

Learning allows us to **adapt to a changing environment** and involves our brain **making connections between experiences** so as to allow us to **anticipate the future**. It is common to many species and is essential in order for them to adapt to their environment **in order to survive**.

History of Learning

Descartes' Dualism

- Human behaviour could be explained by reflexes and mind/soul
- Animals are different from humans as they only have reflexive behaviour

Thomas Hobbes

- Proposed that the activities of the mind can be explained by mechanical laws of either pursuing pleasure or avoiding pain

John Locke & David Hume

- Proposed associationism - we learn everything from sensory experience and we search for natural laws that govern our mental activity (eg; contiguity)
- We are all born the same and gain our individual differences through our learning

Immanuel Kant

- Proposed that not everything is learned and that there strong individual differences in how people learn
- First proposed the idea of preparedness - we learn to associate certain stimuli faster than others, which suggests that some learning is inborn/innate

Charles Darwin

- Theory of evolution and natural selection - noted that there is an increased proportion of individuals possessing traits that enhance survival (adaptive traits)

Herbert Spencer

- Proposed that a process of 'natural selection' of behaviours occurs. This proposes that a random variation of behaviours occurs in individuals and that behaviours followed by desirable outcomes are more likely to be repeated - it suggests that the environment shapes our behaviour

Ivan Pavlov and Classical Conditioning

- Unconditioned Stimulus (UCS) leads to Unconditioned Response (UCR)
- A Neutral Stimulus (NS) is paired with the Unconditioned Stimulus (UCS) to produce the Unconditioned Response (UCR)
- The Neutral Stimulus (NS), following multiple pairings with the Unconditioned Stimulus (UCS), becomes a Conditioned Stimulus (CS) which elicits the Conditioned Response (CR) without the presence of the Unconditioned Stimulus (UCS)
- Thought to occur due to the association/activation of cortical centres representing the two stimuli
- This is a Stimulus-Stimulus (S-S) theory which was contrary to the Stimulus-Response (S-R) theories favoured at the time

Seligman and Preparedness

- Seligman (1971) proposed that certain associations are formed more readily than others and argued that this is the result of evolution
- Garcia's taste aversion experiments demonstrated this
 - Rats associate food with nausea faster than tone with shock
 - Certain stimuli are paired and learnt more readily

B.F. Skinner and Operant Conditioning

- Process of learning to associate an action with a consequence (reward/punishment)
- Environment shapes the animals behaviour
- Can be tested through the use of Skinner Box's

Classical Conditioning	Operant Conditioning
Allows the animal to learn relationships between events that happen in its environment	Allows the animal to learn the consequences that follow one's behaviour
Provides animal with no control over the occurrence of food/reward/stimulus	Provides the animal with control over the delivery of food/reward/stimulus

Innate Behaviour

Innate behaviours are those which are **inborn** and **evolve across generations**. They are one of two types of behaviour; the other being learned behaviour.

Types of Innate Behaviour

1. Reflexes

- A form of response (with no CNS involvement) that occurs whenever stimulus is presented
- Reflexes are very important in paediatrics
 - The presence of some reflexes at birth indicates healthy development
 - The presence of some reflexes for too long (eg; 6 months) can also indicate developmental problems

2. Tropisms

- a. Kineses
 - Non-directional reflexes that involve the whole body of an organism
 - Gunn (1940) found that lice would move towards the wet end of a log and stay there, as opposed to the dry end of a log
- b. Taxes
 - Directional reflexes with respect to a stimulus
 - These include reflexes such as moths being attracted to lights, maggots moving away from bright light

3. Fixed Action Patterns (FAP's)

- A very narrow range of behaviour which have certain specific characteristics which suggest they are evolved
 - All members of the species tend to produce them
 - They seem to be adaptive
 - They are activated only in a very specific context and by a very specific, species-specific stimulus
 - The morphology or form of the response is always almost identical within the species
 - The response seems to occur almost automatically when the key stimulus is present
 - The presence of the key stimulus component is more important than the morphology of the stimulus
- Examples of FAP's
 - Stickleback Fish - red patch on the underside of a stimulus appeared to trigger the attack by the male fish
 - Greylag Goose - stimulus appears to be oval shaped
 - Herring Gulls - stimulus was beak-shaped object with red spot on the end
- Testing for FAP's
 - Tinbergen's proposed method for studying/demonstrating the existence of FAP's
 - Look for species-specific behaviours that seem to have adaptive value
 - See whether the behaviour could be automatically triggered or 'released' by a particular stimulus (sign-stimulus or releasing stimulus)
 - Deprivation Experiments
 - Taking animals away from their natural habitats or parents at birth, raising in isolation and then seeing whether natural behaviours still emerge
 - Reiss (1954) used this to study nest-building behaviour in rats and demonstrated that the behaviour is innate, hormone triggers gene, signalling behaviour.
 - Eibl-Eibesfeldt challenged this not a nest, just enviro. exploration
 - Eibl-Eibesfeldt's Squirrel Studies found that squirrels would still try to bury nuts come winter time
 - Kuo's cat studies
 - Concluded that rat killing is not an instinct in cats
 - Noted that when rats and cats raised together, they did not eat each other due to stimulus control. However, cats would eat the rat pups as they did not see the pups as belonging to their companions - when the adult rats were shaved, they were eaten too