

Classical Conditioning

by Sophia Tutorial



WHAT'S COVERED

This tutorial covers learning and behaviorism by examining the principles of classical conditioning and how it occurs. Our discussion breaks down as follows:

1. Classical Conditioning
2. Ivan Pavlov
3. Stimulus and Response Connections
 - a. Extinction
 - b. Generalization and Discrimination
 - c. Desensitization

1. Classical Conditioning

Behavioral theory states that people are influenced by their external environments to behave, or create actions, in certain kinds of ways. One of those ways is **classical conditioning**.

Simply put, classical conditioning is when someone or something, like a dog, for example, comes to associate a **response** they have to one **stimulus** with a completely different stimulus that doesn't usually produce that response.



TERMS TO KNOW

Classical Conditioning

Learning where a subject comes to associate a response to a stimuli to other stimuli that doesn't usually produce that response

Stimulus

Something that happens in the external environment; can be conditioned (related to a learned response), unconditioned (not related to a learned response), or neutral (not related to a response)

Response

Something that a subject does because of a stimulus; can be conditioned (learned) or unconditioned (not learned)

2. Ivan Pavlov

The most famous example of this stimulus-response comes from **Ivan Pavlov**. Pavlov was a Russian physiologist and natural scientist who, in the 1870s, performed his famous dog experiments.

Pavlov's experiments worked with stimulus and response. They occurred in several stages:

1. Pavlov began by giving dog food to his dogs and measuring how much they salivated. The food was what he called the **unconditioned stimulus (US)** and the salivation was the **unconditioned response (UR)**.

Now, a dog always salivates in response to food, as do people. If you think about food right now, you likely can't help but salivate.

2. Next, Pavlov introduced something that normally doesn't create a response, which is called **a neutral stimulus**. In this case, it was a bell. Pavlov introduced the bell just before the unconditioned stimulus of the food. He rang the bell, and then presented the dog with the food, causing the dog to salivate, because that's the unconditioned response.

3. Pavlov continued to pair this neutral stimulus with an unconditioned stimulus over and over again. Over time, the dog learned to associate the bell with the food. Therefore, the dog would start to salivate in response to hearing the bell alone, without even seeing the food. This is what Pavlov referred to as a **conditioned stimulus**.

This experiment changed the bell into a stimulus that created the new **conditioned response** of salivating, which is what Pavlov called classical conditioning.



BIG IDEA

Classical conditioning takes an unconditioned stimulus and an unconditioned response and turns it into a conditioned stimulus and a conditioned response.

Classical conditioning can also be used to explain more complex behaviors.



EXAMPLE You learn to value money through early associations with things that you want. You see that money gets you what you want, so eventually you start to value money in and of itself.



TERMS TO KNOW

Unconditioned Stimulus (US)

Something that occurs in the environment

Unconditioned Response (UR)

Subject's natural reaction to an occurrence

Neutral Stimulus (NS)

Event that does not create a specific response

Conditioned Stimulus (CS)

Previously neutral stimulus that now has a learned response connected to it

Conditioned Response (CR)



Ivan Pavlov

Russian physiologist who establishes a foundation for classical conditioning principles

3. Stimulus and Response Connections

3a. Extinction

Over time, these conditioned stimuli and response connections become weaker without the unconditioned stimulus being present. If the bell and food were not continually paired, the dog would eventually stop associating the bell with the food, and would stop salivating when it heard the bell all by itself. This is what is called **extinction**. In other words, extinction means forgetting the responses.

However, **spontaneous recovery** can sometimes occur after extinction. This means that a learned response may return, even though it was thought to be extinct. This explains why, after a traumatic event, such as one that occurs in someone's childhood, there may be a recurrence of feelings later in life, when that person is an adult.



TERMS TO KNOW

Extinction

When the relationship between a conditioned stimulus and response becomes weaker; when a subject forgets a response

Spontaneous Recovery

After a conditioned response has been extinguished, it may show up again later

3b. Generalization and Discrimination

Another aspect that has been examined under classical conditioning is the difference between stimulus generalization and stimulus discrimination.

Stimulus generalization is when a person responds to a stimulus that is similar to one that they've learned, with the same learned response.

This is especially common early in life when you don't have as many experiences, and so therefore don't understand the differences between experiences.



EXAMPLE If you're afraid of a barking dog, something that scared you when you were a child, you might respond with fear to a stuffed dog or a picture of a dog. Even though the stimuli are not the same, they are similar enough to elicit the same response.

In contrast, **stimulus discrimination** is when a person learns to differentiate between similar stimuli and not to respond to them in the same way.



EXAMPLE For the person who was afraid of the dog, stimulus discrimination is learning not to be

afraid of the picture or the stuffed dog. This means learning to understand that those things are different from each other, which is something that occurs over time, in response to new experiences.



TERMS TO KNOW

Stimulus Generalization

When a person responds to a similar stimuli with a learned response

Stimulus Discrimination

When a person learns to respond differently to similar stimuli

3c. Desensitization

Classical conditioning can be used in different types of therapies, and is found to actually have successful results. One example is in **desensitization** therapy. This therapy involves a person that's created an unwanted emotional response to some stimuli. This unwanted response is called a **conditioned emotional response**, or **CER**.

In desensitization therapy, the therapist will help the client to unlearn this response by gradually exposing the client to the stimulus until the response is no longer present.



EXAMPLE Suppose an individual has a snake phobia. They're afraid, and fear is their conditioned emotional response to snakes. A treatment option may be to have extinction occur through gradual exposure to snakes. The desensitization therapy might start by having that person look at pictures of snakes. Then, it might progress to seeing somebody holding a snake, then being exposed to the snake, and finally actually touching it themselves. In this way, they are learning to not be afraid of the snake.



TERMS TO KNOW

Desensitization

A type of therapy where a person attempts to unlearn an unwanted learned emotional response to a stimulus

Conditioned Emotional Response (CER)

Learned emotional reaction; generally how phobias develop



SUMMARY

Classical conditioning, which is associated with the work of Ivan Pavlov, is an important subject within behavioral theory. Classical conditioning features a number of stages, all dependent upon stimulus and response. Classical conditioning can be used to describe complex behaviors and is used in a variety of therapies. Over time, **stimulus and response connections** change, leading to new kinds of behaviors.

Good luck!

Source: This work is adapted from Sophia author Erick Taggart.

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Learned emotional reaction; generally how phobias develop.

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Learned reaction to a stimulus.

Conditioned Stimulus (CS)

Previously neutral stimulus that now has a learned response connected to it.

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A type of therapy where a person attempts to learn an unwanted learned emotional response to a stimulus.

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When the relationship between a conditioned stimulus and response becomes weaker; when a subject forgets a response.

Ivan Pavlov

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Response

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Spontaneous Recovery

After a conditioned response has been extinguished, it may show up again later.

Stimulus

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Stimulus Discrimination

When a person learns to respond differently to similar stimuli.

Stimulus Generalization

When a person responds to a similar stimuli with a learned response.

Unconditioned Response (UR)

Subject's natural reaction to an occurrence.

Unconditioned Stimulus (US)

Something that occurs in the environment.

