45.7B: Conditioned Behavior

In classical conditioning, a behavior is paired with an unrelated stimulus; in operant conditioning, behaviors are modified by consequences.

Learning Objectives

• Distinguish between classical and operant conditioning techniques

Key Points

• In classical conditioning, a response called the conditioned response is associated with a stimulus that it had previously not been associated with, the conditioned stimulus; the response to the original, unconditioned stimulus is called the unconditioned response.

• Classical conditioning is a major tenet of behaviorism, a branch of psychological philosophy that proposes that all actions, thoughts, and emotions of living things are behaviors that can be treated by behavior modification and changes in the environment.

• In operant conditioning, the conditioned behavior is gradually modified by its consequences as the animal responds to the stimulus.

• Operant conditioning relies on the use of reinforcement (i.e. a reward) and/or punishment to modify a conditioned behavior; in this way, the animal is conditioned to associate a type of behavior with the punishment or reward.

Key Terms

• classical conditioning: the use of a neutral stimulus, originally paired with one that invokes a response, to generate a conditioned response
Conditioned Behavior

Conditioned behaviors are types of associative learning where a stimulus becomes associated with a consequence. Two types of conditioning techniques include classical and operant conditioning.

Classical Conditioning

In classical conditioning, a response called the conditioned response is associated with a stimulus that it had previously not been associated with, the conditioned stimulus. The response to the original, unconditioned stimulus is called the unconditioned response. The most cited example of classical conditioning is Ivan Pavlov’s experiments with dogs. In Pavlov’s experiments, the unconditioned response was the salivation of dogs in response to the unconditioned stimulus of seeing or smelling their food. The conditioning stimulus that researchers associated with the unconditioned response was the ringing of a bell. During conditioning, every time the animal was given food, the bell was rung. This was repeated during several trials. After some time, the dog learned to associate the ringing of the bell with food and to respond by salivating. After the conditioning period was finished, the dog would respond by salivating when the bell was rung, even when the unconditioned stimulus (the food) was absent. Thus, the ringing of the bell became the conditioned stimulus and the salivation became the conditioned response. Although it is thought by some scientists that the unconditioned and conditioned responses are identical, Pavlov discovered that the saliva in the conditioned dogs had characteristic differences when compared to the unconditioned dog.

Operant Conditioning

In operant conditioning, the conditioned behavior is gradually modified by its consequences as the animal responds to the stimulus. A major proponent of such conditioning was psychologist B.F. Skinner, the inventor of the Skinner box. Skinner put rats in his boxes that contained a lever that would dispense food to the rat when depressed. While initially
the rat would push the lever a few times by accident, it eventually associated pushing the lever with getting the food. This type of learning is an example of operant conditioning. Operant learning is the basis of most animal training: the conditioned behavior is continually modified by positive or negative reinforcement (such as being given a reward or having a negative stimulus removed) or by positive or negative punishment (such as being given a punishment or having a pleasing stimulus removed). In this way, the animal is conditioned to associate a type of behavior with the punishment or reward. Over time, the animal can be induced to perform behaviors that they would not have done in the wild, such as the “tricks” dolphins perform at marine amusement park shows.

Figure \( \PageIndex{1} \): Operant conditioning: The training of dolphins by rewarding them with food is an example of positive reinforcement operant conditioning.