



How do we Learn?

Module 17:
Classical Conditioning



Class Objectives:

- What is learning?
- What is Classical Conditioning?

What is Learning?

- Learning anything new involves change. Psychologists agree that most behaviors are learned.

- Learning is a _____

- The process by which we acquire new knowledge

How do you know you've learned something?



Many principles of learning are based on the idea of conditioning...



Conditioning

- *Conditioning (associative learning)* refers to a procedure where _____

- **Conditioning** is just another word for _____



In the process of conditioning there is always a cause and effect pattern

- A _____ is an event that has an impact on an organism
 - (CAUSE)
- A _____ is a reaction of an organism
 - (EFFECT)

For every stimulus there is a response

- Stimulus → Response
- (Cause) (Effect)



We are all *conditioned* in some way

- Conditioned behaviors appear so automatically that they look like _____
 - Conditioned behaviors are similar to reflexes because they _____

How are you conditioned?

Classical Conditioning

- Classical conditioning is one of the simplest forms of learning.

- Ivan Pavlov

- Pavlov's research was simple-

Conditioning is synonymous with learning

- Pavlov called a stimulus that elicits a response without conditioning an _____

- The unconditioned stimulus *naturally* produces an _____



Classical Conditioning

- In classical conditioning, a *neutral stimulus (NS)*, is paired repeatedly with _____
- The neutral stimulus will become the _____



Unconditioned

_____ Food _____ Response

Neutral Stimulus: _____ Response:
BELL _____

After the repeated pairings
_____ occurs

- Dog associated the bell with food- now the bell is a conditioned stimulus, because salivation occurs as a result of learning.

- Bell Salivation



CS

Classical Conditioning

- A conditioned stimulus (CS) will **always** produce a Conditioned Response (CR).
- For example- the salivation is a learned response to the sound of the bell.



Did you get it? Test your understanding about conditioning!

Identify the US, UR, CS and CR for each of the following examples.

Identify the US, UR, CS, and CR

- Alexander is four years old. One night his parents decided to light a fire in the family room fireplace. A burning ember jumped out of the fireplace and landed on Alexander's leg, creating a nasty burn. He cried because the burn hurt. A week later, when Alexander's parents started to light another fire in the fireplace, Alexander began to cry.

- UCS -

- UCR -

- CS -

- CR -

Identify the US, UR, CS, and CR

- Bianca's mom followed the same routine before serving dinner - she would put ice in the glasses and then call "come and get it, dinner's ready." Immediately upon hearing those words, Bianca would quickly run down the stairs. After a while, Bianca would come running down the stairs when she heard the ice hitting the glasses.

- UCS -

- UCR -

- CS -

- CR -

Identify the US, UR, CS, and CR

- Marco is driving to work during a heavy snowstorm when the brake lights on the car ahead of him come on. He hits his breaks but is unable to avoid hitting the car. He is badly shaken up in the accident. The next time he is driving in the snow he notices that he tenses up every time he sees brake lights come one ahead of him.

- UCS -

- UCR -

- CS -

- CR -

What do you think would happen if Pavlov rang the bell each day, but never followed it with food?



The dog would learn to not salivate!

- _____
- Present the conditioned stimulus repeatedly without the unconditioned stimulus

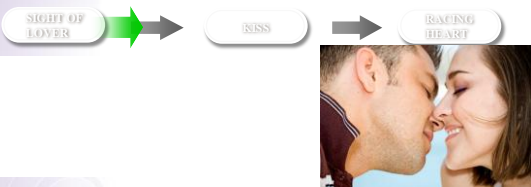
Extinction *IS NOT* forgetting!
Extinction is new learning not unlearning



Spontaneous Recovery

- Requires no additional pairings, just the passage of time.

Conditioned Emotional Response



Humans experience conditioned emotional responses, which explains many complex behaviors

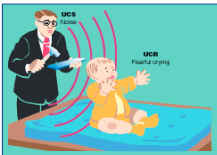
Likes, dislikes, prejudices and fears

Human Conditioning

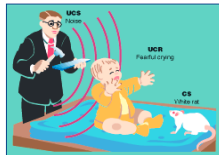
- Watson and Rayner (1920) conditioned an 11-month-old infant named Albert –this became known as the _____
- Through the process of Classical Conditioning Baby _____
- This experiment is now considered _____



► Classical Conditioning and Little Albert



Initially, Little Albert did not show a fear of animals, but he did exhibit fear if a loud noise was made behind his back (a hammer striking a steel bar).



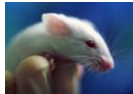
Then the researchers presented a white rat (CS) and made the loud noise (UCS).



After five presentations of the CS and UCS, Albert developed a phobia of rats—he began whimpering and withdrawing (the conditioned emotional response) and trying to avoid the rat. After two more presentations of CS and UCS, he immediately began crying on seeing the rat. "He . . . fell over on his left side, raised himself . . . and began to crawl away so rapidly that he was caught with difficulty before reaching the edge of the table" (Watson and Rayner, 1920, p. 9).

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Baby Albert-Conditioned FEAR



- Baby Albert was initially conditioned to fear white rats, but the fears were expanded to include:

More Classical Conditioning

- _____ occurs when the conditioned response transfers or "spreads" to a new stimuli.
 - Example- _____
- In *stimulus discrimination*, an organism learns to _____

 - Example- Different bell tones (Pavlov)

The Garcia Effect

- The *Garcia effect* is an example of classical conditioning in everyday life.
 - John Garcia (Garcia & Koelling, 1971) gave animals specific foods or drinks. He then induced nausea in the animals. The animals quickly avoided the foods that preceded the nausea
- Many people who have experienced food poisoning can relate to this stimulus discrimination!

What's Next?

- Can we learn any other way?
 - Operant conditioning and Social Learning
