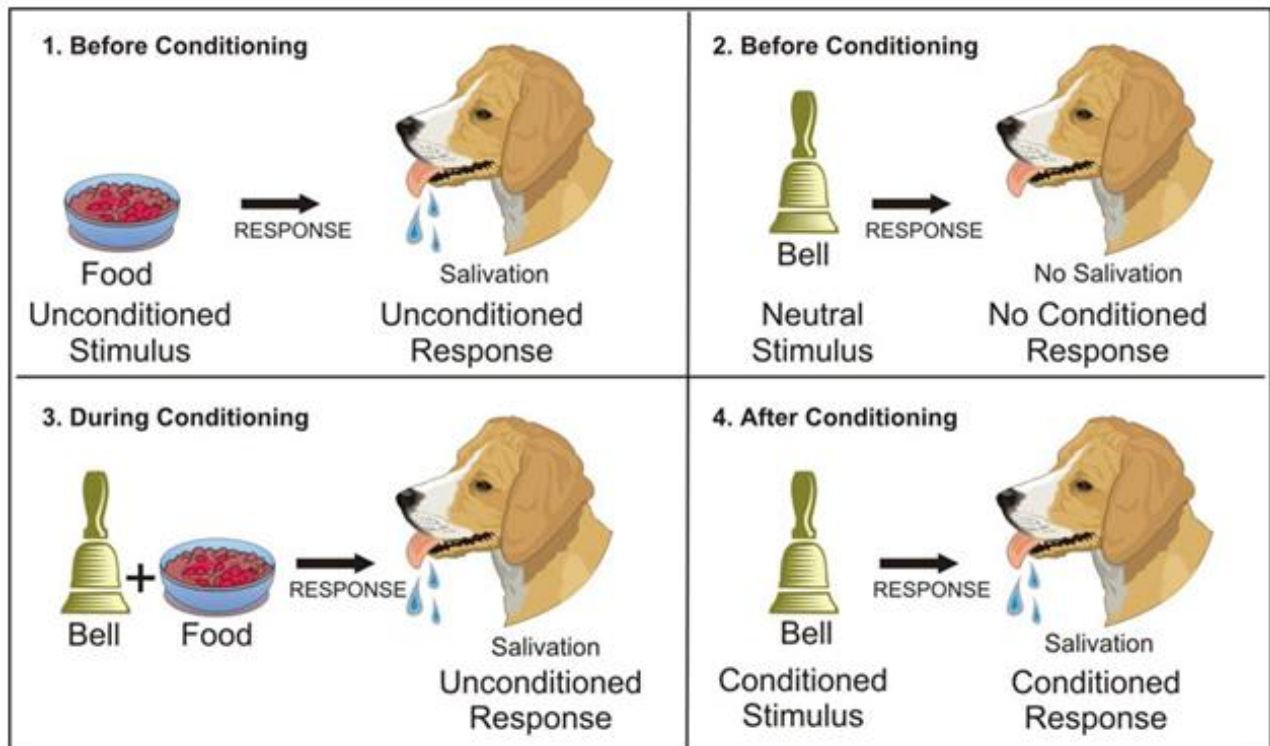


Classical Conditioning and Learning

The concept of a “*conditioned*” reflex was first identified by Russian physiologist Ivan Pavlov. He was specifically interested in knowing why dogs salivated even before being given food. His research led to what is now known as a science of its own and can be used to explain how we learn to like, why we fear certain things, and the efficacy of medical treatments.

Classical conditioning can be described in the series of steps described below:



1. Before conditioning, the salivary reflex of a dog is tested by showing how an unconditioned stimulus (food in the dog’s mouth) results in an unconditioned response (salivation).
2. Before conditioning, the neutral stimulus is also tested to demonstrate that it does not cause an unconditioned response (salivation) on its own. In this case, it is shown that the ring of a bell will not result in salivation.
3. During conditioning, the neutral stimulus (ringing of a bell) is coupled with the unconditional stimulus (food), resulting in the unconditioned response of salivation

- After conditioning, the dog has associated the neutral stimulus (now a conditioned stimulus; the ringing bell) with the unconditioned food stimulus. As a result, the dog will give a conditioned response which is to salivate. The conditioned response comes from the conditioned stimulus.

For classical conditioning to work effectively, the stimulus to be conditioned (eg. The ringing bell) must come before the unconditioned stimulus (food), rather than follow it or occur simultaneously with it. It is also important that the conditioned stimulus is repeatedly presented with the unconditioned stimulus. Not doing so will result in the conditioned response eventually disappearing in what is commonly known as *extinction*.

In some cases, a neutral stimulus can become a conditioned stimulus when paired with an already established conditioned stimulus in what is known as *higher-order conditioning* (see figure below). Higher-order conditioning may explain why we form certain prejudices; words paired with objects or other words that previously elicit some kind of sentimental response can also function to elicit that response (eg. The word birthday may bring joy because of its association with gifts and attention).

