

An Introduction to Classical (Respondent) Conditioning

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[Classical conditioning](#) was the first type of learning to be discovered and studied within the behaviorist tradition (hence the name classical). The major theorist in the development of classical conditioning is Ivan Pavlov, a Russian scientist trained in biology and medicine (as was his contemporary, Sigmund Freud). Pavlov was studying the digestive system of dogs and became intrigued with his observation that dogs deprived of food began to salivate when one of his assistants walked into the room. He began to investigate this phenomena and established the laws of classical conditioning. Skinner renamed this type of learning "respondent conditioning" since in this type of learning, one is responding to an environmental antecedent.

Major concepts

Classical conditioning is Stimulus (S) elicits >Response (R) conditioning since the antecedent stimulus (singular) causes (elicits) the reflexive or involuntary response to occur. Classical conditioning starts with a reflex: an innate, involuntary behavior elicited or caused by an antecedent environmental event. For example, if air is blown into your eye, you blink. You have no voluntary or conscious control over whether the blink occurs or not.

The specific model for classical conditioning is:

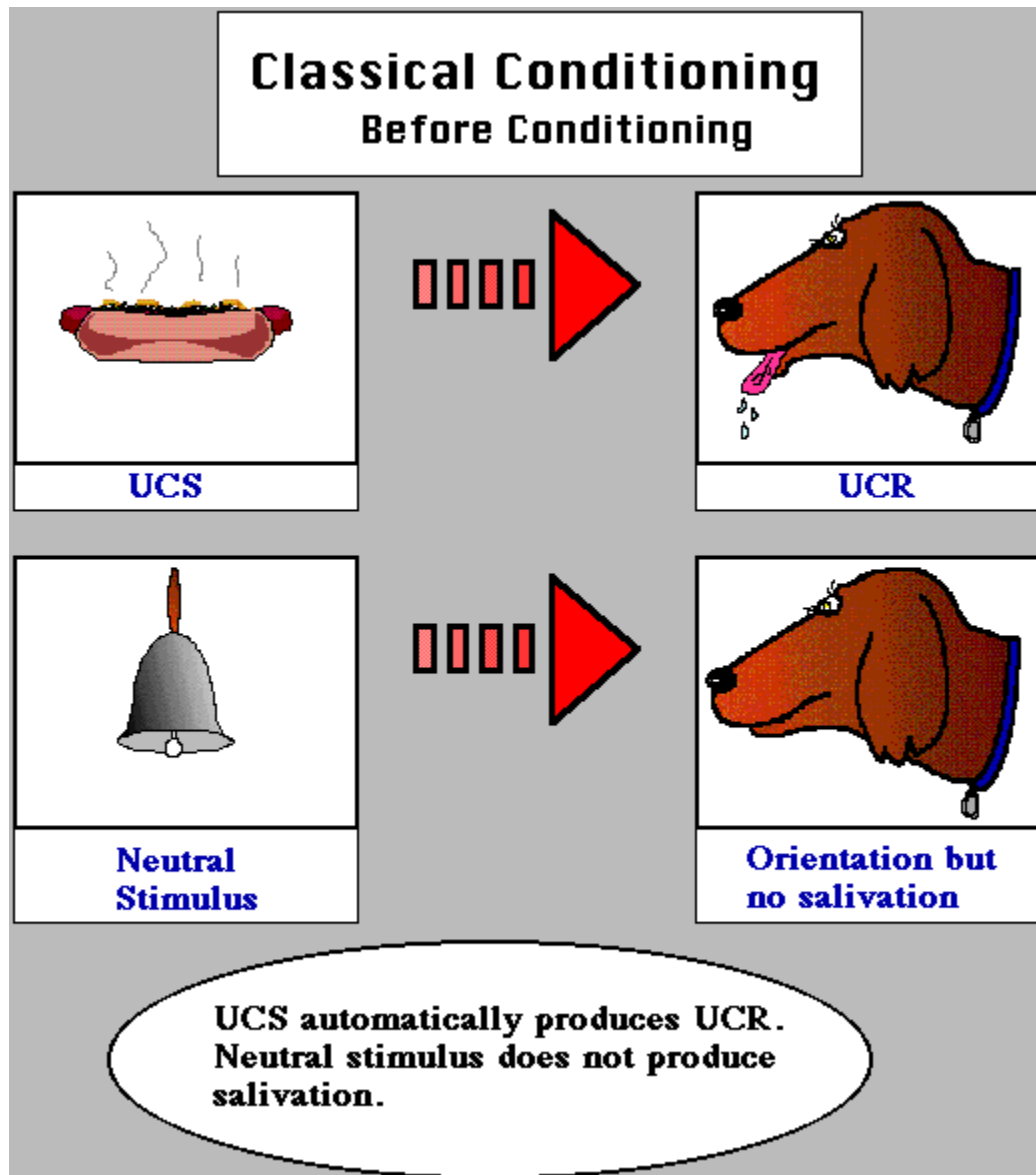
1. Unconditioned Stimulus (US) elicits > Unconditioned Response (UR): a stimulus will naturally (without learning) elicit or bring about a reflexive response
2. Neutral Stimulus (NS) ---> does not elicit the response of interest: this stimulus (sometimes called an orienting stimulus as it elicits an orienting response) is a neutral stimulus since it does not elicit the Unconditioned (or reflexive) Response.
3. The Neutral/Orienting Stimulus (NS) is repeatedly paired with the Unconditioned/Natural Stimulus (US).
4. The NS is transformed into a Conditioned Stimulus (CS); that is, when the CS is presented by itself, it elicits or causes the CR (which is the same involuntary response as the UR; the name changes because it is elicited by a different stimulus. This is written CS elicits > CR.

In classical conditioning no new behaviors are learned. Instead, an association is developed (through pairing) between the NS and the US so that the animal / person responds to both events / stimuli (plural) in the same way; restated, after conditioning, both the US and the CS will elicit the same involuntary response (the person / animal learns to respond reflexively to a new stimulus).

The following is a restatement of these basic principles using figures of Pavlov's original experiments as an example.

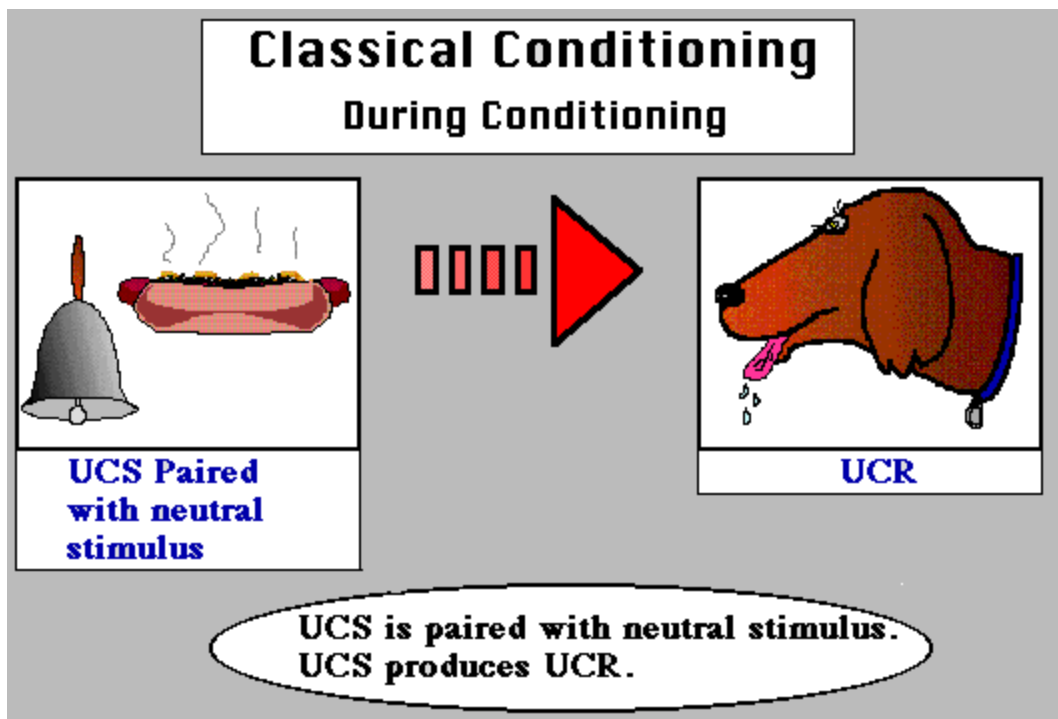
Before conditioning

In order to have classical or respondent conditioning, there must exist a stimulus that will automatically or reflexively elicit a specific response. This stimulus is called the **Unconditioned Stimulus** or UCS because there is no learning involved in connecting the stimulus and response. There must also be a stimulus that will not elicit this specific response, but will elicit an orienting response. This stimulus is called a **Neutral Stimulus** or an **Orienting Stimulus**.



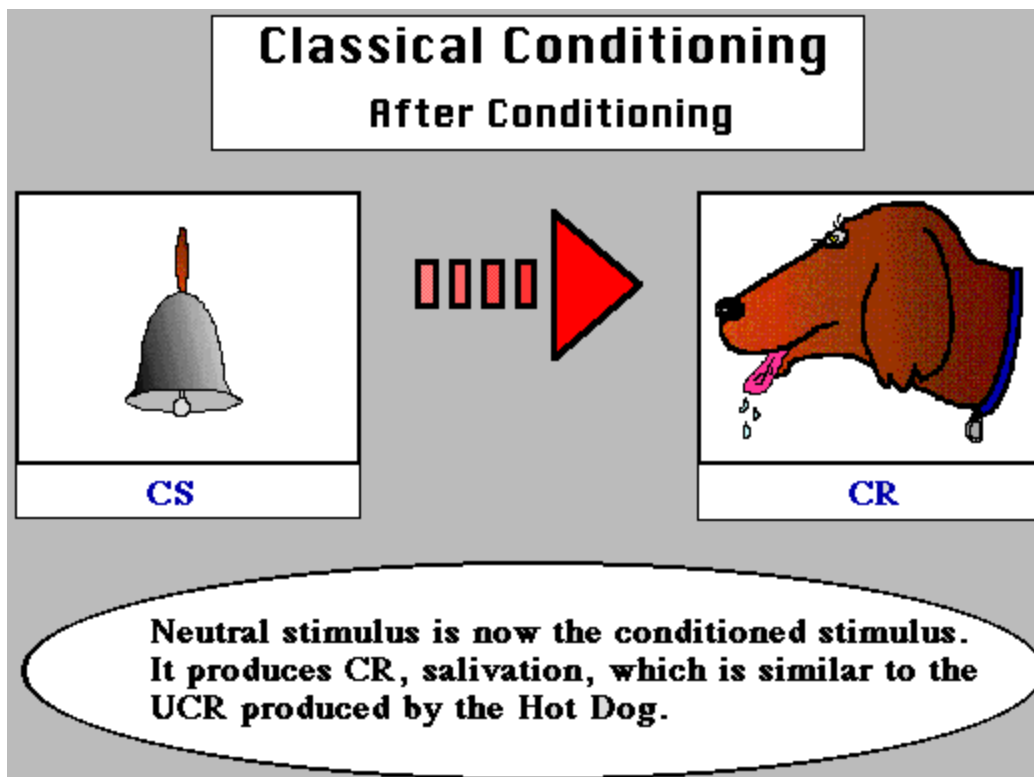
During conditioning

During conditioning, the neutral stimulus will first be presented, followed by the unconditioned stimulus. Over time, the learner will develop an association between these two stimuli (i.e., will learn to make a connection between the two stimuli.)



After conditioning

After conditioning, the previously neutral or orienting stimulus will elicit the response previously only elicited by the unconditioned stimulus. The stimulus is now called a **conditioned stimulus** because it will now elicit a different response as a result of conditioning or learning. The response is now called a **conditioned response** because it is elicited by a stimulus as a result of learning. The two responses, unconditioned and conditioned, look the same, but they are elicited by different stimuli and are therefore given different labels.



In the area of classroom learning, classical conditioning primarily influences emotional behavior. Things that make us happy, sad, angry, etc. become associated with neutral stimuli that gain our attention. For example, if a particular academic subject or remembering a particular teacher produces emotional feelings in you, those emotions are probably a result of classical conditioning.

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