

B.A. (Hons) Part III

Psychology VI

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Structuralism and Functionalism**Lesson Structure**

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1.0 Objective of the Lesson

The main objective of the lesson is multi-folded. One major objective of the lesson is to make the learner acquainted with the concept of structuralism and functionalism, and their tenets. Here, learners will learn about the contributions of Wundt and Titchener to the development of structuralism. In this lesson the contributions of Chicago functionalists and Columbia functionalists have also been discussed. Here the functionalism as a system has been discussed in detail. In the end, differences between structuralism and functionalism have been given besides the summary, key words, important questions and suggested readings. The learners would be in a position to answer the questions relating to the lesson after a systematic study.

1.1 Introduction to Structuralism

There are two different ways in which the behaviour of a living organism can be described, either according to its structure or in terms of its functioning, and both points of view have been adopted in the history of psychology. Those studying behaviour from the point of view of structure are called structuralists and the other kind functionalists.

1.2 Fundamental Tenets

One of the fundamental tenets of structuralist school is that the human consciousness is the sum of various mental abilities and the analysis of consciousness requires the analysis of its constituent mental abilities. Mental elements have a special place within the structure of consciousness. Such mental elements are sensation, direct knowledge, attention, imagination and the rest. Their sum total goes to make up consciousness. Two other names for structural psychologists are existentialist and introspective psychology. Titchener adopted the introspective method and on that account it came to be known as introspective psychology.

1.3 Titchener's Contribution to Structuralism

Structuralism had its beginning in the work of Titchener, to whom it is also indebted for much of its advance. It is for this reason that the names of Titchener and structuralism are normally associated with each other. Evidently, the best point to begin a study of structuralism would be to begin with a short account of Titchener's psychological theories.

1. Scientific basis :

Titchener began by giving a scientific basis to his study as he was fundamentally a scientific thinker not inclined towards the old fashioned philosophical musings on psychology. As a result structuralism also has a scientific bias and it was on the basis of the objectivity

inherent in the scientific methodology that it was determined that mental states follow some kind of order. These states correspond to those of which the individual is conscious, and a mental state, the existence of which and individual is not conscious cannot have any existence. Because the individual himself experiences the mental state which exists within his mind, these mental states are believed to have individual existence and these state form part of his consciousness. The order of these states is given such names as mind and consciousness. They can be studied introspectively, a method the scientific nature of which cannot be questioned.

2. Experience :

The subject-matter of psychology consists of the experiences of individuals, and it studies only these experiences. These experiences depend upon the 'agent or doer' and are invariably concerned with some person. How can there be experiences when there is no individual ?

3. Nervous System :

In structuralism the nervous system is believed to be the basis of experience, for it is through the medium of the nervous system that an individual has experience. This school studies not only the experience but also the individual's nervous system and the mental processes.

4. Mind and Consciousness :

In defining the mind the structuralism school calls it the sum total of all the experiences to which an individual's life has been susceptible. But these mental experiences which take place at moments of time group together to become what is known as the consciousness. Putting it differently one can say that all the mental activity that takes place during the entire life span can be called the mind while the mental processes happening in some particular moment go to make up the consciousness. This is the basic difference between mind and consciousness. In structuralism the nature of mind and consciousness is studied through analysis because knowledge of their structure can be gained only through analysis that one can come to know the mental elements that go to make up mind and consciousness. But this analysis is introspective. An individual can himself observe his own thoughts and thereby make a scientific study of his experience. And the chief object of structuralist psychology being to gain knowledge of the mind's structure, the importance and practicability of this method becomes clear.

5. Mental Element :

The units of man's experience are the mental elements. Structuralists believed that mind and consciousness are the sum total of these elements. And the difference between the two has already been pointed out. Mind and consciousness are studied through an analysis of these elements. It is believed that mind is constructed through the union of sensation, feeling and image.

- (a) **Sensation** : It is the basis of having direct knowledge, for the latter takes place through it, that is, through sensation. All knowledge gained by the individual through his senses occurs through the medium of sensation. For example, it is possible for us to study all such actions as hearing, seeing, smelling, touching, etc. And it is for this reason that sensation is considered a characteristic element of direct knowledge.
- (b) **Affection** : The second element in the structure of the mind is affection. Affection is found in an individual's emotion; it is, in fact, the basis of emotion. Hence the elements that are symptomatic of emotion are called affections. For example, one can take the case of any emotion, such as love, hatred or pleasure, and experience the affection that lies at its root.
- (c) **Image** : The element forming part of the mind is image, which is connected with memory and imagination. Both memory and imagination form special elements in thought. And image is the basis on which memory and imagination are built, without which both are impossible. In fact memory consists in the recollection of old images, and it is on the basis of these old images that one can construct possible future circumstances and occurrences.

Four peculiar qualities are to be found in the mental elements—quality, intensity, duration and clarity. A short description of each now follows :

- (i) **Quality** : It is that characteristic which distinguishes one object from another, and common to all the three elements mentioned above. Examples of this characteristic are red, green, wet, hot and many others, all of which help to establish the distinguishing marks between various objects. If one object is red and another is green or blue then these qualities of redness and greenness help to separate one from the other.
- (ii) **Intensity** : This characteristic helps us to know something about the quantity of an object and it, too, is common to all the three characteristic mental elements. It is present in objects that differ in weight and it can be measured between the two extremes of the maximum and minimum.
- (iii) **Duration** : This characteristic is also present in each of the three mental elements and its use lies in denoting the progress, permanence or degeneration of any element from the stand point of time.
- (iv) **Clarity** : The value of this characteristic lies in pointing out the clarity and vividness with which a particular mental element is present in an individual's consciousness. It is usually viewed in connection with sensation and image and as a normal rule it is found absent in affection.

All the four characteristics mentioned above are found to exist in some degree in each of the three mental characteristics, but in addition to these there are three other such

characteristics, which are found to exist in the mental elements. Extension is one such element. The extension within which one mental element is found to exist is also a characteristic one that is related to limit.

6. Mind and Body :

Structuralism does not believe mind and body to be related in a causal relation but rather in a parallel relationship. Mind cannot cause mental change just as the body itself cannot be the cause of some mental activity. But mind and body cooperate to create conditions wherein mental activity becomes possible.

In this connection one thing that should be kept in mind is that Titchener in his expression of structuralism throws no light on the parallel relationship between the mind and body. It is often observed that when some change occurs in the body, the mind also suffers some kind of change at the same time, but it is, of course, an incontrovertible fact that no mental activity is caused by the body.

7. Attention :

In structural psychology the stress has been on the study of content. It has been assumed that every human individual is a unit which can submit to psychological study. Hence attention is studied more as a pattern of consciousness. Attention has been defined as the pattern formed in consciousness. Within the consciousness is formed such a pattern of experiences that the individual's attention focusses on some object or idea. The structuralist definition of attention pays no attention to the functional aspect.

8. Introspective method :

Introspection is the method selected for study in structural psychology. However, according to Titchener, it is not only a method but a variety of observation. And because the basis of structural psychology is definitely scientific hence its methodology also should be based on observation. The observer of mental experiences, in the study of psychology, is the same person to whom those mental experiences belong or to whom they are related. Putting it differently, when a particular individual observes his own mental experiences, the method he uses is called introspection.

One of the chief objections to introspection is based on the fallacious belief that whatever nonsense a person talks while he is engaged in the analysis of his own mental experience is part and parcel of all psychological study. Refuting this belief Titchener has pointed out that introspection is a kind of observation that leads to the individual's expression of views in a particular direction and on a pre-determined subject or topic. In this way, Titchener succeeded in limiting and defining the scope of the introspection method.

One other fact that should be kept in mind in connection with the study of psychology is that the person chosen for introspective study should be acquainted with the technique of this method. It is for this reason that structural psychology lays emphasis on training pertaining to use of the introspective method. A person trained in the secrets of this method can provide a

scientific report on his introspection with the result that it becomes possible to make an accurate and intelligible analysis of his report. Hence, his mental experiences can be accurately studied. The average individual unacquainted with its mysteries can never provide an intelligible report on his introspection, cannot describe his mental processes, and neither can he realise the importance of the different mental elements. In structuralism no importance is attached to persons and things, because the only thing important is the admixture of mental elements. Leaving individual differences aside, structuralism concentrates on introspective analysis.

1.4 Evaluation of Structuralism

Structuralism made a positive contribution to the science of psychology. Psychology became a science with its existence. But like any other science psychology had to face tough oppositions.

1. The orthodox opponents, pointed out that psychology was only limited to the analytical frame-work of conscious experience. Titchener had not interest in practical application of psychology. This was one of the most important limitations of his system. He had no interest in the applied branches of psychology, as such, he excluded child psychology, animal psychology, social psychology and abnormal psychology from the main stream of the system.
2. His method of introspection also became a big target of criticism. The method of introspection was criticised on the following grounds :
 - (i) Introspection is no more introspection, rather it is simply retrospection because it takes some time to report the content of consciousness or conscious experience. But Titchener attempted to overcome this criticism. According to him this limitation can be avoided through trained introspectionist.
 - (ii) Another shortcoming of introspection was that, the act of introspection might change the experience itself. For example, if one start inspecting the experience in anger, the state of anger might diminish the intensity of anger.
 - (iii) This method lacked the consistency of result. Different psychologists working with this method in different laboratories were getting different results. Boring has also pointed out that the method of introspection is not reliable. This difficulty in practice tend to confirm the above difficulty in principles.
 - (iv) Difficulty of language : Sometime the subject feels difficulty in expressing his conscious experience due to problem of language. Titchener maintained that agreement would be reached, when all introspectors had learned to do their work as accurately and carefully as those at Cornell.

- (v) There was growing evidence that some data which should belong to the field of psychology could not be obtained by introspection. Psychologists were getting interesting results despite the fact that animals could not introspect.
 - (vi) There was growing evidence that some data which should belong to the field of psychology could not be obtained by introspection. Psychologists were getting interesting results despite the fact that animals could not introspect.
3. Further the key structuralist method, like Titchener's definition of psychology, excluded too much that should be included in the field.
 4. Many critics have concluded that since introspection was not everything, it was nothing. It is indeed difficult to define introspection, but it is also difficult to define psychology exactly, if we do not reject the study of introspection.
 5. The Gestalt psychologist also protested the elementalistic analysis of structuralism. They pointed out that psychological phenomena must be studied as a whole.

Despite of all the criticisms, one cannot overlook the fact that it was structuralism which granted psychology a status of independent and experimental science. Wilhelm Wundt was the pioneer of structuralism, and Titchener improved his viewpoints.

1.5 Comparison Between Wundt and Titchener

Wundt was the teacher of Titchener at Leipzig University in Germany. Titchener had come from Britain (Oxford University) to learn new psychology from Wundt. After returning to Oxford, he came to Cornell University in America where he founded structuralism, the very first formal system in psychology. In this system he modified and expanded Wundt's view regarding psychology. In fact, he was more Wundtian than Wundt himself. It was natural, therefore, that Titchener would have possessed many similarities with his teacher, Wundt. Some of the major similarities are as under : Wundt had actually prepared the map of structuralism.

1. Like Wundt, Titchener pointed out that psychology was the study of conscious experience. Thus the subject matter of psychology was consciousness for both these psychologists.
2. Both these psychologists considered introspection, experimentation and observation to be the primary methods of psychology. Like Wundt, Titchener also made it explicit that introspection or self-observation was the part of the experimentation. Both emphasized upon the necessity of having trained introspectionists.
3. Like Wundt, Titchener believed in psychophysical parallelism. Therefore,

regarding mind-body issue both these psychologists opined that there was clear distinction between mental events and physical events. Neither caused the other and there was no interaction between them. Both were running parallel to each other and changes in one were accompanied by changes in other.

Despite these similarities, there were some points of dissimilarities between Titchener and Wundt. Following were the major points of dissimilarities :

1. Wundt held that there were two elements of conscious experience – sensations and affections. Titchener pointed out that there were three elements of conscious experience – sensations, affections and images. In fact, images were not regarded as an independent category of conscious element by Wundt rather he considered it to be occurring due to blend in sensations.
2. Wundt held that there were two primary attributes of conscious experience— quality and intensity. Titchener extended the number of attributes to four by adding duration and clearness or clarity. One more attribute, that is, extensity had also been later added by Titchener. The attribute of extensity, however, applied only to vision and touch. Titchener also made it clear that the attribute of clarity did not apply to affection or feeling.
3. Titchener rejected the tri-dimensional theory of feeling of Wundt. Of the three dimensions of feeling, namely, pleasant-unpleasant, strained-relaxed, excited calm, Titchener rejected the last two dimensions because they were not feeling at all rather they were kinesthetic experience. Later, Titchener rejected even the pleasant-unpleasant attribute of feeling (Henle, 1974).
4. Titchener criticised the applied aspects of psychology. He held that psychology is pure and general science, having no practical aims. Therefore, the applied aspects of psychology such as child psychology, animal psychology and abnormal psychology which were springing up at that time, were ignored by Titchener saying that they would not yield any psychological information. Wundt, on the other hand, did not do so and he insisted upon the fact that the behaviour of children and abnormals yielded valuable psychological information.
5. Wundt was an institution providing training to a vast number of psychologists and expanding the scope of psychology from armchair speculation to experimental laboratories. Titchener was basically an individual who did the same thing but in a very limited way. Thus we find that despite some similarities, differences exist between Wundt and Titchener.

1.6 Concept of functionalism

Functionalism was the first school of psychology which flourished in America. Its development was initiated by William James who is supposed to be the greatest psychologist

of America. Woodworth (1948) has pointed out that, A psychology that attempts to give accurate and systematic answer to the question, what do men do ? And why do they do it ? is called functionalism. The functionalist also studies functional relationships between antecedents and behaviour or consciousness; here function is used in mathematical sense. American psychologists influenced by evolutionary theory and a practical spirit have been concerned with the utilities of consciousness and behaviour. Thus it has tend to be functional.

Functionalism as a school arose as a protest against structuralism. Many antecedent were working behind the foundation of structuralism. These antecedent forces can be divided into two parts—

- (i) Evolutionary theory of functionalism, and
- (ii) Psychology of William James.

1.7 Evolutionary Theory to Functionalism

Charles Darwin (1809–1882) created one of the greatest controversies in intellectuals and religious circles. The publication of "The Origin of Species" in 1859 rose a climax of unpleasantness among big circle of people. He published "Expression of the Emotion in Man and Animals" in 1872. Darwin believed that life is a struggle for existence. In 1885 Spencer published his famous book "Principles of Psychology". For him evolution involved a change from infinite homogeneity to definite heterogeneity having a continuous process of integration and differentiation. Such process involve adjustment and adaptation to external environment.

Spencer had a broad categorization of evolutionary theory and to draw analogies to society. Spenser saw clearly that the kind of changes that occur through learning in the life of the individual could occur through selection in the life of the species.

Sir Fransis Galton (1822–1911) was influenced by Darwin to study the problems of heredity in human beings. It was his aristocratic attitude to control heredity. Galton's Hereditary Genius (1869–1883) contained studies of individual differences in intelligence.

1.8 Psychology of William James

William James has been regarded as one important pioneer of functionalism. It is said that he founded functionalism as a system (but not as a school). In his two volumes 'The Principles of Psychology (1890), he laid the foundation of functionalism in the form of a system. James view was that behaviour is adaptable and in order to survive, psychologically, an organism must be able to adjust to his environment. This view became the central theme of functionalism. It was also held that in adaptation both mind and body are involved. James views on pragmatism had also a direct influence on functionalism.

Thus evolutionary theory of Spencer, Darwin and Galton, were major force that

influenced functionalism. William James had also been influenced by such evolutionary theories.

1.9 Chicago Functionalists

1.9.1 John Dewey (1859–1952) :

John Dewey is more known for his philosophy of education that emphasizes the importance of activity in schools. He also contributed a lot to psychology by publishing "How we think", in which he describes thinking as an adaptation to a novel problematic situation. Thinking only occurs when an organism is thwarted by some external obstacles. His most important contribution is his classic book "The Reflex and Concept in Psychology" which criticizes that behaviour can not be split up into pieces of behaviour. Response and stimulus are correlative and the arc must be considered as a whole, a purposeful, adaptive, useful whole.

1.9.2 James R. Angell (1869–1949) :

According to Angell, functionalism studies the mental operations of consciousness in contrast to a psychology of mental elements developed by structuralism. It is concerned with the nature and functions of mental processes with emphasis on how these processes work. Functionalism conceives consciousness not as just passive receptacle for experience, but as engaged in "adaptive reaction to a novel situation". According to him functionalism is the psychology of the total relationship of organism to environment including all mind-body functions. He emphasized the biological processes of change and adjustment in the environment.

Harvey A. Carr (1873–1954) and G. H. Mead. Carr's important theoretical contribution to functionalism was that he considered that subject matter of psychology is mental activity and mental activity is adaptive in nature. Mental activity is the manipulation of certain experiences in order to attain certain ends. Every adaptive act involves three acts :

- (a) motivating stimulus,
- (b) a sensory situation,
- (c) a response.

Organism is always relevant to the situation; all behaviour is motivated. The main features of functionalism according to Carr are :

- (i) functionalism deals with "whys" and "hows" of contents in the light of their relation to their surrounding contents,
- (ii) the context includes the biological process of adjustment,
- (iii) functionalism translates mental processes into psychological ones and vice-versa.

1.10 Functionalism as a System

Functionalism as a system flourished and reached the highest peak of its popularity during the era of Carr. He was the chairman of the department of psychology at Chicago University, the main tenets of the system of functionalism :

1. Definition and Subject Matter :

Psychology is the study of mental activity, which is the generic term for adaptive behaviour. According to Carr (1952), the adaptive act is a key concept of psychology. It involves three essential phases :

1. a motivating stimulus
2. a sensory situation, and
3. a response that alters the situation to satisfy the motivating conditions.

Motive, as it has been defined are conceived of, not as necessary to behaviour but a directive force that in general determine what we do.

Carr thought that both psychology and physiology studied adaptive behaviour. The two disciplines were to be distinguished in terms of kind of variables each studied. Carr made the distinction thus :

Psychology is concerned with all those processes that are directly involved in adjustment of the organism to its environment; while physiology is engaged in the study of vital activities, such as circulation, digestion, and metabolism that are primarily concerned with the maintenance of the structural integrity of the organism.

Carr has regarded consciousness as an artificial abstraction "that has no more independent existence. The concept of consciousness is similar to other abstract concept like intelligence, will-power, and crowd mind etc. Thus we see Carr moving to a position between that of earlier functionalists and that of the behaviourists.

2. Postulates :

The postulates of functionalism, like those of early psychological systems, were not explicitly stated. However, assumptions stand out clearly.

- (i) Behaviour is intrinsically adaptive and purposive.
- (ii) All sensory stimuli affects behaviour – not just motive as denied by Carr, there was no absolute between a motive and any other stimulus, a motive might become an ordinary stimulus after it was resolved as motive.
- (iii) All activity is initiated by some sort of sensory stimulus; not response occur without a stimulus.
- (iv) Each response modifies the stimulus situation. Behaviour, as pointed by Dewey, is essentially a continuous and coordinated process.

3. Methodology :

Carr accepted different methods for studying mental activities. Functionalism accepted the method of structuralism, that is, introspection and added observation. He also accepted experimentation to be the most desirable method of gathering data, but he also mentioned that in human studies, it is difficult to achieve complete control. He also accepted the method of common observation as a source of getting information about different events. The best method depends upon the nature of problems.

4. Mind-Body Position :

Here Carr followed Dewey, rather than James, and minimized the problem. He felt that there was no need for a detailed solution because there was not real problem. He described mental activity as being psycho-physical one, it is physical in the sense that individual has some knowledge of the activity. It is physical because it is reaction of the physical organism. Thus for functionalists, the mental activity did not resist as a separate entity as it existed for structuralism. Functionalism has also made it clear, that mind and body could not be separated, and they in effect belong to same whole. However, the two interacted. The early functionalists, like Angell, might tend toward a parallelism, or they might take an interaction position as William James did in his early writings. However, Carr did not think that psychology, as an imperial and natural science, needed to concern itself with metaphysical problems. He did point out the inadequacy of psycho-physical parallelism adopted by Titchener, and the general functionalist position was in turn vigorously attacked by Watson as being in reality interactionist.

5. Nature of Data :

Although in its stress organismic adjustment to the environment, functionalism had a behaviouristic flavour, it did not eliminate introspection as a method of obtaining data. Its data were both objective and subjective, with increasing stress on the objective as functionalism age.

There are simple studies of animals in the functionalists experimental literature to illustrate the use of objective data. On the other side, Carr's interest in perception and thinking illustrates his use of concepts that might not fit within a behaviourist frame-work, perception as Carr used the word referred to the apprehension of the immediate environment through current stimuli. Thinking referred to apprehension of a situation that was not immediately present in the environment. Introspective data were acceptable in the study of either.

6. Principles of Connection :

The principles of connection are the principles of learning, and as such were considered as the core of functionalist research programme. Learning, basically, was a process of establishing associative connections or organizing elements of behaviour through association into new and large unit.

Much of the work that followed from the Chicago tradition could not be distinguished from the work that might have followed directly from the associationistic tradition. Notable

examples are that of the verbal learning work done by Mc. Escoch, Melton, and Underwood. Their work on nonsense syllables follows logically from the work of Ebbinghaus, who has already been an associationist. The diffused 'Schools' of associationism and functionalism are often difficult to distinguish.

Hilgard and Bower (1975) have summarized functionalists position on learning in a very clear cut manner.

According to them, the basic functionalists principle involved in learning process were :

1. There are individual difference in the capacity of learner.
2. Differential practice leads to different forms of learning curve.
3. Motivation is essential for learning.
4. The degree of meaning is a dimension over which material can be scaled from the most meaningful to the most nonsensical.

6. Principles of selection :

Carr also concentrated upon mechanisms of behaviour selection. He regarded attention, motives and learning to be the three primary agents of behaviour selection. He considered attention as sensory-motor adjustment. It tend to facilitate perception. Motives were defined as a relatively persistant stimulus. The directed action, hunger is a motive in the sense that it directs our behaviour in a certain way. Learning was regarded as basic agent of behaviour selection and it operates in three ways :

- (i) Some adaptive mechanisms or associations are acquired through experience.
- (ii) As associations or adaptive mechanisms are acquired other aspects of stimulating situation somehow come to be associated with response and in future, become capable of eliciting it.
- (iii) Some adaptive mechanism or associations are learnt because they are imposed by society. For example, we learn to have to show affection toward certain castes or class of people.

1.11 Columbia's Functionalists

The functional psychology at Columbia University, is important from the view. point of contributions, of most influential psychologist, namely James Mc Keen Cattell, Edward Lee Thorndike and Robert Sessions Woodworth. The contributions of the mentioned psychologist have been briefly discussed.

1.11.1 James Mc. Keen Cattell :

James Mc. Keen Cattell was son of William Cattell who was president of Lafayette College. He completed his undergraduate course from Lafayette College and went to England and Germany in 1880 for two years. Then he returned to America for a year and studied at

Hopkins University under G. S. Hall. In 1883 he went to Leipzig and served as a pupil-assistant to Wundt for three years. Then, Cattell, Professor of Psychology at Pennsylvania in 1888 and remained there till 1899. Some important contributions of Cattell in the field of Psychology are :

1. Reaction Time :

Cattell had started work on reaction time at John Hopkins University and took them to Leipzig University. He did many experiment in different field of reaction time.

2. Association :

Cattell also conducted several researches on association. An association time was one which elapses between preparation of a word by the experimenter and its related associated words fold by the subject. He studied two types of association—first constrained association, and second free association.

3. Perception and Reading :

In the field of perception he was mostly interested in the visual perception particularly the revival time of visual perception. Its findings revealed that time for each item decreases upto simultaneous presentation of five objects.

4. Psychophysics :

Cattell did work with Fullerton in the field of psycho-physics. He also substituted Webers law by a law of the square root.

5. Order of Merit or Ranking Method :

This method was discovered by him in 1902 in his study of placing shades of grey in order. He selected 200 shades of grey and the subjects were required to order those shades in degree of brightness. Later, this method was widely applied in study of personalities and psychometrics fields.

6. Individual Difference :

Cattell was also interested in the study of individual differences. As a consequence, he published in 1890 a research paper on mental test and measurement. On the whole Cattell's psychology can be broadly said to be psychology of human capacity.

1.11.2 Edward Lee Thorndike (1874–1949) :

E. L. Thorndike has been another eminent Columbia psychologist, who can also be regarded as an important functionalist. He was also called a connectionist. He received his training in America. He conducted research on animals at Harvard University. He was encouraged by Cattell in his work on chickens. He conducted experiments on cats, dogs and monkeys on puzzle box. He was accorded Ph. D. on the thesis Animal Intelligence. Under the persuasion of Cattell he diverted his experiments on human learning. In 1902 he became interested in Educational Psychology. In 1903 he published a book entitled 'Educational

Psychology'. In 1904 he published 'An introduction to Theory of Mental and Social Measurements. He observed on the basis of his experimentation on animals that learning occurs mechanically with the gradual elimination of wrong responses. Behaviour in a new problem situation is initially random. The random behaviour and its consequences lead to mechanical connections between stimuli and responses. Learning is acquired by blind trial and error.

1.11.3 Robert Session Woodworth :

R. S. Woodworth (1869–1906), was born in Massachusetts. He studied Mathematics and taught it in high school. He started his profession when Thorndike was with his chickens and cats. He received the first American Psychological Foundation Gold Medal Award in 1956; published "Dynamics of Behaviour in 1958. He started revising his comparative schools of Psychology in 1964. He had a distinguished career in psychology. He carried on many experiments and produced a voluminous book on experimental psychology. His functionalism is based on the dynamic view of behaviour. He emphasized the importance of motivation in behaviour. He believed that psychology should not only confine to the observation of behaviour of the organism but it must study the dynamics of behaviour. Stimulus response chain does not explain the causation of behaviour to be introduced organism between stimulus response chain. The stimulus stimulates the organism which responds to the stimulus in accordance with inner drives. He modified S. R. Chain into S. O. R.

Woodworth's systematic viewpoint was first expressed in Dynamic Psychology in 1918. There are may resemblance between Woodworth's position and that of the Chicago functionalism. However, he developed an independent position of functionalist in Chicago.

Woodworth shares antecedents with Chicago's functionalists. His functionalist eclecticism is extreme, as he tried to take the best feature from all systems. His main system in his concept of mechanism, which has more or less the same meaning as Carr's adaptive act. Mechanisms for him were positive responses or set of responses. Drives were closely related to mechanisms. He defined drive as internal condition that activate mechanisms.

1.12 Evaluation of Functionalism

Functionalism was criticised on the following grounds :

1. Some critics have said functionalism has not properly defined its system. Titchener has also objected to the vague use of the term functionalism. He found its use in two senses : First to mean activity or a use, and second in mathematical sense.

Although functionalists have used the word function in more than one way, there

is nothing wrong with that if the two usages are both acceptable and are not confused.

2. The functionalists have also failed to distinguish carefully between pure and applied science. But functionalism should not be criticised on this ground, because many important relationships have been discovered and some of the most important applied findings have been incidental results of pure research. Thus pure-applied distinction should not be a ground of criticism for this system.
3. The functionalists have been criticised for using the ultimate consequences of behaviour to explain behaviour. In the absence of relevant evidence, such as explanation would be teleological. But Woodworth and Carr were careful to disclaim teleology and to postulate only current stimuli as casual. Further, this criticism is not justified in the present context because functionalism used only teleological concepts in describing its data, but never provided teleological explanation.
4. The structuralists, who preferred contents to functions, have pointed out that the study of functions, utilities and values was such that none could be observed introspectively.
5. Henle (1957) has criticised functionalism on the ground of being too eclectic. In fact, they have been spirities and non-descriptive electics. Eclecticism means patching together something best taken from different systems. Despite this tendency, functionalism never developed as a strict and compact system like structuralism, behaviourism and Gestalt psychology.

1.13 Difference Between Structuralism and Functionalism

The following point of difference may arise between the two above the systems :

1. Structuralism studies elements of consciousness; whereas functionalism studies mental process or functions as activities leading to practical consequences.
2. The structuralist were concerned with pure analysis of consciousness or mind. Functionalism on the another hand, was more concerned with the utilitarian and common sense issues in psychology. The functionalist were more interested in applied areas or fields of psychology, e.g. educational psychology, animal psychology, mental testing etc.
3. The structuralist held that functions could not directly appear in consciousness, and hence that could not be the object of introspective analysis. Functionalists accepted the method of introspection, but also pointed out that introspection is not the only method.
4. Structuralism and functionalism also differ on mind-body. The functionalism

started with mental activity that was itself dualistic. In other words it was psycho-physical. They maintained that in any adaptive mental act we had the totality to both physical and psychical events. On the other hand, structuralists mental activity could be completely separated from physical activity and could be studied independently.

1.14 Summary

(A) Structuralism :

1. Titchener was an English psychologist who went Germany to study psychology from Wilhelm Wundt at Leipzig University. After returning from Germany, he preferred to settle in America rather than in Britain. He established a system at Cornell University in America which was called as structuralism. According to structuralism the systematization and explanation of elements occur via nervous system. It is purely a mentalistic approach to the problems of human behaviour and experiences. Consciousness was defined by Titchener as the sum total of a person's experience as they are at any given time. According to Titchener the aim of the psychologist is to study mental elements.
2. Titchener's structural psychology or structuralism emphasized that psychology was the study of experience dependent upon the experiencing person. In other words, for him, psychology was the study of conscious experience. He held that there were three elements of consciousness—sensations, images and feelings or affection. Later on, he dropped feeling as an independent category of element. He also rejected Wundt's tri-dimensional theory of feeling. Towards his last years, he further simplified his system by concentrating upon the sensory experience or sensation to be the only primary element of conscious experience. He recognized four basic attributes of conscious experience. They were : quality, intensity, clarity and duration. Apart from these four, he also held extensity to be an attribute of experience but this applied only to vision and touch. He also made it clear that affection or feeling did not possess the attribute of clarity.
3. For Titchener, introspection and experimentations were the primary methods of psychology. He also stressed the fact that introspection can be scientifically carried out only by well trained observers. He also drew attention towards a common error called stimulus error made by introspectionist. By stimulus error he meant to concentrate upon stimulus or object rather than upon conscious experience generated by that a stimulus. A trained observer is always aware of such error and, therefore, he tries to avoid such error.
4. Titchener's viewpoints regarding thinking was also highly important. He criticised the experimental findings of Wurzburgers by emphasizing that thought was not

imageless as they had reported. Their findings that thinking was imageless was due to their faulty or incomplete introspection. Therefore, he emphasized upon sensory and imaginal nature of thought process.

5. Like Wundt, Titchener believed in principle of psycho-physical parallelism. Regarding the mind-body issue, he stated that the physical events and mental events ran parallel to each other and the change in one was followed by change in other. But there were no interactions because they were completely different from each other.
6. The serious criticism of structuralism was regarding its method of introspection. Critics held that the method of introspection or self observation was inadequate on at least four grounds. Likewise, they also held that structuralism was too self contained system keeping itself limited to the analysis of conscious experience. After all, what was the utility or function of such conscious experience ? never explained by structuralism.
7. The two gaint originators of structuralism, namely, Wundt and Titchener, were having many points of similarities and dissimilarities. Both held that the subject matter of psychology was conscious experience, its method was introspection and mind-body were parallel to each other without having any interaction. Despite these similarities, there were dissimilarities. Wundt held that there were two independent categories of element of conscious experience (sensations and feelings) whereas Titchener held that they were three, namely, sensation, feelings and images. Whereas Wundt made his tri-dimensional theory of feeling a central one, Titchener outright rejected this theory. Wundt had some inclination towards practical applications of psychology whereas Titchener completely rejected applied aspects of psychology.
8. Although structuralism gave psychology an independent status as an experimental science, its fate was not bright. Today, it is no longer alive. For us, it is simply the dim memory of psychological past at Leipzig University as well as at Cornell University. However, the method of introspection, in different forms is also alive even today in the study of experience.

(b) Functionalism :

1. The development of functionalism as a system has several antecedent forces. Out of these forces, the evolutionary principles of Spencer, Darwin and Galton on the one hand and the psychology of William James on the other, have been the primary ones. For Spencer evolution involved a continuous process of integration and differentiation. Such processes are nothing but another form of adaptation and adjustment to external environments. Appreciating the stand of Spencer, Darwin pointed out that life is a struggle for existence and only better

equipped or fit individuals have more chance of survival and for reproduction through natural selection. Galton placed much emphasis upon the study of individual differences. All these evolutionary principles were a direct inspiration for psychologists to study the concept of adaptive act and individual difference (enough for them to be called functionalists) William James has been the forerunner of functionalism. His pragmatism has been a major source of inspiration for functionalist's emphasis upon utilitarian aspects.

2. Functionalism was founded at the University of Chicago by John Dewey and his student, James Angell. Harvey Carr of the same University was its developer. In 1896 John Dewey published a short paper entitled The Reflex Arc Concept in Psychology which marked the starting point of functionalism as a definite movement. In this paper he made an attack on the elementalism of structuralists and emphasized that psychological activity should be studied as a whole. Thus he advocated the molar approach rather than molecular approach to understanding the adaptive function. James Angell became the chairman of the department of psychology when Dewey left for Columbia University to join department of philosophy as professor. In 1906 presidential address to American Psychological Association he outlined three conceptions of functional psychology. First, functionalism was contrasted with structuralism. Second, functional psychology was the psychology of fundamental utilities or consciousness. Third, functional psychology was regarded as the typical method of dealing with the mind-body problem. During the regime of Harvey Carr who later became chairman of the department of psychology at Chicago, the functionalism reached the peak of its popularity. He emphasized that adjustment or adaptations were the main tenets of functional psychology. In fact, his viewpoints fully established functionalism as a system.
3. As a system, functionalism made its position clear on several aspects of psychology. Regarding definition and the subject matter, it outlined that psychology was the study of mental activity or adaptive behaviour. In other words, psychology did not deal with elements or contents but with process. As to its postulates, functionalism's basic assertion was that behaviour, initiated by some sensory stimulus, is continuous adaptive and purposive one. Regarding mind body problem, functionalism regarded a mental activity as being psychophysical, that is, partly physical and partly psychical. Obviously, functionalists' stand was dualistic but still different from structuralists dualism. Regarding the nature of data, functionalism accepted both objective data as well as subjective data. However, as functionalism advanced in age, it leaned more towards objective data. For functionalists, the principles of connection were nothing but the principles of learning which they explained with the various laws of

- association. Regarding principles of selection the functionalists depended upon attention, motives and learning which were regarded as three primary agents of behaviour selection.
4. Apart from Chicago functionalism, there was another functionalism at Columbia University. In fact, R. S. Woodworth had brought functionalism at Columbia University although two other names such as J. M. Cattell, and E. L. Thorndike are also frequently mentioned as Columbia contributors. Although there were many similarities between Chicago functionalists and Columbia functionalists, the latter were different in the sense that they did not show much adherence to the analytical practice of associationists nor did they show any inclination towards nonsense syllable experiment. Columbia functionalists were also more honest to their evolutionary foundations than their Chicago functionalists. Columbia functionalists also made S-O-R formula (and not simply S-R formula) very popular in psychology.
 5. Functionalism has also been criticized for its certain lapses. There have been five important criticisms. (i) First criticism was related to the diverse uses of the term function. (ii) Second criticism was related to the fact that the study of functions, utilities and values (emphasized by functionalism) could not be the subject matter of psychology because none could be observed introspectively. (iii) Third criticism was due to functionalists' failure to make a clear cut distinction between applied aspect and pure aspect of psychology. As we know, they had given more emphasis upon applied aspect without making it distinct from pure science. (iv) Fourth criticism was that functionalism in emphasizing upon the goals and utilitarian concepts had become teleological and, (v) Fifth criticism has been provided by Henle (1957) who had pointed out that the functionalism had become too eclectic.
 6. Functionalism lodged protest against the structuralism and hence, it differed from the latter. Four basic differences have been outlined. First distinction was that structuralism studied the elements of static consciousness whereas functionalism studied mental processes or activities leading to practical consequences. Second distinction was that structuralism restricted itself to the pure analysis of mind or consciousness whereas functionalism was un-concerned with utilitarian and common sense issues in psychology. Third distinction was that structuralism mainly adopted introspection as its chief method to study elements of consciousness whereas functionalism accepted introspection no doubt but it maintained that introspection was not the only method. Fourth point of distinction was related to the different stand taken by the leaders of the two schools on the issue of mind-body problem. Structuralists believed in doctrine of psycho-physical parallelism whereas functionalists

considered an adaptive or adjustive act to be psychophysical, that is, partly physical and partly psychical and the two could not be separated from each other because the adaptive act involves the totality of both psychical and physical events.

7. Today functionalism as a formal and distinct school does not exist. It has been absorbed into the mainstream of psychology. Out of many reasons for losing its prominence, the rise of other dominant schools such as behaviourism and Gestalt psychology is frequently cited as one important reason. Although functionalism does not exist, its impact has been clearly felt in at least two areas, namely, in the field of learning and memory as well as in the field of mental testing. In this sense, we can say that functionalism has taken rebirth.

1.15 Key words used

Structuralism

adopted

introspective

susceptible

sensation

impossible

intensity

sensation

expression

postulates

functionalism

Behaviour

fundamental

associated

analysis

affection

construct

characteristic

introspection

occurring

intrinsically

observation

Organism

attention

consciousness

elements

imagination

circumstances

duration

nonsense

attributes

methodology

mechanism

1.16 Questions for exercise

1.16.1 Short answer type question :

1. Evaluate structuralism.

Ans : See 1.4

2. Evaluate functionalism.

Ans : See 1.12

3. Distinguish between structuralism and functionalism.

Ans : 1.13

1.16.2 Long answer type questions :

1. Discuss the major contributions of structuralism.

Ans : See 1.3 and 1.4

2. Give comparison between Wundt and Titchener.

Ans : see 1.5

3. Discuss and Evaluate functionalism as a system.

Ans : see 1.10 and 1.12

4. Discuss the contributions of Chicago functionalists.

Ans : 1.9

5. Discuss the contributions of Columbia's functionalists.

Ans : see 1.11 to 1.11.3

1.17 Suggested readings

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|----|---------------------------------|---|---|
| 1. | Marx and Hillix | : | Systems of Psychology |
| 2. | Sharma, R. N | : | History and Schools of Psychology |
| 3. | Woodworth, R. S & Shuhan, M. R. | : | Contemporary Schools of Psychology |
| 4. | Heidbreder, E. | : | Seven Psychologies |
| 5. | Schultz, D. P. | : | A History of Modern Psychology |
| 6. | Wolman, B. B. | : | Contemporary Theories and Systems in Psychology |

Behaviourism

Lesson Structure

- 2.0 Objective of the Lesson
- 2.1 Introduction to Behaviourism
- 2.2 Tenets of Watsonian Behaviourism
- 2.3 Criticisms of Watsonian Behaviourism
- 2.4 Post Watsonian Behaviourism
 - 2.4.1 Edwin R. Guthrie
 - 2.4.2 Clark L. Hull
 - 2.4.3 B. F. Skinner
 - 2.4.4 Edward Chance Tolman
- 2.5 Difference Between Early Behaviourism and Later Behaviourism.
- 2.6 Summary
- 2.7 Key Words Used
- 2.8 Questions for Exercise
 - 2.8.1 Short Answer Type Questions
 - 2.8.2 Long Answer Type Questions
- 2.9 Suggested Readings

2.0 Objective of the Lesson

There are several objectives of the present lesson. One major objective of the lesson is to point out the tenets of Watsonian behaviourism. Another objective of the lesson is to throw light on the contribution of post-Watsonian behaviourism. In this connection contributions of Guthrie, Hull, Skinner and Tolman will be discussed. Besides a summary, key words, questions for exercise and suggested readings will be given in the end so that conceptions of the learner might be tested. It is hoped that the learner must be benefitted while going through lesson thoroughly.

2.1 Introduction to behaviourism

Watson is believed to be the father of the behaviouristic school. In 1925 he published a