The Bases Of Human Behaviour

• Evolution refers to the change over successive generations of the genetic make-up of a particular animal population. The central idea of an evolutionary perspective to animal traits is that animals species are changeable rather than fixed and that change is likely to be caused by the process of natural selection.

• Evolutionary changes are passed from one generation to the next within a species. This process proceeds at a very slow pace.

• Due to the process of evolution present day we human beings are different from their ancestors in three ways:

(i) We human beings now have a bigger and developed brain with high quality cognitive capacity.

(ii) Ability to walk upright on two legs,

(iii) A free hand with a workable opposing thumb.

• We human beings are product of our biological and cultural roots. Our biological structure is a main determiner and this structure we inherit in the form of body and brain. Individual's biological system determines the limits but these limits will be realised or not depends on his/her cultural system. The culture provides us with different experiences and opportunities of learning. Individual's personality is basically the product of these biological and cultural factors.

• The genotype or genetic potential can only be expressed by interacting with the environment, or nurture Thus, the behaviour actually observed the phenotype, results from the joint action of nature and nurture.

• Studies that change the environment or nurture by impoverishing or enriching it, attempt to unravel the intertwined factors of nature and nurture. Impoverishment studies show that, for some behaviour, there is a critical period during which certain environmental features must be present if the behaviour is to develop. Studies of the effects of enriching the environment sometimes show a favorable influence, but sometimes there is no effect.

• Sleep and wakefulness are two states of consciousness that we all experience. During the state of wakefulness we are aware of our own perceptions, thoughts, feelings and sensations as well as being aware of the external world. It is the state of

awareness of ourselves and the world around us. Sleep has been divided into four stages, moving from light to deep sleep.

• The nervous system is a complex network of neural cells that carry messages and regulate bodily functions and personal behaviour.

A. The individual cells of the nervous system (neurons) transmit electrical signals along the length of the neuron.

B. Chemical substances called neurotransmitters transmit neural messages across the gap (synapse) between the axon of one neuron and the dendrite of the next.

C. The central nervous system is composed of the brain and spinal cord. The peripheral nervous system carries messages to and from the rest of the body. It consists of the somatic and autonomic nervous systems:

1. The somatic nervous system carries messages from the sense organs, skeletal muscles, and joins to the central nervous system, and carries messages from the central nervous system to the skeletal muscles.

2. The autonomic nervous system regulates the visceral organs and other body functions, motivation and emotional activity.

• The brain has three basic parts: the hindbrain, the midbrain, and the forebrain.

A. The hindbrain consists of the medulla, the pons, and the cerebellum.

1. The medulla controls breathing and a variety of reflexes.

2. The pons is concerned with balance, hearing, and several parasympathetic functions.

3. The cerebellum is chiefly responsible for maintaining muscle tone and coordination of muscular movements.

B. The midbrain is a center for reflexes related to vision and hearing.

C. Most cognitive, motivational, and emotional activity is controlled by the forebrain, which includes the thalamus, hypo-thalamus, limbic system, and cerebral cortex.

1. The thalamus is a switching station for routing sensory information to appropriate areas of the brain.

2. The hypothalamus and limbic system are involved with our motives and emotions.

3. The largest part of the brain is the cerebral cortex, made up of two cerebral hemispheres connected by the corpus callosum. The cortex controls conscious experience, intellectual activities, the senses and voluntary functions.

D. Each part of the brain interacts with the entire nervous system, and the parts work together in intellectual, physical and emotional functions.

• While the nervous system forms the primary biological basis for behaviour and mental processes, the endocrine system of hormone-secreting glands influences emotional arousal, metabolism, sexual functioning and other bodily processes.

A. Adrenal glands secrete epinephrine and norepinephrine, which are involved in emotional arousal, increase heart rate and metabolism.

B. Islets of Langerhans secrete glucagon and insulin, which control blood sugar and energy levels.

C. Gonads produce sex cells (ova and sperm) for human reproduction, and estrogen and testosterone, which are hormones important to sexual functioning and the development of secondary sexual characteristics.

D. The thyroid gland secretes thyroxine which controls the rate of metabolism.

E. Parathyroid glands secrete parathormone which controls the level of Blood Calcium and nervous activity.

F. The pituitary gland secretes various hormones that control the activities of other endocrine glands and have important effects on general body processes.

• Some human characteristics and behaviours are influenced by genetic inheritance.

A. Inherited characteristics are passed on through genes (containing DNA found in chromosome strips).

B. Most normal human cells contain 46 chromosomes (23 pairs).

C. The sex cells contain only 23 chromosomes each capable of combining into a new zygote with a unique set of chromosomes.

D. Research has shown that inheritance plays a significant role in influencing behaviour-including intelligence, some aspects of personality, and some aspects of abnormal behaviour-but environmental and other personal factors are very important as well.

• In addition to Biological factors, culture is considered an important determiner of human behaviour.

• Though biological factors play a general enabling role, the development of specific skills and competencies is dependent upon the cultural factors and processes. This is called cultural determinism, i.e., the belief that patterns of behaviour are determined more by cultural than biological and Psychological factors. It emphasise the continuity of patterns of behaviour over time as learned behaviour is handed down from one generation to another. We human beings learn about culture through the process of enculturation and socialisation. Enculturation refers to all learning that take place without direct deliberate formal teaching. Socialisation refers to the process of acquiring the knowledge, values and social skills that enable the individual to become a member of the society and behave appropriately within it.

• Although the term Socialisation refers to a life long process, in that individuals are constantly learning and adapting their skills, it is more usually used to refer to the period of childhood and adolescence. Acculturation refers to cultural and Psychological changes resulting from contact with other cultures. The acculturative strategies adopted by individuals during the course of acculturation are integration, assimilation, separation and marginalisation.

• In short, human behaviour is a product of the genes and memes. Genes write the script of the biological transmissions whereas Memes write the script of cultural transmissions.

• India has a wide range of geographical diversity. Diversity of flora, fauna and terrain has led to diversity in food habits, dress, occupational structure, etc.

• Pluralism is a state of society in which members of diverse ethnic racial, religious, or social groups maintain an autonomous participation in and development of their traditional culture or special interest within the confines of a common civilisation.

• The process of perception enables us to understand the physical world and respond to it in a meaningful way. The term ‘Person Perception’ refers to the processes by which we form impressions of other people.

Words that Matter

1. Acculturation: Cultural and psychological changes resulting from continuous first-hand contact between two distinctive cultural groups.

2. All-or-none law: The rule that a neuron will always respond with its complete strength (action potential) to a stimulus or will not respond at all, regardless of the stimulus magnitude.

3. Arousal: A physiological state of the body.

4. Axon: The part of the neuron that carries information away from the cell body to other neurons.

5. Brainstem: The oldest part and central core of the brain, beginning where the spinal cord swells as it enters the skull; it is responsible for automatic survival functions.

6. Central nervous system (CNS): Subsystem of the nervous system composed of brain and spinal cord.

7. Cerebellum: Structure of the brain at the base of the skull, which organizes bodily motion, posture, and equilibrium.

8. Cerebral cortex: Area of the brain that regulates the brain’s higher cognitive and emotional functions.

9. Cortex: The grayish, thin, unmyelinated covering of the cerebrum.

10. Culture: The widely shared customs, beliefs, values, norms, institutions, and other products of a community that are transmitted socially across generations.

11. Deoxyribonucleic acid (DNA): The genetic material of the cell, located in the nucleus.

12. Endocrine Glands: The Glands,which secrete their hormones directly into the bloodstream.

13. Environment: The aggregate of external conditions – physical, biological, social and cultural that influence the functions of the organism.

14. Genes: The units of hereditary information, short chromosome segments composed of DNA. Genes act as blueprints for cells to reproduce themselves and manufacture the proteins that maintain life.

15. Heredity: The biological transmission of traits from parents to offspring.

16. Homo sapiens: The scientific nomenclature of modem human beings.

17. Homeostasis: The physiological tendency to maintain an internal bodily state of balance in terms of food, water, air, sleep and temperature.

18. Hypothalamus: A neural structure located just below the thalamus; it includes centers that govern motivated behaviour such as eating, drinking, sex, and emotions; it also regulates endocrine activity and maintains body homeostasis.

19. Memes: The DNA of human society, influencing every aspect of mind, behaviour and culture.

20. Medulla: The base of the brainstem; controls heartbeat and breathing, waking, sleeping; Nerve fibers connecting the brain and the body cross over at the medulla.

21. Nerve impulse: It is the passage of nerve sensation from one place to another, through an electrochemical process of conduction in the nerve.

22. Neuron: Nerve cell specialized to receive, process, and/or transmit information to other cells within the body.

23. Nucleus: A ganglion, or clump of nerve cells in the central nervous system.

24. Reticular activating system (RAS) : A network of fibers beginning in the spinal cord and extending up through the midbrain into the higher centers; has a role in attention and arousal.

25. Skeletal muscles: Muscles attached to bones, which brings about various types of body movements like the limb movements.

26. Socialisation: Process of social learning through which a child acquires the norms, attitudes, beliefs and behaviours that are acceptable in her/his culture; the principal agents of socialization are the family, school, and peer group.

27. Soma: Any kind of cell body or in general any form of body like that of humans and other animals.

28. Somatic nervous system: The part of the peripheral nervous system that controls voluntary muscles.

29. Species: A biological classification of different living organisms.

30. Synaptic vesicle: Structures in the synaptic knobs that store neurotransmitters prior to the release of neurotransmitter into the synaptic cleft.