Learning

Habituation

- The simplest form of learning
- The process by which we respond less strongly over time to repeated stimuli.
- This is found even in the most basic form of organisms.

Ex: Without recalling, you might not aware the touch of clothes on your skin because you encounter this everyday and you are used to it.

Sensitisation

- Responding more strongly to repeated stimuli over time
- For strong stimuli, instead of habituation sensitisation is shown.

➢ In the sense of revolution, habituation makes us not attending to every single thing in our environment. We show habituation to things we think that are safe. Sensitisation helps us to pay attention to dangerous things.

➢ The theory behind habituation and sensitisation is that repeated exposure to one stimulus can either lead to respond less strongly (habituation) or more strongly (sensitisation) but the association between one or more stimuli is missing.

➢ We need to learn how stimuli are associated together to survive.

Ex: We saw a snake in that field. We link field to dangerous snake. This helps avoiding danger.

Psychic reflex

- The phenomenon of an indirect stimulus eliciting the autonomic (involuntary) salivary reflex rather than a stimulus that operates directly on the stomach (such as food)
- Initially, the dog salivated involuntarily to food. Over repeated sessions, the dog salivated to neutral stimulus such as foot step which present before the food. The dog associated these stimuli to food.

Classical conditioning

- A form of learning in which animals come to respond to a previously neutral stimulus that had been paired with another stimulus that elicits an automatic

response.

- Pavlov's observations lead him to study the association between food and a stimulus that signals food.

3 prerequisites for performing the conditioning

A. The dog must be hungry
B. The apparatus is located in quiet environment
C. Stimuli must be easy to perceive

3 phases of classical conditioning

A. Acquisition

- As the CS and UCS are paired repeatedly, the CR increases progressively in strength.

Conditioned stimulus (CS)

- Selecting a neutral stimulus. This is a stimulus that does not instinctually or automatically produce a response.
- the stimulus should be easy to perceive and novel (no previously learned responses)
- This stimulus may elicit orienting behaviour (turn head toward noise) but nothing more than that or the dog is aware of the stimulus but does not have automatic response to it.
- Dog's response to this stimulus is conditional or depends upon its learning.
- In Pavlov's study, it is the metronome.

Unconditioned stimulus (UCS)

- Non-neutral stimulus that does instinctually or automatically produce a response.
- This should be an important motivator.

  Ex: painful stimulus to skin or food.
- In the study, this is the meat powder.

Unconditioned response (UCR)

- Automatic response to a non-neutral stimulus.
- This should be an observable response.

  Ex: salivation produced by food

- These responses happen automatically because they are evolutionarily important.

Inter-stimulus interval (ISI)

- Duration between the onset of the CS and the onset of the UCS.
- The time within 1 trial where the CS and UCS paired together. This time should be relatively short.

Inter-trial interval (ITI)

- Duration between trials or the break between trials.

Conditioned response (CR)

- After multiple pairings of the CS and UCS, our neutral stimulus (CS) elicits a closely related response to the response the non-neutral stimulus (UCS) elicits.
- The CR is similar but not identical to UCR.
- In the study it is the salivation to the metronome.

2 parts of nervous system

Central nervous system – brain and spinal cord

Peripheral nervous system – the nerves of the rest of the body

2 divisions of the peripheral nervous system

Somatic nervous system

- Nerves of muscles and sensory receptors on the skin
- For controlling voluntary actions such as muscle movement and sensation.

Autonomic nervous system

- Controls involuntary movements such as breathing, heart-rates, blood supply or the responses you have when you are stress, in arousal state or during fight-or-flight responses.

2 divisions of the autonomic nervous system

Sympathetic nervous system

- Increases involuntary responses of the body such as heart-rate, respiration, perspiration and pupil dilate with increase in emotional arousal, stress, fear and during fight or flight responses.
- When we are highly stressed or anxious, digestion is also suppressed.

Parasympathetic nervous system

- Also called rest and digest network
- Has an opposing effect of bringing everything such as heart-rate, respiration down to calm or it brings all of the responses we need for survival back during times of danger.
- Increases stomach and intestine activity to increase digestion.