Learning: relatively enduring change in behavior due to experience

In associative learning, what is learned depends on antecedents (events that precede a response) and consequences (events that follow a response)

Classical Conditioning first described by Ivan Pavlov 1903 (aka: Pavlovian, respondent conditioning)
> a type of learning in which a neutral stimulus is repeatedly paired with a response-producing stimulus until the neutral stimulus acquires the capacity to evoke the same involuntary response
> passive, involuntary learning that involves changing of reflexes (antecedents become associated w/ same reflex)
  • unconditioned stimulus UCS a stimulus that can elicit a natural reflex response
  • unconditioned response UCR an unlearned/innate/reflex response elicited by an unconditioned stimulus
  • conditioned stimulus CS a formerly neutral stimulus that, when paired repeatedly with an unconditioned stimulus, becomes capable of eliciting the reflex response
  • conditioned response CR a learned reflex response elicited by a conditioned stimulus

> stimulus generalization: a learned response is generalized to new stimuli that are similar to the original stimulus
> stimulus discrimination: a learned response to a specific stimulus is not elicited by non-similar stimuli
> timing: Conditioning is most effective when the neutral stimulus is presented immediately before UCS
  • Usually ½ second to a few seconds
> extinction gradual weakening & disappearance of a CR by repeatedly presenting the CS without the UCS
  * spontaneous recovery: even after extinction has occurred, the CR can spontaneously reappear after a period of time without exposure to the CS
> conditioned emotional response an emotional response that is linked to a previously non-emotional stimulus thru classical conditioning (most physiological responses can be classically conditioned)

Operant conditioning:
  ➢ a type of learning in which voluntary behaviors increase or decrease frequency as a result of consequences
  ➢ voluntary/active learning, the learner interacts with the environment to generate consequences
    • based on: Thorndike's Law of Effect: behaviors that are followed by reinforcing consequences are likely to be repeated

> operant: any voluntary behavior that operates upon the environment to generate consequences
> operant reinforcer: any stimulus that increases the frequency of a particular response
  • a reinforcer is dependent on the preferences of the individual
  • most effective if given consistently and immediately following the desired response
* Types of reinforcers
  > primary natural or unlearned reinforcer; usually one that satisfies a physiological need (i.e.: food, attention)
  > conditioned or secondary a learned reinforcer, derives its reinforcing properties by association with a primary reinforcer

Four methods of changing behavior via operant conditioning:
Reinforcement: Frequency of an operant behavior is increased by a pleasant consequence
  1. Positive reinforcement an operant behavior is followed by presentation of a reinforcing stimulus
    ➢ The operant behavior increases in frequency as a result
  2. Negative reinforcement involves an operant behavior is followed by the removal of an aversive stimulus
    ➢ The operant behavior increases in frequency as a result
Aversive stimuli: physical or psychological discomfort that an organism seeks to escape or avoid
Punishment: Frequency of an operant behavior is decreased by an aversive consequence
  3. Punishment by application: an operant behavior is followed by presentation of an aversive stimulus
    ➢ The operant behavior decreases in frequency as a result
  4. Punishment by removal: an operant behavior is followed by the removal of a reinforcing stimulus
    ➢ The operant behavior decreases in frequency as a result

Problems with Punishment:
  • Must be applied immediately in order to be most effective
  • Does not teach or promote alternative, acceptable behavior
  • May produce undesirable results such as hostility, passivity, fear (punishment may become associated w/ the punisher)
  • If reinforcers are still present, punishment will only suppress responding temporarily (learner may perceive punishment as attention)
  • May cause modeling of aggressive behavior