to perceive the world in ways that agree with our needs and match our emotions. Hungry people for instance are said to see food and food – related things everywhere. A prejudiced person may selectively perceive other people in ways that support the prejudice. The greatest influences of motivation on perception are to be found in the perception of such complex events as social and interpersonal relationships. Physical objects do not allow us much freedom in the way we perceive them; everyone perceives them in much the same way. Even highly disturbed people see tables, chairs and bookcases in the usual fashion. On the other hand such social situations as parties, conventions and contacts with friends are often indefinite and ambiguous or perception of them are less definite and stable than perceptions of physical objects.

Expectancy, also known as set, refers to the idea that we may be ‘ready’ and ‘prepared for’ certain kinds of sensory input. Expectancy also has a large role to play in the way we perceive ambiguous situations.

### **ASSIGNMENT**

**What is attention and how does it illustrate perceptual processes? What directs our attentions?**

# THE DEVELOPMENT OF BEHAVIOUR DURING ADOLESCENCES, ADULTHOOD AND OLD AGE

## 1. CONCEPTION TO MIDDLE CHILDHOOD

The years from conception to middle childhood are gradual and stable. The middle childhood is gradual and stable. The middle childhood itself is a time for exploration and learning. It is a time when the world seems relatively predictable and even a little impersonal.

## 2. ADOLESCENCE

During this period physiological changes accelerate, sexual maturity arrives. Social relations become more intense and new cognitive capacities emerge. Adolescence is defined as the period from the beginning of sexual maturity (puberty) to the completion of growth. The physiological significance of this transition and the degree of stress which accompanies it differ from one society to another.

## 3. BIOLOGICAL DEVELOPMENT

**Size Gain:** different parts and organ systems of the body mature at different rates. Body proportions mature rapidly during the growth spurt, which begins in girls between 7.5 and 11.5 years and in most boys between 10.5 and 16 years of age. Girls' height may increase by as much as 8 to 13 centimeters in a single year, boys as much as 10 to 15 centimeters. For an individual youngster, the period of most rapid growth lasts about 2 years. The beginning of the period is more variable than the end. Growth is complete in most girls by age of 16 and in almost all boys by age of 18.

## 4. MIDDLE CHILDHOOD

**Size Gain:** During middle childhood, a large part of growth can increase in e.g. length which peaks early during the growth spurt then subsides. (Some boys need longer trousers about every six weeks during this period.) However, acceleration of trunk length accounts is attained. Meanwhile, the head (and brain) and hands and feet have attained adult size quite early. There are many disproportions in growth e.g. noses and ears grow before jaws.

The growth spurt occurs approximately 2 years earlier in girls than in boys. When it begins however, boys gain and increase in muscle tissues, capacity of heart and lungs, systolic blood pressure, oxygen carrying capacity of blood and psychological indices of strength are also relatively greater. The physiological equality of boys and girls during middle childhood is interrupted first by earlier growth spurt of the girls and then by even more pronounced growth of boys. By age 14 on average boys caught up with and surpassed girls in size and strength.

## 5. SEXUAL MATURITY

Puberty (the centre ring event) of adolescence refers to the beginning of sexual maturity. The first changes are not easily observed. They take place in primary sexual characteristics and consist of gradual enlargement of the production organs: in females the ovaries and uterus, in males the penis and prostate gland (testes).

In girls puberty is usually dated from menarche (onset of menstruation) and for boys the emergence of pigmented pubic hair. These events do not mark the beginning of sexual maturation but rather a point midway in the process. Many girls remain infertile for another 12 to 18 months and their bodies are not fully sexually mature until they are in their twenties. Teenage pregnancies therefore often result in premature and other threatening conditions.

Secondary sexual characteristics are changes in appearance and body proportion in hair quality and distribution in voice and in girls breasts simultaneously occur. Both primary and secondary characteristics depend mainly on increase in activating hormones released by the pituitary gland which in turn has been stimulated by the hypothalamus. On the average, breast enlargement begins in girls at about 10 years of age with elevation of nipples and it continues for about 3 years with pubic hair appearing about a year later. In boys the voice deepens, facial hair appears and finally grows on chest.

There are individual differences among children in respect of maturing. A study carried out to establish whether there was any advantage for early matures tended to be self assured, poised, matter of fact and well modulated in their social interactions. They were more often seen as attractive and popular. The later maturing boys tended to be 'immature', tense, restless, talkative, bossy, attention getting and impulsive. On psychological tests they showed that they felt less adequate in general, more often dominated and dependant but rebelliously searching for autonomy. In girls there is not much difference.

## **COGNITIVE DEVELOPMENT: FORMAL OPERATION**

Somewhere around the age of 11 or 12, most children begin to advance to new period, the period of formal operations. Young people show the ability to reason according to logic. The period of cognitive according to Piaget:

### **SENSORIMOTOR PERIOD (2 years)**

Reflex patterns, intentional movements that can be repeated.

### **PREOPERATIONAL PERIOD (2 to 7 years)**

Unsystematic reasoning though characterized by egocentrism, animism and magical thinking.

### **PRECONCEPTUAL STAGE (2 to 4 years)**

Rapid development of language

### **PERCEPTUAL OR INTUITIVE STAGE (2 to 4 years)**

Reasoning appears but is pre-logical.

## **CONCRETE OPERATIONAL PERIOD (7 to 11 years)**

Systematic reasoning, thought reversible but limited to child's area of concrete experience

## **FORMAL OPERATIONAL PERIOD (11 years onward)**

Logical reasoning

## **MORAL DEVELOPMENT: RIGHT AND WRONG**

1. Obedience and punishment orientation
2. Naively egoistic orientation. Right action is that instrumentally satisfying the self's needs
3. Good boy orientation – social approval and helping others
4. Authority and social - offer maintaining orientation – orientation to 'doing duty' and showing respect for authority
5. Contractual legalistic orientation
6. Conscience or principle orientation.

## **THE SENSE OF IDENTITY**

Erickson gives the establishment of identity as the major task of adolescence with role confusion to the correlation of an adequate sense of identity. Erickson (1968) also emphasizes adolescents' healthy need to explore diversity, culminating in what he terms fidelity. Fidelity refers to consistency and a mature commitment to some aspect of society. It is a long process that eventually develops from admired models, teachers, parents, screen stars, athletes or peers. Parents provide the most potent models. Both boys and girls are likely to develop positive, consistent self-perceptions when they see their parents as nurturing, effective, self controlled and reasonable. On the other hand, those with less war relationships with them are more likely to see themselves as changeable impulsive and inconsistent (Conger 1977).

## **SOCIAL DEVELOPMENT**

Adolescents usually begin to spend less time at home than before. Many find it hard to share feelings with their parents. Conflict tends to increase as teenagers become more assertive and their parents become more authoritarian (Steiberg and Hill 1977). Adolescents often act in very inconsistent ways. They are torn by compatible desires to be dependant and independent at the same time. In other words, they are in conflict between being told what to do and having the freedom to 'do their own thing'. During adolescence, group membership assumes more importance than at any other time in life. A peer group can provide stabilizing influence for young people who are in conflict with their families. The group can also give temporally some readymade answers to the burning question, 'who am I?' Teenagers feel great need to conform in order to be accepted. There is a distinct peer culture 'of the latest' dress and hair styles, music, language, issues and ideas. Conformity to these standards becomes almost compulsory at least in the United States and other Western countries. One signal of the

growing sense of self-consistency in older adolescents is their emerging freedom to be flexible about the trappings of group identity. They begin to dress and talk in more individual ways and to develop their own interests and ideas.

## **INTIMATE REALTIONSHPIS**

During the teenage years, heterosexual relationships emerge. Led initially by the girls (who enter puberty first) unisexual peer groups begin to convert to heterosexual groups. Today there is an overall trend towards a more liberal view of sexuality. Even 'unsophisticated' are exposed to sexual information, sexually provocative music, movies and so on. With the continuing drop in the age children reach puberty it is almost inevitable that several activities among teenagers have increased. In the Republic of China the usual age at marriage is about 25 for women and 27 for men.

## **ROLE CONFUSION**

Failure to establish role identity may have negative outcomes. Among them are:

1. Continued bewilderment period. Twenty year olds are 'at their prime' in strength, agility, reaction time and manual dexterity, but even in the fifties and sixties most people are still pretty healthy. Life patterns are less dependent on physical status during early and middle adulthood that either before or after. Muscular strength tends to be at its maximum between the ages of 25 and 39 but on average there is only about a 10 to 15% loss of strength to the age of 60. Manual dexterity may also decline although in skills that are highly practical the difference is not likely to be noticeable. Teher are changes in appearance due to weight redistribution, (waist grows and chest recedes, graying hair, receding hair lines, skin changes and even changes in the structure of the face).

The most specific change occurs in women at the menopause (the cessation of menstruation) which usually occurs between 45 and 55 and signals the climacterium or end of ovulation and reproductive

capacity. There is no such event in men whose reproductive capabilities declines more slowly. Many people maintain their vigour and health through their adult years by a combination of exercises, good nutrition and active outlook.

## **COGNITIVE DEVELOPMENT**

The cognitive functions of adults are mainly expanded versions of those see in adolescence. In that sense adult development in horizontal rather than vertical while we continue to learn throughout life, acquiring new knowledge, new knowledge, new ways of organizing our thoughts, there are no real breakthroughs in the adult years.

## **LEARNING AND MEMORY**

Psychologists who have looked at learning and memory often with depression have come up with:

- i. Alienation – a sense of belonging nowhere, neither receiving nor giving commitment

- especially not to what is viewed as ‘the establishment.’
- ii. Temporary identification with a splinter group – a political, religious or other group which requires total devotion and furnishes a readymade identity in place of one painfully drawn from personal encounters.
  - iii. Premature adoption of a readymade set of values, often those of one’s family without real integration and
  - iv. Escape thorough drugs, mental illness or suicide.

## **YOUTH**

The period of student hood has been termed youth (Kemiston 1968). Individuals at this period of life are homogeneous. For example, there is a broad spectrum of dependency – independence. Some college students live in dormitory regimes with few decisions to make, with roommates, meals and laundry provided and with freedom from the usual responsibilities to family and community. Others have to work to pay their own way, live at home with parents or in town rather than in dormitory and perhaps maintain family and other responsibilities. Student politics tend to reflect the prevailing mood of the country.

## **EARLY AND MIDDLE ADULTHOOD**

During this period, people direct their own lives. They are not basically dependent on them. These are the years of accomplishment and responsibility of work and family, of doing and belonging, years that most people tend to find more satisfying than any other time of life.

## **BIOLOGICAL CHANGES**

Biological change tends to be gradual during this long performance over the more mature adult years and researchers have discovered much greater decreases in some functions than others. Adults tend to have more difficulty organizing new material they learn. They also seem to have more difficulty retrieving from memory what they know (Arenberg and Robertson – Techabo 1977, Craik 1977). One way of investigating retrieval problem in older persons is to compare performances on recognition and recall memory tasks  
e.g. multiple choice versus recall of words.

## **MORALE DEVELOPMENT**

Adults reach what (Kolhberg 1973) calls cosmic perspective level. By this, he means we begin to see our lives as finite from some infinite perspective and value life from this stand point.

## **INTELLIGENCE**

Does intelligence decline during adulthood? Studies have shown that intelligence does not simply

reach a peak about age 20 and then begin to deteriorate. In some areas of functioning, there is little or no drop until the late sixties or so; in others the decline begins early. Some kind of intellectual abilities show a moderate increase through the middle years as learning and maturity progress. Among these are the aspects of intelligence based on refinement of concepts and the application of old problem solving skills to reorganize knowledge into new ways of thinking often show a trend toward a mild decline over the middle years. (In old age there tends to be an accelerated decline in almost all intellectual functions.)

## **CREATIVITY AND PRODUCTIVITY**

Our technological and cultural heritage is built on creative contributions. In fields where a unique and original breakthrough is likely to involve an entirely fresh insight such as Mathematics or Physics, the most outstanding contributions tend to be made early. Such creative works can probably be produced only by young people who are not yet too experienced with the 'givens' of accumulated knowledge e.g. Einstein (26) theory of relativity; Newton (28) calculus; Galileo (26) falling bodies etc. However, where excellence requires a rich foundation of accumulated development the peak years tend to be later e.g. the achievements of a historian or philosopher tend to occur mainly in later life. Thus many artists, composer, musicians, investors, writers and scholars continue to be creative well past the age of retirement e.g. Erickson and Piaget (1902 and 1896).

## **DEVELOPMENTAL TASK OF ADULTHOOD**

Adulthood might be called the age of doing, an era of accomplishment and responsibility. One author Robert L. Habighurst (1972) on the basis of actually observing people found that early adulthood was a period of beginnings, finding and marrying a mate, starting a family, managing a home, embarking on an occupation, entering the arena of public responsibility and finding a compatible group of friends. This is a period when the process of broadening and deepening the activities, skills and relationships established earlier take place. During the middle year, adults become preoccupied with rearing teenage children and introducing them to a satisfying young adulthood, achieving a stable position in social and civic roles, developing a career, deepening the friendship of the marriage, accepting the physical changes that come with advancing years and adjusting to the reversal of roles that occurs when parents become elderly.

## **VOCATIONAL DEVELOPMENT**

The world of work is so important that adulthood is really defined in relation to eligibility for employment. Occupational status of the family head largely depends on social status which in turn relates to a wide network of values, customs and expectations. Job progression is minimal. A third of adult workers are engaged in an orderly career progression. Some workers can anticipate promotions at predictable intervals if they do their jobs reasonably well, for others promotion depends upon new skills or more mature judgment. For the most part, the evidence suggests that young people tend to do better when their mothers are following their own indications whether that means working or remaining at home. The degree of similarity between partners also tends to be related to the stability of the marriage. Marital satisfaction tends to increase after the children depart (Rollings and Feldman).

## **OLD AGE**

Common retirement age is 65 years which is arbitrary; some people are 'old' at 65, some sooner and some much later, (55 for females and 60 for males).

## **PHYSICAL CHANGES**

Hair whitens and becomes sparse (although in women it may for the first time begin to grow darker, coarser facial hair). The skin dries and wrinkles, teeth are lost and gums recede, the facial configuration changes, the spine bows. Strength and agility are impaired and the bones become brittle, breaking easily and mending slowly. Thickening arterial walls slow blood flow and raise blood pressure, lung capacity decreased, digestion and elimination become problematic, sensory processes become less acute. Older people will spend more fitful nights with less time in deep sleep and take more catnaps during the day. There is a slowing down of behavior. For some people the physical changes of old age are devastating and depressing.

## **COGNITIVE CHANGES**

A number of studies have shown that general intelligence scores tend to drop in the years past 40. However, for those in good health, specific tests such as general information and vocabulary often do not decline at all and may even show increment. Persons of higher intelligence tend to hold up best in these areas. Old people often seem forgetful. For most people cognitive abilities tend to hold up well.

## **DEVELOPMENT TASKS FOR OLD AGE**

Ego integrity means older people can maintain their sense of wholeness and adequacy, satisfied that they have done a pretty good job of living despite in gross dissatisfaction with one wishing it were possible to do it over again and knowing that it will never be possible.

## **RETIREMENT**

Adjustment to retirement is a crucial task for old age. It takes away the props of daily commitment, income, social interaction and one's self image as a contributing member of society.

## **SOCIAL INFLUENCE AND HUMAN RIGHTS**

### **1.0 A DEFINITION OF SOCIAL PSYCHOLOGY**

Social psychology is the scientific study of ways in interaction. Interdependent and influence

among persons affected by their behavior and thoughts.

## **THE DOMAIN OF SOCIAL PSYCHOLOGY**

Social psychology is a social science. It differs from the other social sciences namely sociology, anthropology and political science in that the others tend to study larger groups. They also differ in their levels of analysis. Thus social psychology studies such topics as attitude. However, in this part only social influence, social perception and social relationships will be looked at.

The area of social influence asks how people are affected by the presence, opinions, or behavior of others. Social psychologists seek to understand the dynamics of social influence to understand the nature of human interaction.

When you interact with another person you quickly form an impression of the kind of person he or she is. In addition to forming impressions about the kind of person you are dealing with, you also make inferences about the cause of his or her behavior. The social psychologist study how people form their impressions and make inferences about the causes of behavior because the way we perceive other people affects how we act towards them and consequently how they behave towards us. Social perception is thus a basic ingredient of human interaction. As highly social animals we form relationships with others. We choose friends, join clubs, go on dates, get married and divorced and so on. The study of social relationships seeks to discover the answers to questions ‘why are two people attracted to each other? ‘Why might we remain in a relationship which others are taking advantage of us? ‘Why do relationships fall apart?’

### **1.1 METHODS OF SOCIAL PSYCHOLOGY**

Social psychologists use many methods in their attempt to understand human interaction but perhaps their primary method is experiment. The experiment is most powerful research tool available because it allows us to make inferences about the cause and effect. If we randomly assign subject to two different groups one receiving an independent variable manipulation and then observe differences in behavior between the two groups, we may be confident that these differences were caused by our manipulation. This is true because the nature of the experiment allows us to control all other factors which might influence behavior, the experimental in the presence of other people affects behavior in many ways. The various groups which we belong will have a major role in determining our attitudes and actions in a variety of situations.

### **1.2 SOCIAL FACILITATION**

Athletes – runners seem to perform better when they are actually competing with someone than when they are running alone against the clock. One of the first experiments in social psychology was conducted to investigate to investigate this interesting fact. In the 1890s Norman Triplett observed that cyclists rode faster when they were in competition than when they rode alone; in his laboratory and experiment showed that children wound a fishing reel faster when they knew there were others observing than when they thought they were unobserved. For many years it was assumed that the presence of others would always improve performance and so these effects were labeled social facilitation and many experiments were conducted to learn more about the process. However, some experiments showed that performance was not always enhanced. For example, in the 1960s, John F. Dashiell found that while subjects would respond at a higher rate when other people were present, their errors also increased.

The differing results of social facilitation manipulation are the only way in which the group differs.

Much of social psychological research is conducted in the laboratory, primarily because there it is much easier to control all the variables. But research outside the lab-field research is becoming ever more frequent. There are several reasons for this. One is an increasing concern that we have been developing a 'social psychology of college sophomores' since they often serve as subjects in laboratory research. Because college students are so typical in many respects (in age intelligence, education and socioeconomic background) for instance results from experiments using them as subjects may not be representative of people in general. A second reason is that laboratory subjects know that they are in experiment and their behavior may be affected by this knowledge. Perhaps people would behave quite differently 'out in the world.' And finally, due to the fact that laboratory experiment often must involve some deception and none of us like to deceive people, more and more researchers are trying to find ways to conduct their experiments without their experiments without deception in field settings.

### **1.3 SOCIAL INFLUENCE**

Being a member of a group or simply being experiments were finally reconciled by Zajonc (1965). He proposed that the presence of others increases an individual's general arousal level which in turn enhances performance of dominant – meaning strong and well learned responses. If dominant responses are required, performance will suffer. For example a well trained musician would according to this idea be expected to perform better when others are present, but a beginning piano student would be expected to make more mistakes while playing in a recital than when practicing.

## **2.0 CONFORMITY AND DEVIANCE**

Conformity is the term that refers to individual changing their belief or behaviors so that they become more similar to those of other group members. Conformity may also imply taking the form of public compliance, going along with group pressure; in this case private beliefs remain unchanged.

Deviance occurs when people do not change their beliefs and behaviors to conform to those of the group.

### **2.1 CONFORMITY IN EVERYDAY LIFE**

Our beliefs and actions reflect the groups we belong to now and those we have belonged to in the past. Groups exert pressure on us powerfully and persuasively through group norms. A norm is a standard of behavior or thought that is expected of group members. These norms or rules set by the group or suffer the social consequences. Adolescents and young adults for instance, may be forced to leave home if they do not conform to the major attitudes, beliefs and behavior patterns of their family groups. The person who marries someone of another religion or race may suffer ostracism or other social punishment from the groups whose norms have been violated. Even hair and dress styles if they deviate from the group norms can be the occasion for social demands and pressure to 'get in line.' In fact most groups do not tolerate much deviation from their norms before sanctions are brought to bear. Groups have norms about the roles their members play in life. A role

is a behavior expected of a person who holds a certain position or status within a group. We each belong to hundreds of groups and have many statuses and positions. Some status are very broad and inclusive, such as our sex or age, some are specific such as mother, son, teacher, student, mechanic, accountant, basketball player and so on. For each of these statuses certain behaviors are expected to act in certain ways as are students; centres are expected to behave differently from guards as so on, for each status. The behaviors or roles that are acceptable for each status are specified by the group. In other words, the group norms spell out what we can and cannot do when playing certain roles.

## **2.2 CONFORMITY IN THE LABORATORY**

One reason social psychologists do laboratory experiments is to discover some of the factors which may affect real life social behavior. The advantage of an experiment is that possible factors can be studied in a controlled situation; the disadvantage is that laboratory conditions are often simplified and artificial and therefore generalization to everyday life must be made cautiously. Experiments on conformity have given us useful insights into the conditions under which it is likely to occur and a number of these may with due regards to the problems involved be applied to what we do outside the laboratory.

## **2.3 OBEDIENCE**

Another aspect of conformity is obedience to authority. The authority in most cases can be thought of as a representative of a large group which is applying pressure such as a military officer who represents the entire military force. Obedience to authority is not always bad; it is when pressure for obedience goes against higher ethical principles.

## **2.4 SOME REASONS FOR CONFORMITY**

There are four main reasons namely; social comparison, avoidance of social disapproval, the need to be liked and accepted and the reduction of cognitive dissonance.

## **3.0 SOCIAL COMPARISON**

It involves situations which are ambiguous and in which we do not know exactly what is right and expected opinion in such instances and we look at the behaviors of people who are similar to us in deciding what to do.

## **3.1 AVOIDANCE OF SOCIAL DISAPPROVAL**

It occurs when we conform to avoid censure or punishment or to be liked and accepted because of a strong need to be accepted a young person may be especially prone to conform to group norms concerning clothes, drinking, drug use and sexual behavior.

## **4.0 COGNITIVE DISONNANCE**

It refers to a conflict of thoughts. It arises when two (or more) ideas do not go together and thus clash. Most of us are strongly motivated to reduce dissonance, that is, 'to have ideas fit together.'

## **5.0 HELPING BEHAVIOUR**

Social influences have much to do with our readiness to help others. Under some conditions, the presence of other conditions helping is enhanced by the example set by others.

## **6.0 PROMOTION HELPING**

The behavior of others provides cues which aid us in deciding what to do. In ambiguous situations we watch what others do. Imitation of a helping model is one of the strongest factors promoting helping. But in other conditions, helping is enhanced by the example set by others.

## **7.0 SOCIAL INHIBITION**

Other research on helping behavior in various emergence situations (for instance reporting a theft or producing help for a person having an epileptic seizure) has shown that intervention is an inverse function of the number of bystanders. This effect has been interpreted as being due to a diffusion of responsibility. In other words, people in groups expect another member to help in an emergency. The mere presence of a number of people in these situations makes it less likely that any one person will assume the responsibility for helping. Because of the effect of diffusion of responsibility, the safest number of bystanders in an emergency may be one.

Another artificial factor influencing people's tendency to intervene is whether or not the situation is perceived as an emergence requiring assistance. A person's perception of a situation as an emergence depends on his or her observation of how others are reacting. Since group members may be concerned about looking foolish or attempting to remain cool and unperturbed a person may not receive cues from others in the group that the situation is an emergency. Thus as individual in a group may be less likely to perceive the situation as an emergence requiring intervention.

## **8.0 SOCIAL PERCEPTION**

Our perception of others' personalities, motives and feelings guide us in deciding how we will respond to them and what sort of relationship we want to form with them. Another major aspect of social perception has to do with explanations we develop as to why people do certain things and why they might be expected to do in future interactions. This process of interpreting the actions of others is called attributions.

### **8.1 IMPRESSION FORMATION**

One helpful but often risky method of forming an impression about a person is to rely on the stereotypes or sets of ideas we may have about certain groups of people. For example you may believe that men are aggressive or that artists are eccentric, such beliefs will affect the impression you form of manner of an artist whom you meet. The obvious danger in this technique is that not everyone in that group will fit the stereotype so that your impression may be inaccurate. It is entirely possible that the men you just met is not aggressive and the artist down the street is not eccentric. You might for example, assume that people who are assertive are also ambitious and that people who are happy are also friendly. The study of these assumed relationships among traits is called implicit personality theory. We generally give more importance to information concerning positive traits that others might possess. Each of the factors we consider affects the information when forming an impression of another person.

People form overall impressions by determining that an individual has certain traits and by making some assumptions about how these and other traits may be related.

## **9.0 ATTRIBUTION**

To characterize other people in terms of certain traits, intentions, or abilities requires us to make attributions or inferences about them.

### **9.1 HEIDER'S NAÏVE' PSYCHOLOGY**

Social psychologists' interested in the attribution process began with Fritz Heider's (1958) theory which was concerned with how we attempt to identify the causes of other people's actions. Everyone is subject to environmental or external forces such as pressures from other people or the difficulty of a task to be done. We are also subject to personal or dispositional forces such as our own abilities, motivations, attitudes and personality traits.

### **9.2 JONES AND DAVIS: A THEORY ABOUT PERSONAL ATTRIBUTIONS**

These two scholars focused primarily on how internal or personal attributions are made. In this theory behavior is seen as involving choices and intended effects on the span on an individual. A perceiver is said to take into account not only what other person does but also what that person might have done. What a person does, that is, the chosen position has many outcomes or effects. Any of these unchosen actions are the same or common effects if it had been chosen. Some of the effects of the chosen and unchosen actions are the same or common effects which yield clues regarding the intentions of another person. For example, a student might choose studying in the library rather than playing tennis. The chosen action visit to the library and the unchosen action, visit to the tennis court have common effect of getting the student out of his or her room. However, this common effect is of little value in understanding why the visit to the library was chosen over the visit to the tennis court. One of the non-common effects of these two activities is that playing tennis gives the body some good exercise while sitting in the library may exercise the mind. Compared with the knowledge of common effects, knowledge of the uncommon effects would be the perceiver of more information about the student's intention in going to the library rather than the tennis court.

### **9.3 KELLY: A THEORY ABOUT INTERNAL OR EXTERNAL ATTRIBUTIONS**

Harold Kelly's (1967, 1973) attribution theory also grow out of Heider's original work. The main concerns of this theory are now we determine whether an action is caused by internal or external forces. According to Kelly there are three basic forces that we use in making influences regarding something another person does or says. First we depend on consensus information, that is, the extent in which other people respond to the same stimuli in the same manner as the person being judged. The second type of information we use is the consistence of the response over time situations; consistency refers to the extent to which the particular response occurs whenever a particular stimulus or situation is present. Distinctiveness is the third important factor in making attributions; this refers to the extent to which the person being judged responds differently to different stimuli or situations. Distinctiveness is high if a person makes a particular response only to a particular stimulus or situation.

## **9.4 SELF ATTRIBUTION**

Ben, (1967, 1972) suggests that when we want to make attributions about our own behavior we become observers of that behavior and make attributions much as if we were observing someone else. Therefore, with our behavior we would first determine whether the environments caused the behavior through some strong external force. If this does not seem likely we would then assume the behavior occurred because of some internal motives or personality traits.

## **10.0 SOCIAL RELATIONSHIPS: INTERPERSONAL ATTRACTIONS**

In general we like people to the extent that our interactions with them are rewarding or reinforcing.

### **10.1 PROXIMITY**

One factor which has been shown to affect the degree of attraction one person feels for another is physical closeness or proximity.

### **10.2 ATTITUDE SIMILARITIES**

Survey studies have shown that friends and marital partners tend to hold similar attitudes on many topics.

### **10.3 PHYSICAL ATTRACTIVENESS**

In a research including personality factors and intelligence, the date's physical attractiveness was the only attribute which affected liking and desire for future dates. The powerful effect of attractiveness on liking may be due to a tendency to attribute other desirable characteristics to attractive people. This is an example of a positive halo effect – given a few positive characteristics of a person we tend to form a generally favorable opinion of the person or vice versa.

## **11.0 THE DEVELOPMENT AND MAINTENANCE OF REALTIONSHPIS** Social exchange theorists have been especially useful in describing the nature and dynamics if interpersonal relationships.

### **11.1 SOCIAL EXCHANGE**

John Thibaut and Harold Kelly have proposed a social exchange theory as a framework for thinking about social relationships, (Thibaut and Kelly 1959, Kelly and Thibaut 1978). This theory emphasizes the fact that two people engaged in a relationship become (to a greater or lesser extent) dependent upon each other for the quality of outcomes they experience from the relationship.

### **11.2 THE GROWTH AND DECLINE OF REALTIONSHPIS**

George Levinger and J. Diedrick Snoek have suggested a framework for describing the development of relationships based upon social principles (Levinger and Snoek 1972). This framework points to the degree of involvement as the crucial distinguishing characteristic of various types of involvement beginning with the most superficial level, unilateral awareness.

At this stage, beginning with most superficial level, unilateral awareness before any interaction occurs, overt characteristics such as physical attractiveness may be particularly important. These act as indicators which help a person make assessments whether the relation with the other will be rewarding in the future.

The next level of involvement surface contact occurs when the two individuals begin to interact. Typically, these interactions are governed by general cultural norms specifying appropriate behavior and social etiquette. These interactions allow the individuals to ‘explore’ the relationship by sampling the outcome which each receives from the various combinations of behaviors each is capable of performing. At this stage, a particular important function is served by the process of self-disclosure. Self-disclosure is the process through which one person lets himself or herself be known by another. The decision each individual makes about revealing thoughts, feelings and past experiences to the other have much to do with how far the relationship will develop.

If the partners find their interaction in the surface contact stage rewarding and promising, the relationship may progress to the stage of mutuality. At this stage each individual begins to acquire some feelings of responsibility for the outcomes of the partner receiving in the relationship. Each now acts in such a way as to maximize both his or her own and the partner’s outcomes.

## **12.0 JUSTICE IN SOCIAL RELATIONSHIPS**

GERALD Leventhal (1976) suggests three ‘justice rules’ used in making judgments about the fairness in social relationships. These include a contributions rule based upon the investment each person makes in the relationship; a needs rule which reflects the relative needs of individuals and an equality rule which requires that outcomes be distributed equally among participants in a relationship.

### **12.1 THE CONTRIBUTIONS RULE AND EQUALITY**

The contributions rule is most frequently identified with the concept of equality. According to the equality principle, a relationship will be considered fair when all individuals involved receive outcomes proportionate to their respective contributions (inputs) to the relationship.

### **12.2 NEEDS RULE AND SOCIAL RESPONSIBILITY**

A second justice rule states that outcomes should be distributed in accordance with the relative amounts of individual need. This justice rule is embodied in the norm of social responsibility by which we are encouraged to respond to the legitimate needs of others. Under this rule a fair outcome distribution is one which meets people’s legitimate needs to avoid hardship and suffering.

### **12.3 EQUALITY RULE**

This rule simply states that outcomes should be distributed equally among participants in relationship irrespective of individual contributions or needs.

### **12.4 WEIGHING THE JUSTICE RULES**

The three justice rules often conflict. For example, those individuals who would receive high outcomes under the needs rule are often those who are not able to contribute much in the way of inputs. Individuals whose poverty places them in great need of assistance often lack education and skill which would allow them to make productive contributions.

## **13.0 CROWDING**

Objectively the term ‘crowding’ refers to the physical situation of high density crowding which is usually considered to be bad. It is said to cause psychological maladjustment, family and social

problems.

### **ASSIGNMENT**

**The morale, social and cultural context of psychology is significant at work. Is this assertion true? Discuss.**

## **2.0 WHAT IS A PSYCHOLOGICAL TEST?**

Tests are a major way of measuring or assessing people's behavior and abilities. In other words they are tools for psychological assessment. They range from open-ended situations which use a standard set of stimuli (such as set of pictures) to bring out highly individualistic responses to very structured situations in which individual responses are much more restricted and are clearly right or wrong. Psychologists also use naturalistic observations of behavior in real life settings, interviews and case histories.

Psychological tests are no more or less than samples of real behavior which, because they are standard and repeatable provide short cuts to understanding individual differences. These tests are more useful than just any samples taken at random. They derive their special value by virtue of being:

### **2.1 COMPARABLE**

That is the procedures are precisely specified and testers are trained to follow the rules exactly. Results can therefore be compared across time, testers and subjects.

### **2.2 OBJECTIVE**

That is the rules for scoring are spelled out and agreed upon and the personal biases of testers are therefore largely overcome.

Selected to tap individual differences – that is because the test situation is standard; differences in responses reflect differences in people.

### **2.3 INTERPRETABLE**

That is on the basis of a body of research findings and clinical experience the trained psychologist can get more information from the test's sample of behavior than a lay person can. In addition many (but not all) psychological tests are:

### **2.4 STANDARDISED**

That is, they have been administered to a representative sample of population. They will be used with and norms (distributions of scores with which an individual's score can be compared) have been developed.

## **3.0 KINDS OF TESTS**

**ACHIEVEMENTS TESTS** – measure the skills such as reading and arithmetic that people have acquired and the information they have learned. Standardized achievement tests have been developed for the various educational levels from preschool to college.

### **3.1 ABILITY TESTS**

An ability test is a test of potential rather than of achievement. It is a test of what the individual can learn, not what he or she has learnt. It does not uncover anything like 'innate potential' that is the learning potential with which an individual was born. Even the best ability test can only measure what a person does on the test so that in a sense any test is an achievement test. Also, a test of ability

presumes that a person has had adequate opportunity to learn certain things required for the test – the language for example. However, ability tests are constructed to minimize the effects of differences in achievements among the test takers and to maximize the chances of detecting differences in the potential for achievement.

### **3.2 PERSONALITY TEST**

A personality characteristic is some way in which a person normally or usually responds emotionally and cognitively to another person, a thing or situation. Some measures interest, these are especially valuable in conjunction with vocational aptitude tests.

Some clinical tests attempt to assess understanding thought processes and perceptions and are of special help in understanding individuals who suffer from behavior disorders.

### **4.0 CHARACTERISTICS OF A GOOD TEST**

To make wise use of tests we need to use not only the right test but good one. Tests vary considerably in quality.

#### **RELIABILITY**

A good test should be highly reliable; this means that the test should give similar results even though different people score the test, different testers administer it, different forms are given or the same person takes it at two different times. Reliability is usually measured by a co-relational method in which two sets of scores are compared. For example, a new test might be administered twice to a group of children and a correlation is obtained between the first and second sets of scores. Psychological tests are never perfectly reliable since real and meaningful changes do occur in individuals during their lives. The good intelligence tests give reliability correlation coefficients in the neighborhood of 0.90 (where 1.00 indicates perfect correspondence and 0.00 indicates no relationship between the scores). Not all tests especially personality tests achieve such high reliability. When they do not, we must be aware of this and use the test results very cautiously as they have considerable potential for error.

One important way in which reliability is achieved is by adhering to a standard procedure in administering and scoring the tests.

#### **4.1 VALIDITY**

In addition to being reliable a good test must be valid. This means that it measures well what it is supposed to measure. Put in another way, the test result should have a strong correspondence with some criterion or standard which reflects what is being measures. Scholastic aptitude test for example usually correlates with college grades (the criterion). Similarly a valid test of vocational aptitude would correlate with (that is predict) how well a person performs in an occupation. When we have good measures of what we are trying to use the test for (and obtaining these measures is often the most difficult job of all), we can set about developing valid tests.

## **4.2 NORMS**

Standard tests have norms based on the scores of a group of persons to whom the test has been given. A norm is a set or distribution of scores obtained from a group of representatives of the population for whom the test is intended. Once a norm is established, the scores of other people who take the test can be compared with it.

## **4.3 DECISION FROM TESTS**

Tests are frequently used in personnel selection by schools and employers choosing from a group of applicants. Colleges almost universally require scores on an ability test like the S.A.T (Scholastic Aptitude Test).

## **4.4 CONTROVERSIES ABOUT TESTS**

In recent years heated objections have sometimes been raised to the role of basing decisions affecting people's lives on the results of psychological tests. In some instances intelligence or personality tests have been banned from public school systems. Three principal arguments have been advanced:

- i. Tests are an invasion of privacy
- ii. Tests are often unfair to individuals who are culturally deprived or culturally different from the general population
- iii. Tests do not always predict what they are supposed to.

## **5.0 THE MEASUREMENT OF INTELLIGENCE**

The term intelligence is somewhat misleading for it implies that intelligence is a single, pure ability which varies in amount, actually most theorists' view intelligence as consisting of many abilities. The abilities sampled in an intelligence test are mainly of the kind required in formal education; many other important abilities are not included.

### **5.1 THEORIES ABOUT INTELLIGENCE**

Most of us use the word 'intelligence' rather formally in our conversation.

### **5.2 FACTOR THEORIES**

Is there a general intelligence, a coherent and singular trait, is there just a collection of independent abilities that somehow add together or is the truth somewhere in between? This question has been debated for many years.

### **5.3 G – FACTOR THEORY**

This is a name to the theoretical position that intelligence is composed of a single, unitary or general (G) factor. This position stresses the tendency for all cognitive measures to be related to one another. The theory was proposed and defended by the British Psychologist Charles Spearman in the early years of twentieth century and continues to be influential today. Generally speaking,

intelligence tests which yield a single score are built on this theoretical foundation.

On the other hand, a number of theorists view intelligence as made up of a number of separate aspects or factors. These theorists make use of statistical technique known as factor analysis. The basic idea of factor analysis is to compute correlation coefficients among the various subsets one has decided to include in an intelligence test. Subsets that correlate with each other subsets form a cluster and are said to represent a common factor. By looking at the subsets forming a cluster psychologists decide on the nature of the factor. One problem with this approach is that different methods of factor analysis yield somewhat different results.

Another problem is that the technique does not help psychologists decide what subsets to include. If a psychologist decides to include a test of athletic skill an athletic factor will probably be found but does not indicate that the factor is really part of 'intelligence'. Group factor theory, proposed by T.L. Kelly in the 1990s maintains that there are a moderate number of distinct primary factors of about equal importance which together make up intelligence. A prominent proponent of group factor theory was Thurstone, a factor analyst who developed the Primary mental Abilities Test (PMA). The PMA is composed of subsets measuring comprehension, word fluency, number concepts and skills in handling spatial reasoning.

The three dimension theory (J.P Guilford 1968) is built on a massive analysis of a great many existing tests. It has resulted in the cubical model which has 120 factors in intelligence. Each factor is represented by a cell in the cube and is some combination of three dimensions: (1) five kinds of operations, (2) six kinds of products and (3) four kinds of content ( $5 \times 6 \times 4 = 120$ ). One or more tests have been devised to measure most of these. Guilford's concept of intelligence also includes what he calls divergent thinking which is closely related to creative or original problem solving as opposed to convergent thinking which is involved in solving problems with a single correct answer.

## **5.4 FLUID AND CRYSTALISED INTELLIGENCE**

These are the major theoretical components of intellectual activity proposed by Raymond B. Cattell (1971). Fluid intelligence is general relation perceiving capacity which represents one's potential intelligence somewhat independent of socialization and education. It is composed largely of knowledge and skill and fluid intelligence which include the flexibility to organize and reorganize concepts. It is thought to peak early and begins to decline shortly after age 20. On the other hand, crystallized intelligence which is closer to scholastic ability may continue to increase for many years after the end of formal schooling.

## **INTELLIGENCE TEST**

Two of the best known individually administered intelligence tests are the Stanford – Binet and the Wechsler Adult Intelligence Scale (WAIS). Binet devised his test by age levels. The test was so constructed that an unselected population of children of a given Chronological Age (CA) obtains an average score or Mental Age (MA) equal to their C.A. An individual's performance on the test can

therefore, be expressed as a mental age score. The M.A / CA ratio yields the intelligence quotient or I.Q. If two children both obtain an MA of 5 years on an intelligence test but one child is 4 years old and the other is six obviously the younger child is brighter – much brighter in fact. To express such results in the form of I.Q we take the ration of MA to CA (in months) and multiply by 100 to eliminate decimals.

$$I.Q = \frac{MA}{CA} \times 100$$

The bright child mentioned above earns an I.Q of 125 and the slower child earns an I.Q of 83.

## **5.5 INDIVIDUAL DIFFERENCES IN INTELLIGENCE**

Differences in intelligence greatly affect people’s ability to cope with the demands of the society. This is particularly true in a technologically sophisticated mobile and competitive society. Nowhere are the demands as strict as they are during school where children are expected to master complex tasks at a pace determined by the development of the average child. Some children learn quickly, others slowly. While high intelligence is no guarantee of good life, low intelligence creates enormously difficult barriers to full participation in society and the attainment of a high standard of living.

### **6.2 MENTAL SUBNORMALITY**

People are appropriately regarded as mentally retarded if (1) they attain I.Qs below 70 on an appropriate intelligence test and (2) their adaptive skills are inadequate to cope with ordinarily daily tasks. During early childhood a person’s adaptation is judged by attainment of developmental skills such as walking and talking, during school, by academic skills and coping skills such as telling time and using money and during adulthood by vocational performance and social responsibilities.

## **7.0 CAUSES OF MENTAL RETARDATION**

There are two basically different underlying sets of causes of mental retardation. The majority of the retarded persons are these I.Qs fall by chance within the lower ranges of the normal curve. In the case of intelligence the factors probably include numerous gene pairs and a broad variety of environmental events. The catastrophe might be a genetic or chromosomal defect, a prenatal infection, severe deprivation of oxygen at birth or any of a host of other factors.

### **7.1 TREATMENT OF MENTAL RETARDATION**

Well educated parents who are confronted with the fact that their child is mentally retarded are likely to hope for a cure which will make the child ‘normal’. However, once serious damage has occurred there is no known way to undo it although special training can sometimes produce modest changes in IQ and adaptive behavior.

### **7.2 THE MENTALLY GIFTED**

At the top of the IQ distribution are the intellectually gifted. Unlike mental retardation there is no agreed definition of giftedness. Some investigators and school systems regard an IQ of 120 or 125 as indicating mental giftedness while others draw the line at IQs of 140 or even higher. An IQ of 115 to

120 for example indicates a level of mental ability which should enable most students to do at least average if not better than average, work in a good State University but it is by no means unusual.

### **7.3 GROUP DIFFERENCES IN INTELLIGENCE**

Everyday thinking is influenced by notions about the abilities of different group of people. Many people think that blacks and foreigners are not as intelligent as white Americans. Older people are regarded as wiser than younger people. Employers think women and young people are more suitable for certain positions, men and older people for other. Psychological research indicates that differences among groups do exist but often these differences are not the ones people imagine. Seldom are differences between groups nearly as large as the differences within the groups themselves.

### **7.4 SEX DIFFERENCES**

The overall IQs of males and females at any age are virtually the same. In part this is because makers of intelligence tests have deliberately omitted times on which there are sex differences. Sex differences are not very impressive in the early years although girls do show an early and consistent superiority in verbal behavior. Differences become more noticeable about the time of adolescence. Girls and women generally do better on verbal problems, on perceiving details quickly and accurately and on making rapid, accurate manual movements. Boys and men surpass females on spacial numerical and mechanical tasks. These differences correspond to our common impressions of what sexes do best.

### **7.5 RACIAL DIFFERENCES**

Caucasians and Asian Americans have tended to do well; black and Native Americans and Puerto Ricans have tended towards middle ground. The size of the difference has tended to vary depending on the part of the country, the social class and the educational levels of the population samples but the overall trends have remained relatively consistent.

### **8.0 SPECIAL APTITUDES**

There is no sharp line between intelligence tests and aptitude tests. We use intelligence tests to provide a general assessment of intellectual ability and aptitude tests to measure more specialized abilities required in specific occupations and activities.

### **8.1 SCHOLASTIC APTITUDES**

If we are trying to predict success in academic training we speak of scholastic aptitude test (SAT) given to students entering liberal arts colleges, similar tests for school of medicine, dentistry, nursing and several other professions and the Graduate Record Examination (GRE) for students who plan to do graduate work in a number of fields in the arts and sciences. The Miller Analogies Test (MAT) is also used to predict success in graduate school. Many graduate and professional schools require applicants to take an appropriate aptitude test.

## **8.2 VOCATIONAL APTITUDES**

Psychologists often refer to the abilities tested by intelligence and scholastic aptitude tests as cognitive abilities. Such abilities are necessary for getting along in school and a certain level of schooling is a requirement for entering certain occupations. Once a person is in an occupation however, these abilities become less important. In many occupations they may not count at all and even professions such as medicine require skills such as reading x-rays, judging the color of throats and feeling the lumps, using surgical instruments and tying sutures. Such physical and perceptual skills are known as non cognitive abilities.

Many tests are intended for specific jobs for example, tests for mechanics, a machine operators, assembly line workers and similar workers measure mechanical knowledge or ability to manipulate objects. These tests make up the general class of mechanical ability tests.

Psychomotor tests are a second general class of vocational aptitude tests. They involve such psychomotor tasks as manual dexterity, steadiness, muscular strength, speed of responses to a signal and coordination of many movements into a unified whole.

## **9.0 PERSONALITY MEASUREMENT**

Aptitude and achievement tests are tests of maximum performance, since people try to do their best on them. On personality tests, however, there is no right or wrong answers. Instead, the tester tries to discover what people usually do or what is typically of them. Personality testing is done for many reasons. A personal psychologist may want to select people whose personality characteristics might make them good sales people. A military psychologist may want to measure tendencies that make people unfit for a sensitive assignment. An experimental psychologist may want to measure anxiety in order to control its influence in experiments on perception and learning. A clinical psychologist often uses personality tests in the evaluation of behavior disorders.

## **9.2 QUESTIONNAIRES**

Pencil and paper tests of personality characteristics are usually questionnaires which ask questions or give simple statements to be marked 'yes' or 'no'. For example:

I generally prefer to attend movies alone

I occasionally cross the street to avoid meeting someone I know I seldom or never go out on double dates

In some questionnaires a person may also be allowed to answer 'doubtful' or uncertain. This kind of personality test was firstly widely used during World War 1 to weed out emotionally unstable drafters. The statements in the test were chosen to reflect psychiatric symptoms that might predict future emotional breakdown. They include such items as

I consider myself a very nervous person I frequently feel moody and depressed.

It is difficult to test the validity of a personality test. Therefore the best assumption is that a personality test is invalid until it is proved otherwise.

## **9.2 MINNESOTA MULTIPHASE PERSONALITY INVENTORY (MMPI)**

One way to assess personality is to look at the content of what people say about themselves. Quite a different way is to ignore the content but rather to match the pattern of the person's responses with pattern of answers given by groups of people with known characteristics. This approach produces personality tests with empirical validity. A few such tests are available. A good example is the Minnesota Multiphasic Personality Inventory or MMPI (HATHAWAY AND McKinley 1951, Dahistrom, Welsh and Dahistrom 1972). Another is California Psychological Inventory CPI (Gough 1969).

## **9.3 CALIFORNIA PSYCHOLOGICAL INVENTORY**

While CPI is similar to MMPI in concept it was developed specifically to measure non-deviant or 'normal' personality traits (Gough 1969). Aside from the three validity scales tapping test taking attitude there is subscales which provide scores in such areas self-acceptance predominance responsibility, self control, achievement – via – conformance movement – via independence and feminine. Like the MMPI, the subscales were developed using criterion groups. The CPI criterion groups were made up of people who were judged by their peers to be strong one of the traits measured by the test.

## **9.4 EDWARDS PERSONAL PREFERENCE SCHEDULE (EPPS)**

Like the CPI, this scale measures normal response tendencies. It is designed to characterize people on dominant motives or needs found in Murray's list of basic needs achievement deference order, exhibition autonomy and so forth. In constructing his test, Edwards (1954) wanted to avoid a bias found in many personality inventories, subject's tendencies to give responses that show them in a socially desirable light. Consequently the Edwards 'Personal Preference Schedule' ask people to choose one item in each of a series of 25 pairs that research has shown to be on average equally desirable. Although it has not been validated so vigorously as psychologists would like the EPSS has proved useful in counseling situations.

## **9.5 THE ADJECTIVE CHECK LIST (ACL)**

A simple and versatile pencil and paper test is the ACL (Gough 1960). It consists of 300 adjectives arranged in alphabetical order that people often use in descriptions of personality. A rater goes down in the list checking any adjective that seems applicable to the person being described. The ACL may also be used to describe one self.

## **9.6 PROJECTIVE METHODS**

Tests that bring out highly individualized responses are called projective methods, these tests use a standard set of stimuli such as incomplete sentences, pictures of ink blots which are relatively

ambiguous. Because there is no right or wrong answer each subject responds in a way which reveals his or her own characteristics.

## **SENTENCE COMPLETION**

The psychologist may ask the individual to complete a series of sentence beginning such as, ‘My mother’, ‘When I am a party ....’, ‘If I had my way .....

## **THEMATIC APPRECIATION TEST (TAT)**

The TAT consists of a standard series of 30 pictures from which the psychologist usually chooses a set for each person which seems likely to elicit particularly relevant material. Each picture is ambiguous enough to permit a variety of interpretation. In this test a person is asked to make up a story what people are thinking and feeling. Most people identify themselves with one of the characters in picture and their stories tend to reveal their perceptions about themselves, others they care about and their life perspective. In this way people may reveal feelings and desires they would otherwise hesitate to discuss openly or in some case would be unwilling to admit to themselves.

## **1.0 PERSONALITY**

Mischel gives a satisfactory definition, ‘personality usually refers to the distinctive patterns of behavior (including thoughts and emotions) that characterize each individual’s adaptation to the situations of his or her life. The emphasis on understanding normal individual variations is one’s everyday sitting’

There are four broad approaches to the study of personality namely:

- a. The trait and type of approach which emphasizes the dimensions and organization of personality
- b. The dynamic approach, which emphasizes motivational factors and the lively interplay of various components of personality.
- c. The behavioral approach which emphasizes the ways in which sets of habits are acquired through basic learning processes, and
- d. The phenomenological approach which emphasizes the role of the self and the individual’s interpretation of the world.

### **1.1 PERSONALITY AS A SET OF TRAITS**

When we describe people we generally pick out some distinctive characteristics by which we can identify them. ‘He is a sloppy housekeeper but a neat dresser.’ ‘She is authoritative in making decisions.’ ‘They are friendly (hostile, suspicious, funny, honest).’ These descriptions attempt to make sense out of observations of people’s behavior in a variety of situations. They also predict how the same people will act when confronted with similar circumstances in the future. The behavioral tendencies which we describe are called traits – propensities to behave in a consistent and distinctive style.

## **1.2 FROM TRAITS TO TYPES**

It is a simple logical step from the notion of describing people traits to the notions of categorizing them into types (introvert versus extrovert, follower versus leader). In other words a type is a class of individuals said to share a common collection of traits for the most part. However, such type categories do not work. If we take almost any single dimension of personality, we find that ratings of people along that dimension are distributed according to a normal bell-shaped curve. Another way to look at personality types is to pay attention only to people who show specific clusters of a few characteristics which are especially meaningful or predictive. In this approach, we ignore many other traits that are not included in the cluster.

## **1.3 SOME ISSUES RELATED TO TRAIT THEORY**

The trait-type approach to personality is attractive and familiar but raises questions which show how complex an area personality study really is. Some of these questions have to do with the reliability and validity of the measures psychologists employ while others are theoretical issues about the nature of the behavioral traits themselves.

## **2.0 RELIABILITY AND CONSISTENCY**

Generally speaking, the reliability or agreement among observers is not a major problem. Provided that two raters observe the same behavior sample, they can usually be trained to agree satisfactorily. Also when adults rate themselves or other adults on personality characteristics, those ratings often tend to be relatively stable over many years. 'Each life has a coherence and continuity that is perceived both by the person and by those who know him' (Mischel 1976).

## **2.1 VALIDITY**

Do traits mean what we think they do? One problem is that the factors identified by factor analysis depend completely on the items in the test. Factor analysis only gives back what has been put into life. If the experimenter changes the kinds of items or the number of items of a particular kind, the tests yield a different set of factors. This characteristic of traits identified by factor analysis leads to the suspicion that all traits are in the heads of the test makers rather than in the personalities of the people being tested.

On the other hand, there is impressive evidence that for some measures of some traits (with at least some people) there is a relatively strong correspondence between real-life behavior and trait descriptions.

### **3.0 SITUATIONAL VARIABLES**

Because measures of personality traits often fail to predict natural behavior many psychologists have grown discouraged with traits theories. They have emphasized immediate and situational influences on behavior such as how the presence or absence of another person affects tendencies to be helpful, honest and cruel. They point out similarly the differences in people's behavior while playing a game of soccer, say and at a formal prom.

### **4.0 PERSONALITY AS STRIVING AND COPING**

Social influential personality theories have emphasized motivation in their conceptions of the reasons people behave as they do. But by far the most complete the most popular and most influential theory of personality but in some respect the least substantiated is psychoanalysis long before psychologists were giving much attention to personality. Sigmund Freud was at work in his psychiatric practice constructing a conception of personality based on his observation of patients. He managed to explain many puzzling aspects of the behavior of both normal and disturbed people; aspects which are inconsistent with those a 'rational' person would do.

## **5.0 FREUD'S PSYCHOANALYTIC THEORY**

Psychoanalysis is a set of theoretical ideas about personality and a method of psychotherapy. The theory has three parts:

1. A theory of structure of personality in which the id and superego the principal concepts
2. A zones predominate in the child at different stages of growth, with effects persisting in adult personality traits, and
3. A theory of personality dynamics, the management of the personality dynamics, the management of the personality's energy system in which conscious and unconscious motivation and ego defence mechanisms are important concepts.

### **5.1 PERSONALITY STRUCTURE**

Freud constructed a model of personality with three parts: id, the ego and the superego. The id can be thought of as sort of storehouse of biologically based (largely serial) motives and 'instinctual' (unlearned usually unverballed reactions for satisfying motives.) the energy of the motive is termed  $I_i^*do$ , left to itself they would satisfy fundamental wants as they arose without regards to the realities of life or moral of any kind.

The id however, is usually bridled and managed by ego. The ego consists of elaborate ways of behaving and thinking which constitute the 'executive functions' of the person. The ego delays the satisfaction of id motives and channels of behavior into socially acceptable outlets. It keeps the person working for a living, getting along with people and generally adjusting to the realities of life. Indeed, Freud characterized the ego as working 'in the service of the reality principle'.

The superego corresponds closely with what we commonly call conscience. It consists commonly of prohibitions learned from parents and other authorities and is often very apt. The superego may

condemn as wrong certain things which the ego would otherwise do to satisfy the id. It also keeps a person striving towards the ideals called the 'ego ideals' which are usually acquired in childhood.

## **5.2 DYNAMICS**

Freud did not intend to divide personality into three separate compartments but rather wanted to convey the dynamic, lively ongoing interplay of its active components. One of the main functions of the personality system is to manage psychic energy (libido) that is to satisfy instinctual drive in ways which are compatible with both the demands of the environment and standards of one's conscience. This can only happen by active control and compromise and it does not always happen smoothly.

One of Freud's major contributions was the notion of unconscious motivation which helps to explain why an individual often acts in ways which seem to be irrational. Freud proposed three states of consciousness and awareness, the conscious, the pre-conscious and the unconscious. In the conscious state we are aware of things around us and our thoughts.

The pre-conscious state consist of memories or thoughts that are easily available with a moment's reflection – for example, what we had for breakfast, our parents, and our first names. In contrast, the unconscious contains memories and thoughts which cannot easily tape. Some of these are unavailable because they are infantile, preverbal ideas which we have become conscious of and may be difficult for our conscious, rational state to accept. Others have been punished from consciousness (repressed) because they are unwanted and disturbing. All of the id and much of the ego and superego are unconscious.

The Freudian interpretation of dreams for example, is based on the idea of unconscious urges. Dreams are supposed to be disguised manifestations of id motives. In everyday life, the existence of id urges may be revealed by slips of the tongue and by selective forgetting.

## **5.3 PSYCHOSEXUAL DEVELOPMENT**

Freud put heavy emphasis on biological development in general and on sexual development in particular. One of his major contributions was to recognize the importance of early childhood. Until his day, childhood had been considered pretty much a matter of waiting until adulthood and child resting practices had been given little thought.

In his theory of child development, Freud emphasized the course of psychosexual development through a succession of stages focused upon body zones. Freud believed that if the child's needs are either under- satisfied or over-satisfied during a specific stage of development, fixation would take place. As a result of fixation, behavior patterns from the fixated period would persist in the adult personality. One could recognize the stage at which there had been childhood problems by spotting holdover behaviors in adults.

In the oral stage, (infancy) the infant obtains pleasure first by sucking and later by biting. Feeding and contact with the mother, exploration by mouthing objects, relieving of teething pain by biting – all help to make the mouth focus on pleasure during the first year. A baby given too little opportunity to suck (or too much) or made anxious about it may acquire an oral fixation which in adults may involve excessive oral behavior,

greediness, dependency and passivity. Fixation during the oral biting stage on the other hand may produce a critical 'biting' personality.

The oral stage (toddler hood) occurs when parents are toilet training their children and teaching them to avoid 'naughty' behavior connected with excretion. In our society this is ordinarily the child's first encounter with authority and the first time the id must be brought under the control of the emerging ego. Psychoanalytic theory says that the first part of the period is characterized by pleasure from expulsion of faeces, later part by pleasure in retention. Freud maintained that the fixation at the first stage results in adult characteristics of messiness and disorder, fixation at the later sub-stage results in excessive compulsiveness, over conformity and exaggerated self control

After they master toilet training children's interest turns into their sexual organs. In the phallic stage a pre-school age child typically develops 'romantic' feelings towards parent of the opposite sex. Freud called these feelings in boys the Oedipus complex, after the mythical story of Oedipus who unwillingly killed his father and married his mother and in girls, the Electro complex after Agamemnon's daughter who prevailed on her brother to murder another. According to Freud, the phallic stage is a crucial one. Boys feel threatened by a jealous father and begin to construct a psychic defence against anxiety. The defence that normally emerges is identification. Boys try to become like their fathers. Anxiety is reduced because a threatening father would not be likely to harm someone like him

– 'a chip off the old block'. In addition, by becoming more like their fathers, boys unconsciously believe that they will be able to win their mother's affection. In the process of identifying with their fathers boys not only take their father's behavior patterns but also their father's ideas of right and wrong. Thus through identification, the superego begins to form. For girls the story goes like this; when they notice that they do not have the sexual organs of their father or brother they unconsciously believe that they have been castrated by their mother, they are angered by this and shift their affection to their father. However, even though they are attracted to their fathers, little girls are still said to identify with their mothers because they unconsciously perceive that if they take on their mother's trait and become more like them they will stand a better chance in their 'romantic' relationship with their father. Thus, in spite of their affection for their fathers little girls continue to identify with their mothers, becoming like them and incorporating their mother's values in the process. In this way girls develop their superegos from their mothers.

The latency period begins at about age 6 and extends to approximately the onset of puberty. Freud did not find this stage very interesting. The child's sexuality largely represses while the ego expands as the child learns more about the world. At puberty the child enters the genital stage when normal heterosexual interests appear. The person begins to focus on others instead of centering on self. Responsible enjoyment of adult sexuality was for Freud the epitome of healthy development.

## 6.0 JUNG'S ANALYTIC PSYCHOLOGY

Freud himself had a dominant personality that both attracted and repelled people. He attracted many disciples but some of them eventually disagreed with him on points of theory and split off to found their schools.

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The theory formulated by Carl Gustav Jung is not easy to summarize. It is not a complete theory

as Freud's was and it is somewhat shrouded in stoicism. Jung did not subscribe to Freud's heavy emphasis on sexual motivation. He gave more weight to people's aims and plans and less to instincts. Perhaps the concept for which Jung is best known is the collective unconscious. The collective unconscious is the foundation of personality – the storehouse of unconscious arch types (primordial images) concepts which represent the primitive and ancestral experience of the human race. One acquires these unconscious images automatically as parts of one's genetic heritage all people throughout history have shared them. Examples of arch types are God, rebirth (resurrection), the wise old man and the devil. In the collective unconsciousness one finds the sources of myth and memory of universal realities such as mothers and fathers, the sun and storms, caves and rivers, good and evil, life and death, masculinity and femininity. In addition to the collective unconscious, everyone thus has a part of personality which is the personal unconscious, developed from one's even experiences which were once conscious but have been repressed. The healthy individual gradually comes into touch with the unconscious part of his or her personality integrating the unconscious or 'shadow' side with the conscious side allowing all parts of the personality to grow into fully realized purposeful self.

In addition to the balance of conscious and unconscious forces Jung emphasized other balances in one's nature. Some modes of experiencing and dealing with the world may be prominent in one's conscious personality while opposite modes may dominate the unconscious mode. For example, everyone has a masculine, assertive side (the animus) and a soft feminine side (the amino). Similarly Jung formulated the concepts of introversions and extraversions – turning inward toward contemplation or outward toward others. Many of Jung's terms and ideas like these have found their way into common use.

## **7.0 ALDER'S INDIVIDUAL PSYCHOLOGY**

Alfred Alder like Jung rejected Freud's heavy emphasis on biological drives and on sex in particular. His theory put much more emphasis on one's social context, both the influence of social factors in personality development and one's ongoing interpersonal relationships. No matter how mentally deviant the person, there remains a commonality with others. Alder stressed people's purposeful strivings. Some people strive mainly for their own glory; others strive to overcome life's problems and to contribute to the welfare of their fellows. Everyone to some extent and his or her own way strives for superiority and power. Modern day Alderians such as Dreikun (1964) stress the management of power relationships in families as the key to understanding personality and improving adjustment.

Early in life according to Alder, people develop their basic lifestyle. The life style refers to the underlying conviction individuals have about the world and themselves and the way in which they organize their experience to make sense of it. Specific behavior patterns may change as people mature or find themselves in different circumstances but life styles are much more difficult to change. It was Alder who organized the concept of the inferiority complex, a phrase now part of everyday speech. We are forever striving to overcome our inferiorities. An inferiority complex develops when a person regularly fails to overcome weaknesses or for any reason comes to put too much emphasis on a particularly inferiority. From Alder too we have the concept of compensation – the development of substitute activities to overcome inferiority. A person who like, Theodore Roosevelt, who was fragile and sickly as a child may throw himself or herself into physical activities and compensate or even overcompensate for handicaps or inferiorities.

## **8.0 DEFENCE MECHANISMS**

Common psychoanalytic and neo-analytic theories are notions of the ways in which the personality operates as a dynamic whole. Because the id conscious demands are instinctual, infantile and amoral, they must often be blocked by the ego and superego. Because of this conflict and the persistence of the unsatisfied demands, anxiety (vague fearfulness) is aroused. The person then seeks ways to reduce the anxiety. Freud described a number of defence mechanisms by which the ego disguises, redirects, suppresses and otherwise copes with the id's urges. Though many psychologists do not agree with Freud's view that the defence mechanisms originate in conflicts amongst the id, ego and superego most do accept these mechanisms e.g. descriptions of some ways in which people cope with their problems. Thus defence mechanisms are a generally accepted way of looking at how people handle stress.

### **8.1 REPRESSION**

For Freud, repression was the fundamental technique people employ to allay anxiety caused by conflicts. Repression is an active mental process in which a person 'forgets' by pushing down 'into the unconscious' any thoughts that arouse anxiety. In terms of psychic energy repression is an expensive defence mechanism. The unconscious urges continue to seek expression and therefore successful repression requires a continuing expenditure of ego energy. It may also involve repressing related ideas that might unconsciously experience a longing (unacceptable to the conscious self) to run home to mother, sit on her lap and be patted and comforted. Having repressed that urge, the students might 'forget' to call home on mother's birthday, for if the call had taken place, keeping the urge repressed would have been very difficult.

### **8.2 SUPPRESSION**

In contrast with repression, suppression is forgetting which is somewhat more controlled. The unwanted thoughts tend to remain preconscious. A famous example of suppression is given by Scarlet o' Hara in the final scene of 'Gone with the wind'.

### **8.3 REACTION FORMATION**

Reversal of motive is another method by which people attempt to cope with conflict. A true motive which would arouse unbearable anxiety if it were recognized is convertible into its opposite. If people are too modest, too solicitous, too affectionate, or sometimes strident crusaders against an 'evil' such as alcoholism, homosexuality or child abuse it is possible that they are unconsciously harboring the opposite feelings. Thus disguised, the unwarranted motives can be controlled. A quotation from Shakespeare captures the idea of reaction formation; 'The lady cloth protest too much me thinks.'

### **8.4 PROJECTION**

Blaming others or projection is a way of coping with one's unwanted motives by shifting them to someone else. The anxiety arising from the internal conflict can then be lessened and the problem dealt with as though it were in the external world. For example, an insecure student may have a strong desire to cheat on an examination but his conscience will not allow him to even consider such a thing. He may then suspect that other students are cheating when they in fact are not. An unattractive woman is afraid to leave her house for fear that men will attack her may be projecting her thwarted sexual desires. Carried to extremes, projection is a mark of behavior disorder known as paranoia. Paranoids project their own unacceptable hostile feelings about others into a whole system of thinking in which they feel that others are out to get them.

## **8.5 RATIONALISATION**

This defence mechanism substitutes an acceptable conscious one. Put another way, we 'make excuses' giving a reason different from the real one for what we are doing. Rationalization is not lying, we believe our explanation. Examples range from the innocent to the serious. The long lines at the movies during final week are populated by students who 'need to relax' to do a good job on their tests. A tense father who strikes a rambunctious child may rationalize that he is acting for the child's good. Aesop's fable the fox and the sour grapes is another example of rationalization, something we cannot get becomes something we did not want anyway. Rationalization is a common mechanism we all use to bolster our self esteem when we have done something foolish. If over used however, it can prevent wholesome coping with a situation head-on. For example, a person with unconscious fears of intimate relationships may find succession of potential mates to be unacceptable for different reasons and as a result spend the rest of his or her life in a lonely state.

### **INTELLECTUALISATION**

Related to rationalization is intellectualization, another defence mechanism which involves reasoning.

## **8.6 DISPLACEMENT**

In this defence mechanism the motive remains unaltered but the person substitutes a different goal object or the original one. Often the motive is aggression which for some reason the person cannot vent on the source of the anger. A person who is angry with his or her boss cannot show it for fear of being fired but comes home, bawls out the children and kicks the dog.

## **8.7 REGRESSION**

In the face of threat, one may retreat on an earlier pattern of adaptation, possibly a childish or primitive one.

## **8.8 COMPENSATION**

Here the person finds a substitute activity to satisfy a motive. Failure or loss of self esteem in one activity can be made up for effort in another area.

## **8.9 SUBLIMATION**

For Freud, sublimation was the highest level of ego defence. It consists of redirection of sexual impulses to socially valued activities and goals such as creating a poem or novel.

## **9.0 THE USE OF DEFENCE MECHANISMS**

If they allow us to feel more comfortable as they do then their value in reducing tension and letting us get on with important problems more than off sets the trivial self-deceptions they entail.

## **10.0 SOME ISSUES RELATED TO PSYCHOANALYSIS**

A major problem with psychoanalysis has to do with the difficulty of conforming or disapproving analytic interpretation. A number of more contemporary theorists known as neo-analysts have enriched and modified Freud's basic framework to put stress on social factors.

## **11.0 PERSONALITY AS LEARNED BEHAVIOUR PATTERNS**

A theories stress observation of people's actual behavior.

### **11.1 CLASSICAL CONDITIONING**

Classical conditioning takes place when a neutral stimulus (CS) is paired with an unconditional stimulus (US).

### **11.2 OPERANT CONDITIONING**

The key feature of operant behavior is that behaviors which are instrumental in producing reinforcement or 'reward' become more likely to occur.

### **11.3 SOCIAL LEARNING, MODELLING AND IMITATION**

Human beings learn their characteristic ways of behaving not only through classical and operant conditioning but also through observation.

### **11.4 PERSONALITY AS THE SELF**

When we stop studying other people's behavior for a moment and pause to think about our own, we become aware of our own person or our feelings and attitudes and of a feeling of responsibility for our actions. Generally speaking, the term 'self' has to do with people's attitudes about themselves, their picture of the way they look and act, the impact they make on others, their traits and abilities, their foibles and weaknesses. This set includes what is known as the self concept or self image 'attitudes, feelings, perceptions and evaluations' of self as an object. The second set of meanings relates to psychological processes which are the executive functions, the process by which the individual manages and copes, thinks, remembers, perceives and plans.

## **12.0 ROGER'S SELF THEORY**

Carl Roger's theory of personality grew originally from a 'client-centered' theory of psychotherapy and behavior change. Rogers emphasizes the importance of the total organism of the person. The whole experience Rogers calls the phenomenal field. This is the individual's frame of reference and may or may not correspond with external reality.

### **12.1 THE SELF**

Out of the phenomenal field there gradually develops a portion which is the self or the self concept.

### **12.2 PERSONALITY DEVELOPMENT**

As children grow, parents and other people react to their behavior. Sometimes the reaction is positive, sometimes disapproving. Children therefore learn to regard some of their actions as unworthy and they tend to exclude these from their self-concept by distorting or denying them.

### **MASLOW'S SELF ACTUALISATION THEORY**

Abraham Maslow's personality theory, like that of Carl Rogers falls in that broad 'third world of psychology known as humanistic psychology. Psychoanalysis and learning theory constitute the

other main ‘worlds’. Maslow emphasized even more than Roger’s positive, optimistic trends in human existence.

### **13.0 AN EXAMPLE OF PERSONALITY DEVELOPMENT: SEX DIFFERENCES**

The past few years have seen unprecedented public interest in the sex role development of children and the appropriate social, economic and political roles of men and women in our society.

#### **13.1 SEX DIFFERENCE BETWEEN MALES AND FEMALES**

We all have stereotypes about male-female differences. As with all other stereotypes we tend to remember and emphasize instances which confirm our expectations.

#### **13.2 SEX DIFFERENCES THAT ARE FAIRLY WELL ESTABLISHED**

13.2.1 Girls excel in verbal ability

13.2.2 Boys excel in visual spatial ability

13.2.3 Boys excel in mathematical ability

13.2.4 Males are more aggressive

#### **14.0 SEX DIFFERENCES THAT ARE STILL IN QUESTION**

14.1 Tactile sensitivity, girls are more sensitive to touch

14.2 Fear, timidity and anxiety – observation studies do not tend to show differences but ratings by teachers and self reports often do.

14.3 Activity level – from early pre-school boys tend to be more active

14.4 Competitiveness and compliance – when differences are found, boys are reported to be more competitive and girls more compliant.

14.5 Dominance – during most of childhood, boys make more dominance attempts usually directed at other boys.

14.6 Nurturance and ‘material’ behavior – girls frequently play with dolls

#### **15.0 UNFOUNDED BELIEF ABOUT SEX DIFFERENCES**

15.1 That girls are more ‘social’ than boys

15.2 That girls are more ‘suggestible’ than boys

15.3 That girls have lower self esteem

15.4 That girls are better at role learning and simple repetitive tasks while boys are better at tasks that require higher level cognitive processing

15.5 That boys are more ‘analytic’

15.6 That girls are more affected by heredity and boys by environment

15.7 That girls are auditory and boys are visual

### **16.0 SOURCES OF SEX DIFFERENCES**

#### **16.1 BIOLOGICAL FACTORS**

Many of the behavioral differences between sexes which are involved in reproduction are nurture of the young are obviously biologically determined.

## **16.2 TRAITS THEORIES**

Traits theories do not explain differences, they merely describe them.

## **16.3 LEARNING THEORIES**

Most psychologists lean heavily towards learning theory to explain observed sex differences.

## **16.4 SELF THEORY**

Theorists who propose a self construction tend to emphasize the importance of stereotypes and sex roles in personality

### **SUMMING UP**

Ideas from biology and the personality theories help us to understand sex role differences and similarities. What these ideas do not do is make value judgments for us, that is to suggest what is best for children and for society as a whole. Only long term longitudinal studies of children growing into adulthood with contrasting kinds of experience can tell us that.

### **ASSIGNMENT**

**According to Freud, what are the basic components of personality structure? How do the components interact?**

### **BEHAVIORAL DISORDERS**

1.0 The terms behavior disorder, mental disorder, mental illness, emotional disturbance and abnormal behavior all mean much the same thing. Abnormal behavior is the broadest since it is sometimes used to refer to peculiar behavior in normal people. Psychologists tend to shun mental illness for it implies that behavior disorders are not like diseases in that sense. Most psychologists prefer the term behavior disorder.

#### **1.1 DEFINING BEHAVIOR DISORDERS**

Some behaviors are labeled 'abnormal' only by some observers and not by others. For example, young people with unconventional lifestyles are likely to be viewed quite with difficult by their elders and friends. Other behaviors appear abnormal because they represent a marked change from previous and customary behavior pattern as when someone suddenly begins dressing and acting flamboyantly. But even the most severe forms of disturbance which have been labeled 'abnormal', dangerous or weird enough to warrant someone's becoming a patient in a mental hospital are not always readily apparent to casual observers. Visitor might have trouble distinguishing the patients from the staff in an active modern hospital which rewards patients for normal rather than deviant behavior.

#### **1.2 SOCIAL CONTEXT**

Few behaviors are abnormal in themselves. Abnormality must be defined in the context of a particular social; situation. Alone in your home you can take off your clothes, sing to the table or chair or deliver your acceptance speech for the noble prize inheritance. But if you did any of these things during a college class many people will be uncomfortable and probably call you 'crazy'. If you did them very often you might end up in a mental hospital not for what you

did but because you choose an appropriate time and place.

### **1.3 QUANTITY VERSUS QUALITY**

The amount of frequencies of certain behaviors also enters into the definition of abnormality. For example, everyone knows what is to be nervous and anxious. None of us is entirely free of such feeling. But some people are labeled disturbed because their feelings of anxiety are intense, persistent and debilitating. Similarly, most of us have occasional periods of preoccupation or day dreaming when we are inattentive to events about us, but such behavior becomes abnormal when it is habitual. That is when people withdraw from ordinary relationships and seem inaccessible. The general point is that few behaviors are abnormal in and of themselves but they may be abnormal by virtue of their absence or their excess; moderation of all things wrote the ancients. When people show little of unexpected behavior (too little remorse for example after hurting someone) their behavior may be abnormal. On the other extreme, if they concentrate excessively on one behavior – if for example they cannot cope with their daily life that too is abnormal. Between the two extremes, behavior is in that uncharted ‘normal’ area.

### **1.4 SUBJECTIVE DISTRESS**

Behavior disorders are often accompanied by reports of subjective distress – for example feelings of anxiety, lethargy, agitation or sadness, unwanted thoughts or nauseam aches and pains. However, individuals with anti-social personalities may commit horrendous acts with little remorse; others who are psychotic may be unaware of the consequences or very destructive behaviors.

### **1.5 DISTRESS IN OTHERS**

If people in authority – parents, teachers, spouses, an employer or police think that someone is not adjusting properly they may call that person abnormal. The labels ‘hyperactive’ and ‘minimal brain damage’, for example, are becoming popular in the public school system for children whose classroom behavior is disruptive. But teachers may not recognize the abnormal behavior of the quiet, fearful and painfully shy ones, who are isolated from other children, never leave their desks and always do as they are told, for such children do not demand attention.

### **1.6 TREATMENT IN A MENTAL HEALTH FACILITY**

Contemporary commitment laws for the most part require that people be a danger to themselves or others to be hospitalized by force. One young member of a middle class family refused treatment for several years while she lived in abandoned cars and raided garbage cans until eventually her health deteriorated to a point at which legal action was deemed appropriate. Until then, her frantic parents and sympathetic police were unable to intervene against her will.

### **1.7 PSYCHIATRIC DIAGNOSIS**

A person who is examined at a mental hospital is tagged with a diagnosis has been given whether or not the person receives treatment can be a reason for labeling that person abnormal. It is often necessary to rely on such diagnosis even though they have two weaknesses.

First, other people may sway the judgment of the professional making the diagnosis. One investigator (Tenslin 1970) used a video tape of an actor portraying a healthy individual, who

was a happy, a warm and self confident person. Of fifty psychiatrists and psychologists who overheard a well-known expert suggesting that the individual was really psychotic, only three rated the individual as normal.

Second, psychiatric diagnoses are often unreliable. Two psychiatrists will usually agree on very major categories but agreement has been poor beyond that, especially in borderline cases. Efforts are currently underway to improve the situation.

## **2.0 CLASSIFICATION OF BEHAVIOUR DISORDERS**

In spite of the definitional difficulties, there is an official system for classifying behavior disorders. This system is given in the Diagnostic and Statistical manual of Mental Disorders first published in 1952 (DSM- 1), revised in 1968 (DSM-2) and currently under version (DSM-3) by American Psychiatric Association. Though few professionals regard the system as entirely satisfactory, many of them use it and many of its psychiatric labels have filtered into common speech. Words like ‘paranoid’ and ‘psychotic’ for example are heard in everyday conversation. By learning something about the system of classification one will learn to use the terms properly and will also have a better understanding of the implications of decisions made by doctors, the courts, legislators and the public.

### **2.1 DSM**

The new Diagnostic and Statistical manual is more complex and explicit than previous versions. It attempts to describe not only the major behavior disorders but also other aspects of the patients’ personality and environment. For example, using the DSM-III system the professional could indicate that a fifty year old woman is currently depressed, excessively dependent (a long standing personality disorder), that she and her husband are unemployed (a psychosocial distress). The professional could add that during the previous year, the patient had shown one or more periods of coping rather well. Each of these features of the individual’s behavior and history is coded along a different dimension or axis of the system.

### **2.2 FORMER CATEGORIES**

DSM-III is very new and some professionals will go on using older technology for long time to come. Former classification systems often divided mental disorders into four major categories: brain syndromes, psychosis, neurosis and personality disorders. In particular, the word neurosis has been dropped from DSM-III. Brain syndromes refer to mental disorders due to impairment of brain tissue. They may be acute temporary and reversible (such as one-time barbiturate intoxication) or chronic and irreversible (such as damage associated with old age).

A psychosis is a severe form of mental disorder in which the individual experiences a pervasive distortion of reality and a serious disorganization of personality. The word psychosis is used in DSM-II to indicate a severe form of any several disorders. Some psychoses are clearly the result of organic factors while the evidence for others is not so clear. Psychoses are frequently so handicapping that the individual is unable to hold a job, go to a regular school or carry out any but rather simple everyday duties. Psychotic persons may or may not experience delusions (fantastic or distorted ideas such as belief that one’s mind is being controlled by a laser beam) or perceptual distortions such as misinterpreting other people’s idle chatter as critical remarks about oneself or hallucinations (experiences which have no identifiable external source) – ‘hearing things’ or ‘seeing things’ that are not there.

Neurosis is the term older systems applied to a milder and incapacitating disorder. Many people continue to use the term. Neurotic persons do not land in mental hospitals as often as psychotic persons do. The key point is that neurotic disorder is thought to result from internal conflicts and that generally the neurotic symptoms represent some kind of solution to the underlying psychological problem. Anxiety is usually an important part of the picture, either as an easy to recognize feeling or in the guise of neurotic behaviors which serve (unconsciously) to avoid the anxiety which otherwise would be felt.

### **2.3 PERSONALITY DISORDERS VERSUS ILLNESS AND DISEASES**

The DSM classification systems have all been based on a medical model, the current one even more than the previous ones (Schacht and Nathan, 1977). They all assume that among the great variety of mental systems and behaviors we should be able to identify syndromes or symptom clusters which represent diseases. A syndrome implies regular relationship between a cause, a symptom picture and a course (future outcome).

### **3.0 ON LABELING PEOPLE**

Labels such as ‘narcissistic’, ‘paranoid’ and ‘schizophrenic’ are helpful to professionals because they are useful in organizing bits and pieces of human behavior but attaching a label to a person can also have adverse side effects. Many hospitalized patients become worse the longer they stay in the hospital. Part of the reason is that once labeled they tend to take on the behavioral traits associated with the label.

### **3.1 ORGANIC MENTAL DISORDERS**

The organic mental disorders are caused by alterations in brain tissues and brain chemistry. among the cause for brain damage which can result in behavior disorders are syphilis of the brain and other brain infections, physical blows to head, disturbances of the blood or oxygen supply in the brain, brain tumors, disorders of metabolism, physical changes in the brain with old age and those due to over use of alcohol are by far the most common types of chronic or long term organic mental disorders.

### **3.2 DRUG USE DISORDERS**

Excessive dependence of certain drugs is considered to be a behavioral disorder. In heroin and alcohol addictions two types of dependency are involved – psychological dependency and physical addiction. Psychological dependency simply means that using the drug somehow helps the person feel better, relieves tension or otherwise satisfies the psychological needs. In physical addiction however, a physical need develops, the physiology of the body is so altered that withdrawal symptoms occur when the drugs is discontinued. In the case of alcohol, withdrawal symptoms may include tremor (the shakes) delirium, convulsions and hallucinations. Collectively, with or without convulsion symptoms, the shakes are called delirium tremors. Alcohol is said to reduce social inhibitions thus permitting the people who are so inclined to act out their hostilities and sexual wishes. It is also said that men who drink to excess have a need for personal power and chose a drinking outlet for this need (McClelland, Davis, Kalin and Warner 1972).

### **3.3 SCHIZOPHRENIC DISORDERS**

The word 'schizophrenic' is constantly misused. It is often applied to people who simply behave inconsistently. Newspapers call the inconsistent behavior of politicians schizophrenic. The term is also used incorrectly when it is used to mean 'split personality' or 'multiple personality' a relatively rare disorder.

### **3.3.1 SYMPTOMS**

A broad variety of symptoms are lumped together under the term, suggesting that there may be much schizophrenia. Probably the most important aspect of the disorder is disturbance in the basic thought process. For example, there is a tendency towards loosening of associations, disjointed expressions that seem to run in a scattered way and fail to reach their logical conclusions. The phrase 'cognitive slippage' describes the way a schizophrenic's thought may skitter away from a logic framework.

## **4.0 THEORIES OF SCHIZOPHRENIA**

The many general ideas about the causes of schizophrenia can be divided into three general classes:-

- 4.1** Life experience theories that attribute the onset of schizophrenia to family and other life experiences.
- 4.2** Genetic biochemical theories that treat schizophrenia as primarily an inherited disease.
- 4.3** Interaction theories stating that schizophrenia arises from a combination of genetic predisposition and life experiences.

## **5.0 LIFE EXPERIENCE THEORIES**

It is a fact that schizophrenia tends to run in families so that the pre-schizophrenic child is likely to be under the influence of one or more schizophrenic parents. But aside from the possibility that a child may actually have a schizophrenic parent as a mode of behavioral learning, some investigators believe that schizophrenia can be caused by conflict in a family.

### **5.1 GENETIC BIOCHEMICAL THEORIES**

Few psychologists' today doubt that genetics plays some role in schizophrenia, though they differ in the emphasis they give to it. The concordance rate, the percentage of relatives of schizophrenic person who are also schizophrenics – is much higher in identical twins or other family members. A genetic theory of schizophrenia would predict this because identical twins have identical genetic constitutions.

Another way to examine the contribution of heredity is to look at schizophrenics who have been brought up in adoptive homes from an early age and therefore were not brought up by their biological families. However, biological factors leading to schizophrenia need to be hereditary. They could be the result of injury or disease. Some research on schizophrenic populations has shown high incidences of complications of pregnancy, low birth weight and oxygen deprivation at birth, all of which put children at risk. Thus schizophrenia may be one of several possible outcomes of biological assaults, other outcomes include mental retardation, certain palsy and school learning problems.

### **5.2 INTERACTION THEORIES**

Probably the most accepted position today acknowledges both a genetic biochemical predisposition to schizophrenia and the influence of life experience. Many people believe that there is an inherited biochemical brain defect in schizophrenia but in a normal life situation the defect produces only a mild disorder in which the symptoms may be weak forms of those seen in schizophrenia. On the other hand in family stress situations of the kind described above, the individual with a genetic biochemical predisposition may be particularly vulnerable and unable to cope with the stress.

### **5.3 PROGNOSIS FOR SCHIZOPHRENIA**

The patient's prognosis depends on a number of factors. One is the patient's adjustment before he or she became sick enough to be hospitalized. If on from the onset the symptoms of schizophrenia were rapid and if the patient suffered some pronounced shock or trauma just before the schizophrenic break and had been moderately well adjusted until then, the prognosis is rather good.

### **5.4 PARANOID DISORDERS**

Paranoid disorders are marked by delusions of grandiosity or persecution. One patient may believe that he is an especially important person, for instance, he may tell you that he is Jesus or Einstein and spin quite a tale to prove it, explaining that people who are jealous of his power and position are trying to destroy him. Another patient may have delusions of persecution and tell you that someone has invented a machine which is slowly dissolving her with mysterious wave. Freud proposed that paranoid belief systems arose from unacceptable homosexual desires. Persons labeled as paranoid seem to have life-long patterns of finding fault with everyone but themselves. It is known that paranoid delusions sometimes occur in people with arteriosclerosis and other aging processes; they occur in people taking amphetamines and some other drugs.

### **5.5 AFFECTIVE DISORDERS**

Types of affective disorders, the unipolar and bipolar forms which tend to appear in different biological conditions. (Cadoret and Winokur 1976)

### **6.0 HELPLESSNESS**

We have from animal studies of a kind of 'giving up' – helplessness in situations where there is stress that cannot be reduced by anything the animal does. Perhaps one cause for human depression is stress which cannot be reduced by anything the person does.

### **6.1 REDUCTION OF REINFORCEMENT**

Learning theory provides rather straight forward explanation of episodes of depressions which follow significant loss, such as the death of a loved one, a divorce, or being fired from one's job. The loss represents a reduction in one's sources of reinforcement. When a love relationship breaks up the individual is left without a source of attention, affection, sex or other influences for a great range of behavior. Man behaviors are extinguished because they no longer 'pay off'. Until the depressed person learns new responses to replace the old ones – the activity level will be low and sadness will remain.

## **6.2 COGNITIVE APPROACH**

Aaron T. Beck (1974, 1976) thinks of depression primarily as a tough disorder and only secondarily as a mood disorder. According to Beck depressed persons are dominated by views of the self, of the outside world and of the future. They see themselves as losers and all their perceptions are colored by this major premise. The depressed mood follows. Beck (1974) further proposed that depressed people experience major distortions of logical thought processes.

## **6.3 ANXIETY DISORDERS**

Anxiety – a vague, fearful feeling is the hallmark of many behavior disorders. It is usually concealed by the defensive behaviors such as avoidance responses or compulsive actions which a person uses to reduce it.

## **6.4 PHOBIC DISORDERS**

An intense, irrational fear of something specific is a phobia. There are many kinds of phobias, fear of small places, high places, the dark, animals and so on. The patient attempts to control anxiety by avoiding the phobic object or situation.

## **6.5 GENERALISED ANXIETY DISORDER**

In this disorder the anxiety may be persistent and uncomfortably high most of the time or it may come as a sudden attack that last from a few hours to several days. Often, people who are anxious think they have a serious medical disorder for the symptoms often include palpitation, fatigue, breathlessness, blurred vision, sweating, nervousness, chest pain, sighting, dizziness, faintness and headaches and so on.

### **DISENGAGEMENT**

As people grow older, they tend to be less active and to withdraw from their social surroundings. Depression is very common among older people and suicide rates are much higher among elderly than young adults.

### **ASSIGNMENT**

How do maturation and learning interact in development? Give examples from each of the three periods described.

## **6.6 OBSESSIVE – COMPULSIVE DISORDER**

In obsessive – compulsive disorders the person experiences persistent unwanted ideas and / or repeated impulses to perform irrational actions. The ideas are termed obsessions; the actions are known as compulsions.

A person with such ideas is likely to regard them as unreasonable and unpleasant but nevertheless fails to control them. Obsessions and compulsions tend to go together. In fact compulsive actions may be directly related to obsessive thoughts. A person obsessed with the idea of being dirty or guilty may wash his hands every few minutes. Another person obsessed with anxiety provoking thoughts may try to blot them out by concentrating on counting all the steps she climbs.

## **6.7 SOMATO FORM DISORDERS**

This group of disorders is distinguished by symptoms which take or at least mimic a somatic (physical) form. Many of the patients whom

Freud treated and when he built his theory were known as hysterics. This describes women with a variety of physical complaints. These ranged from multiple vague complaints to dramatic unusual paralyses, convulsions and disturbances in sensation which are termed conversion disorders.

## **6.8 SOMATIZATION DISORDER (BRIQUETS SYNDROME)**

The term Briquette's syndrome refers to the typical picture, more frequent in women than in men, of a history of multiple vague complaints which are often described by the sufferer in terms so colorful that they tend to stretch the imagination. For example, a woman might complain of 'throwing up everything I have eaten in the past six weeks' although she is far from emaciated she might relate the drama of fainting in stands of a football game or describe episodes of palpitation, back pains or headaches.

## **6.9 CONVERSION DISORDER**

Occasionally a person who is in a conflict situation that is unusually severe develops an incapacitating physical-like symptom. The symptom varies with the conflict, the individual and the individual's habits. It may be blindness or deafness, a paralysis of almost any part of the body, a localized loss of feeling or conversion reaction because psychologists and psychiatrists originally believed the conflict was somehow converted into physical symptom.

## **6.10 PSYCHOLOGICAL FACTORS AFFECTING PHYSICAL CONDITIONS**

A number of physical disorders are caused by or aggravated by psychological factors. Actually, bodily damage is done to some organ or organ system. Such disorders are often called psychosomatic disorders. They differ from the somatoform disorders which no physical damage can be detected.

## **6.11 STOMACH ULCERS**

Hydrochloric acid which is required for digestion is normally secreted in the stomach when a person eats. Acid secretion is under control of the autonomic nervous system. In the anxious person acid can be secreted

in the empty stomach, sometimes in quantities large enough to attach the lining of the stomach so ulcers result. In an extreme case the acid can literally burn a hole in the stomach to form what is called a perforated ulcer.

### **6.12 NEURODERMATITIS**

Neurodermatitis, inflammation or rash of the skin frequently is caused in part by emotional factors. Often the person also has some physical allergies associated with the skin problem.

### **6.13 ASTHMA**

It is an illness that may have a physical source in respiratory allergies but most physicians agree that it also has a psychological basis. One way of looking at it is that the asthmatic response is a form of avoidance conditioning. In the presence of a fear object a child will cry. A number of respirator responses that closely resemble asthmatic behavior:- sighing, gasping, sneezing and coughing often follow severe crying spells. Suppose that a patient typically ignore the child's crying but reinforces asthmatic responses by paying attention when the child gasps or wheezes, a feared stimulus will then elicit asthma-like behaviors which are followed by parental attention and anxiety reduction. From this point it is only a small step to a full-blown asthma attack. Unwillingly the parent may have reinforced successive approximations to the attack.

### **6.14 PERSONALITY DISORDERS**

Many people who are considered abnormal are classified as having personality disorders. This is a diverse group of disorders in which the common thread of a life-long pattern of deviant behavior is just the way that person is. These people do not show the bizarre symptoms of the schizophrenic, manic or deeply depressed individual. The way they cope with life's problems and relate to others may be considered troublesome, unusual, strange or perhaps tiresome but they may not feel a great deal of anxiety or distress except like other people when the encounter special crises.

### **6.15 HISTRIONIC PERSONALITY**

An individual with a histrionic personality (more often a woman than a man) tends to show immature, self-centered, seductive, attention- getting behavior. Individuals with this pattern are likely to be manipulative; they get others to do their bidding by indirect attacks. 'Southern Belle' behaviors, useful illness and making others feel guilty for one's awful sufferings are some of the tactics of the histrionic person.

### **6.16 ANTI-SOCIAL PERSONALITY**

The normal-abnormal distinction is particularly fuzzy when it is applied to the category of antisocial personality, sometimes also labeled psychopathic or sociopathic personality. Such persons do not play by the usual rules of society. They behave as if a special set or no rules should apply to them alone. Some are 'con men', embezzlers and bad- check passers. Others are drifters, never able to keep a job for very long. They show great skill in short-term interactions with an uncanny knack of saying just the things people want to hear. They appear charming, confident, mature and sincere. Their behavior is however, inconsistent with their words. They do not follow through on promises or obligations; they are perfectly willing to deceive and defraud people. Psychopaths feel no close bounds with others but are often

remarkably adept at convincing other people to help and trust them.

### **ASSIGNMENT**

**What are some of the cues we should use to decide whether a behavior is ‘normal’ or ‘abnormal’?**

## **THERAPY FOR THE BEHAVIOUR DISORDERS**

### **CURRENT TRENDS**

There is now use of tranquilizing drugs which are taken by patients while at home.

Interdisciplinary teamwork is increasing in such institutes as clinics, hospitals, schools and private offices. There is a high degree of overlap among the activities of several of the mental health professions. For example, psychologists, psychiatrists, social workers, school counselors and psychiatric nurses all might under similar circumstances of just about the same things with a person who asked them for assistance. Counseling and psychotherapy are general activities of all these professionals.

### **ELECTRO SHOCK THERAPY**

In electroshock therapy (EST) also known as electroconvulsive therapy (ECY) a full body seizure or convulsion is brought about by passing a quick jolt of electric current (about 100 volts) through the brain. The individual immediately loses consciousness. The body becomes rigid and then the muscles begin to twitch violently. The seizures last up to about a minute, but the patient remains unconscious for several more minutes before waking in a temporary confused state. The patient has no memory of what has happened during the treatment and usually for some period before that. ECT patients may forget other past memories as well though this is not so common. The method used to be common but now is used selectively and in conjunctions with sedatives and muscles relaxants which reduce its unpleasantness and risk.

### **PSYCHOSURGERY**

Surgery on the brain which is done in order to bring about a behavioral change is called psychosurgery. From 1940 to 1955 a type of psychosurgery known as prefrontal lobotomy come into wide use of patients who were tracts from the frontal lobes to the lower brain centres were cut. This was a drastic operation and although some patients did improve others become apathetic, dull human ‘vegetable’ as a tragic result. Because of these negative affects and because many of the same results can be achieved by tranquilizing drugs, prefrontal lobotomies are at most never done today.

### **CHEMOTHERAPY**

Treatment through chemical substance or drugs is known as chemotherapy. Today it is used more widely than all the other kinds of treatment put together. Indeed we self administer many substances bought at the drug store, grocery store, liquor store or bar to elevate our mood, reduce anxiety, help us sleep, pep us up and combat pain. Physicians often administer tranquilizers, a group of drugs which lower anxiety and irritability. The most popular prescription drug in the world is valium, a mild tranquilizer. One of the most used is called chlorpromazine (Thorazine) which often helps reduce aspects of the primary thought disorder in schizophrenic patients.

The drug does not cure schizophrenia but for a new patient with favorable history, it may produce an almost complete cessation of symptoms. Unpopular depression often yields to imipramine (tofranil) or other similar drugs. Lithium carbonate is useful in bipolar affective disorders. Drugs are also used to reduce hyperactivity in children e.g. Ritalin. Changing the environment of a hyperactive child is often more effective than drug therapy.

## **PSYCHOANALYSIS**

During the final decades of the eighteenth century and the early twentieth century, Sigmund Freud and his followers introduced psychoanalytic methods that are still in use today. The term psychoanalyst refers to a therapist who practices these basic teachings. The theory that is properly psychoanalysis includes some specific ideas about personality and psychotherapy. Psychoanalysis emphasizes the interplay of the personality components known as id ego and superego.

According to psychoanalytic theory, we all experience certain sexual and aggressive urges springing from the id. These urges come into conflict with the realistic barriers incorporated in the superego. We repress the urges and conflicts – hide them from conscious awareness in the unconscious mind. We cannot consciously think about or verbalize a repressed desire but the urge is still there, driving for expression though always in conflict with ego and superego. The aim of psychoanalytic theory is to lessen anxiety and the need for neurotic exaggerated defensive mechanisms through insight – self-understanding and knowledge of the source of anxiety. Free association, dream analysis and transference are among the techniques used to help the analyst understand a patient's problems and to help the patient arrive at personal insights.

## **FREE ASSOCIATION**

In free association patients are required to let their thoughts run free, without censorship, reporting them as they occur. Patients should lie relaxed on a couch looking away from the therapist. Unexpected trains of thought, sudden blanks and unusual may give the therapist clues to the underlying thought processes.

## **ANALYSIS OF DREAMS**

ID urges and conflicts try for expressions even when we sleep and our defense mechanisms are said to relax a bit during sleep. Yet if our unconscious urges and wishes were expressed directly even in

dreams, they would be so disturbing that we would wake up. From the analysis of dreams the psychoanalysis tries to understand the particular urges which a patient has repressed. The problems that could be encountered could be:

- Use of symbols which have highly personal meanings
- Parts of the usually many illogical elements
- Parts of the dream may be forgotten

Transference involves the transfer of attitudes from other relationships to the patient's relationship with the therapist. More specifically it is usually a reenactment of the parent-child relationship. The therapist may for example be seen as a father figure by the patient and be regarded emotionally much as the patient regarded his or her own father. When the emotions directed towards the therapist are those of affection and dependence, the transference is called positive. A hostile attitude is referred to as negative transference. If it is positive it can help patients overcome their resistance they feel protected enough to uncover repressed and painful thoughts. It also helps the analyst to understand a patient's problem. Conflicts within the patient or between the patient and significant other people are re-enacted in therapy sessions and can be exposed for the patient to see and understand.

## **TERMINATION**

The analysis is not terminated until the transference situation has been resolved and a normal doctor – patient relationship is re-established. Unless the analyst combines the traditional psychoanalytic techniques with other techniques designed to teach new ways of behaving, actual behavior changes may not occur.

## **TRANSACTIONAL THEORY**

Transactional analysis focuses on the current everyday transactions between the individual and others.

## **PERSONALITY THEORY**

Transactional analysis assumes that people experience a set of drives in addition to those necessary for survival. These are stroke hunger (need for contact, attention and warmth) recognition hunger (acknowledgement of one's existence by others), structure hunger (structuring one's time, especially in cultures with plenty of leisure), leadership hunger and excitement hunger.

Transactional analysis also focuses on the various roles people play with one another. Generally speaking, the roles can be described as child (immature), parent (authoritarian), adult (rational). Miscommunications and maladaptive pattern develop when the roles are confused or when people unnecessarily adopt something less than the rational roles of which they are capable.

The most important determiner of how people spend their lives in their life script. Very early in life and with inadequate information the theory maintains people make a decision or take a position with regard to their life course or major theme. Myths and fables sometimes enter into the plots people devise for themselves – for example one can adopt a ‘Cinderella’ role or a ‘naughty boy’ role. One part of the life script has to do with whether one sees oneself as ok or not ok. People who see themselves as ok but others as not ok will tend to blame everyone else when their lives go awry. On the other hand people who see themselves but others as ok will feel guilty and worthless.

Part of the life script is also the games or strategies which people employ in their dealings with one another. One game for example is ‘kick me’. Individuals who play this game arrange matters so that they are likely to make mistakes and to get the blame for doing so. The offer or prize for most games is a feeling, usually a bad one. In other words, though their strategies for dealing with their lives people unconsciously set up situations that will result in painful feelings. The bad feelings in turn are used to justify going on with the maladaptive life script. For example, if an individual sets up a game of ‘kick me’ other people will be critical and unappreciative and the ‘pay off’ will be feelings of depreciation that individual ‘collects’ as a prize for playing the game. The feelings of depressions in turn can be used to justify a self destructive life script which may eventually end in suicide. Another example, an adolescent might act so irresponsibly with the family car that the parents react by taking away all weekend privileges then the young person would feel angry and justified in acting still more rebellious and irresponsibly.

### **CLIENT-CENTERED THERAPY**

Client-centered therapy was founded and developed by Carl R. Rogers. Rogers hold that people have the resources and strength to resolve their own problems. The therapist should not take charge but should provide the opportunity for patients or clients to develop their own improved ways of coping with the problems that arise from their discrepancies in perception.

Client-centered therapy is therefore known as a non-directive technique. The client takes the lead. In general client-centered therapy can be described as a:

1. Therapy which the focus is on the individual not the problem
2. Feelings rather than either intellect or behavior and
3. The present rather than the past.

Rogers assumes that three qualities in therapists’ attitudes are absolutely essential. Therapist must have empathy for the client, an ability to understand the client’s views and feelings. Therapist must become immersed in the client’s world and put themselves in the ‘client’s shoes’. Therapist must also give sensitive, unconditional positive regard, never criticizing and always accepting. Therapists do not judge, probe, disapprove or interpret. This accepting attitude creates an atmosphere in which clients can take courage to perceive and accept denied experiences, examine, re-evaluate and feel more positive about themselves. Finally, therapist must be genuine, open, spontaneous, caring and feeling in their dealings with their clients.

A major therapeutic technique identified with client-centered therapy is reflection of feeling. Therapists facilitate client’s awareness by reflecting the essence of the feelings they express.

## **HYPNOSIS AND HYPNOTIC THERAPY**

Hypnosis is with some clients a very useful technique for achieving immediate (but usually temporary) behavior change. Psychologists do not know precisely what causes the phenomenon.

### **DESCRIPTION**

In hypnosis the individual experiences a state of consciousness which is different from his or her ordinary waking state but also different from sleep. To induce the hypnotic state or trance, the hypnotist issues instructions and uses some means to capture the subject's attention, induce relaxation and client's strong mental imagery. The subject may be asked to look at a particular spot on the wall, fasten on the hypnotist's voice, ignore everything else and as he or she is told. The instructions help the subject to relax muscles; close the eyes and become perfectly passive except for specific commands. The mental images may be introduced. No one who is not willing can be hypnotized. Training helps, with practice one tends to go into deeper hypnotic states. One can also learn to induce a hypnotic trance in oneself, this is called autohypnosis.

### **THEORIES OF HYPNOSIS**

Psychologists today have a number of explanations for hypnotic behavior though none of them seems to fit all the significant features. Psychoanalysts who sometimes use hypnotic techniques to help patients recall childhood events tend to regard hypnosis as a state of partial regression where adult controls are suspended and impulsiveness and fantasy are aroused (Gill and Brenman, 1959).

### **THERAPEUTIC USE OF HYPNOSIS**

Hypnosis is used in a number of settings. For example, the therapists working with individuals who have gone through very disturbing events may use hypnosis to help the people 'return' in thought to the disturbing situations in order to provide a release for troubling feelings. Such techniques have sometimes been used with soldiers in wartime. Psychoanalysis at times uses hypnosis to uncover repressed or forgotten significant events in the past, although the validity of these discoveries is impossible to test. Posthypnotic suggestions are often given to handle specific problem behaviors or problem situations.

The use of posthypnotic suggestions to break unwanted habits has become quite popular. Many people can achieve control of smoking, eating, drinking; nail biting and similar activities on a temporary basis in this way. Ordinarily however, unless new and more effective habits have been substituted and practiced, the unwanted behaviors tend to return.

## **BEHAVIORAL APPROACHES TO THERAPY**

The essence of the behavior disorders are learned according to the same principles as any other behavior e.g. the study of operant conditions shows that an individual will perform behaviors that are reinforced (rewarded) and will cease to do things that are reinforced. Behavior therapists argue that their patients are suffering the consequences of acquired behavior patterns which continue to have some pay off.

## **OPERANT CONDITIONING TECHNIQUES**

The procedures used by those who use operant conditioning in behavior therapy follow the principles developed by B.F. Skinner and his followers. Operant conditioning states that when reinforcement is contingent on a response, that response is more likely to occur in the future. Behavior therapists try to shape adaptive behaviors by using reinforcement appropriately. They try to eliminate maladaptive behaviors by extinguishing them e.g. removing the reinforcement of the teacher's attention in order to stop the behavior of crawling and crouching by a three year old.

## **TOKEN ECONOMIES**

In a token economy, individuals receive objects (tokens) which they can exchange for things, services or privileges. The tokens are contingent on desired behaviors e.g. in hospitals, psychiatric patients receive rewards for performing 'normal' behaviors e.g. weekend passes, magazines, cigarettes, candy, access to television, etc. to treat certain behavior classical conditioning can be used to teach new and desired conditioned responses or to extinguish unwanted ones. (Wolpe 1976)

## **ASSIGNMENT**

Why is the study of sensory process part of the subject matter of psychology?