How do we Learn?

Chapter 6 Learning

CLASS OBJECTIVES:

- What is learning?
- What is Classical Conditioning?

Learning

- Learning is a relatively permanent change in an organism due to experience.

- Psychologists agree that most behaviors are learned.
Learning is an ___________ process so we must study the results.

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

**Conditioning**

- *Conditioning* refers to a procedure where  
  to stimuli are learned.

  - *Conditioning is just another word for ___________* !
In the process of conditioning there is always a ________________

- A stimulus is an event that has an impact on an organism
  - ________________________________

- A response is a ________________________________
  - (EFFECT)

For every stimulus there is a response

- Stimulus ➔ Response
  - (Cause) ➔ (Effect)

You get an A on the exam

We are all *conditioned* in some way

- Conditioned behaviors appear so automatically that they look like
  - ________________________________
    - Conditioned behaviors are similar to reflexes because they are also ________________
Classical Conditioning

Classical conditioning is one of the simplest forms of learning.

Pavlov's research was simple – to teach a dog to

Conditioning is synonymous with learning

Pavlov called a stimulus that elicits a response without conditioning an

In classical conditioning, a stimulus is paired repeatedly with an UCS

After a series of paired associations the neutral stimulus will produce a similar or identical response.

- Usually a light or bell is used
**Unconditioned**

Unconditioned Stimulus | Unconditioned Response
---|---

Neutral Stimulus: | Response:
---|---

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**Classical Conditioning**

- An **unconditioned stimulus** (UCS) is presented with a neutral stimulus repeatedly.
  - For every stimulus there is a response!
- An **unconditioned response** (UCR) is an *unlearned* response to an unconditioned stimulus
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**What will the response be?**

Food + Bell → 

UCS | Neutral | UCR
After the repeated pairings LEARNING 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            ______________

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- Bell  Salivation

  __________

  CS            Conditioned Response (CR)
Classical Conditioning

- A conditioned stimulus (CS) will always produce a ______________________ (CR).

- For example, the salivation is a learned response to the sound of the bell.

Let’s Review

During training:

Neutral Stimulus: BELL + Unconditioned Stimulus: ________ Unconditioned Response: ________

After training:

Conditioned Stimulus: BELL → Conditioned Response: ________

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.
- US – ________________
- UR – ________________
- 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.
- US – ________________
- UR – ________________
- 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 brakes 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.
- US – ________________
- UR – ________________
- CS – ________________
- CR – ________________
The dog would learn to not salivate!

- _______________ will occur...

- Present the conditioned stimulus repeatedly without the unconditioned stimulus
  - This gradually _______________

Extinction IS NOT forgetting!
Extinction is _______________ not unlearning

Spontaneous Recovery

- The _______________ of an extinguished response after a delay
  - Requires no additional pairings, just the passage of time.
Can Emotions be Conditioned?

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 Albert was conditioned ________________

- This experiment is now considered unethical
Baby Albert—Conditioned FEAR

Baby Albert was initially conditioned to fear ______, but the fears were expanded to include:

- rabbits, dogs, fire, monkeys, Santa clause masks, white hair, men with beards, cotton balls, fur

Classical Conditioning in Humans

White Rat → Frightening, loud noise → Fear

- After many pairings:

Humans experience conditioned emotional responses, which explains many complex behaviors

Likes, dislikes, prejudices and fears
More Classical Conditioning

- **Stimulus generalization** occurs when the conditioned response

- In **stimulus discrimination**, an organism learns to

  (The opposite of generalization)

Have you ever had food poisoning?

How do you feel about that food now?

The Garcia Effect

- The ___________ is a dramatic 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

- Many people who have experienced _______ can relate to this **stimulus discrimination**!
What’s Next?

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