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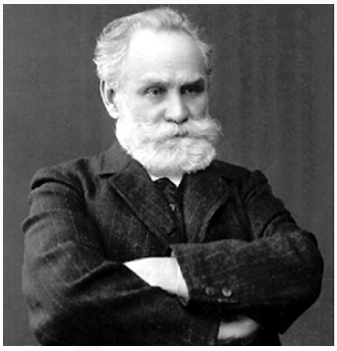
Ivan Pavlov's Classical Conditioning

Classical Conditioning

Pavlov, a Russian physiologist, first described classical conditioning in 1899 while conducting research into the digestive system of dogs.

He was particularly interested in the role of salivary secretions in the digestion of food and was awarded the Nobel Prize for Medicine or Physiology in 1904.



Basics

Classical Conditioning:

Type of learning in which one learns to link two or more stimuli and anticipate events

Unconditioned response (UR):

In classical conditioning, an unlearned, naturally occurring response (such as salivation) to an unconditioned stimulus (US) (such as food in the mouth)

Neutral stimulus (NS):

In classical conditioning, a stimulus that elicits no response before conditioning

Unconditioned stimulus (US):

In classical conditioning, a stimulus that unconditionally — naturally and automatically — triggers an unconditioned response (UR)

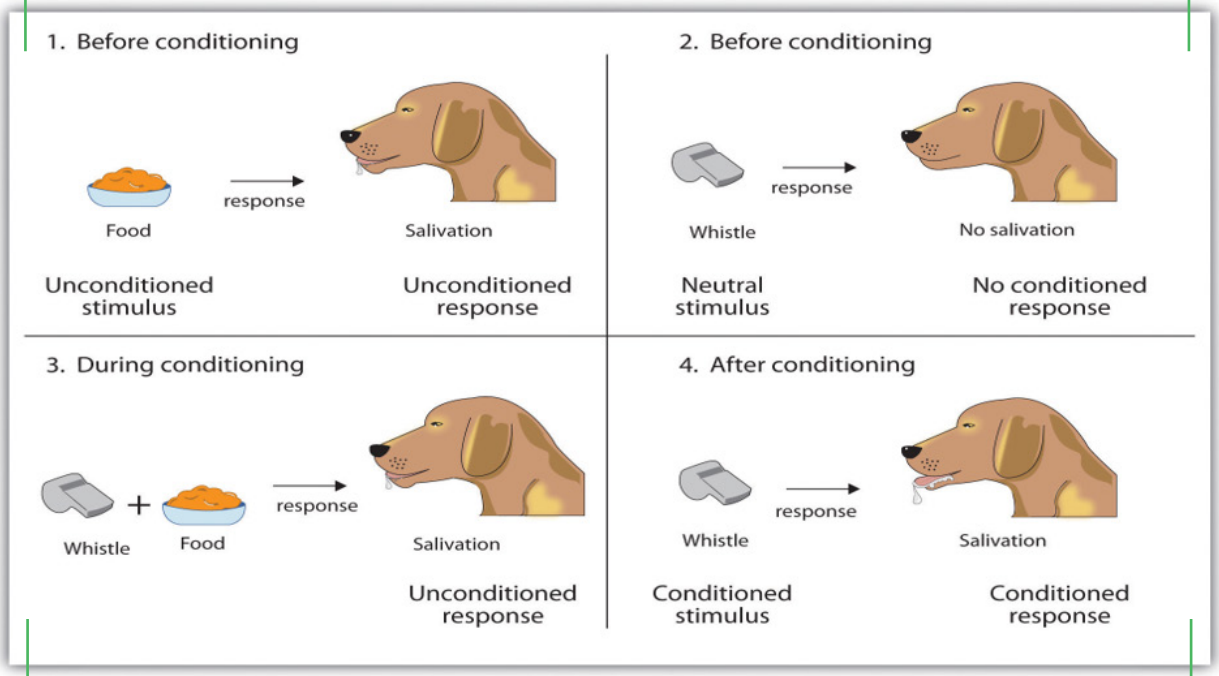
Ivan Pavlov's Discovery

While studying salivation in dogs, Ivan Pavlov found that salivation from eating food was eventually triggered by what should have been neutral stimuli such as:

- Just seeing the food.
- Seeing the dish.
- Seeing the person who brought the food.
- Just hearing that person's footsteps.

Unconditioned Stimulus and Response:
A stimulus which triggers a response naturally, before/without any conditioning.

Neutral Stimulus:
A stimulus which does not trigger a response.



The bell/tone (**N.S.**) is repeatedly presented with the food (**U.S.**).

The dog begins to salivate upon hearing the tone **(neutral stimulus becomes conditioned stimulus)**.

Did you follow the changes?

The UR and the CR are the same response, triggered by different events.
The difference is whether conditioning was necessary for the response to happen.

The NS and the CS are the same stimulus.
The difference is whether the stimulus triggers the conditioned response.

Classical Conditioning

How it works: After repeated exposure to two stimuli occurring in sequence, we associate those stimuli with each other.

Result: Our natural response to one stimulus now can be triggered by the new, predictive stimulus.

Here, our response to thunder becomes associated with lightning.

Stimulus 1: See lightning
Stimulus 2: Hear thunder

→

After Repetition

Stimulus: See lightning
Response: Cover ears to avoid sound

Associative Learning: Operant Conditioning

- Child associates his "response" (behavior) with consequences.
- Child learns to repeat behaviors (saying "please") which were followed by desirable results (cookie).
- Child learns to avoid behaviors (yelling "gimme!") which were followed by undesirable results (scolding or loss of dessert).

(a) Response: Being polite (b) Consequence: Getting a treat (c) Behavior strengthened

Cognitive Learning:

Cognitive learning refers to acquiring new behaviors and information mentally, rather than by direct experience.

Cognitive learning occurs:

1. **by observing events and the behavior of others.**
2. **by using language to acquire information about events experienced by others.**

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The only true wisdom is in knowing that you know nothing
- Socrates

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