

Learning : Theory, Research, Applications

I. Definition:

A measurable change in behavior resulting from prior experience. Learning assumes that there is a memory of prior experience that affects current behavior. Learning allows for adaptation in the life of the organism to process incoming information quickly and efficiently and to respond effectively.

II. Habituation:

- A. The modification of an existing level of arousal, based on past experience.
- B. In order for the modification to take place, a regular stimulus must be presented at predictable intervals.
- C. The function produced shows increased arousal first to a new stimulus, and if regularly presented, decreased arousal to repeated presentations.
- D. Research utilizing habituation as a method.
 - 1) Habituation functions across a variety of species, including humans.
 - 2) Habituation rate to patterns: Infants.
 - 3) Habituation/dishabituation: Cohen's angle study.
 - 4) Habituation/Sensitization: Face processing in humans and tamarins.
- E. Practical applications: Use repeated stimulation to reduce anxiety. Make changes to increase arousal.

III. Classical conditioning:

- A. The **addition** of a new reflex-like reaction based on predictable pairings of a neutral cue with something noxious or pleasurable (shock/food).
- B. In order for the new response (**CR**) to occur, a regular pairing of the neutral stimulus (**CS**) and the noxious/pleasurable one (**UCS**) must occur.
- C. The new reaction occurs automatically to the neutral cue, is relatively permanent, and requires undoing of the pairing to get rid of it.
- D. Research utilizing classical conditioning.
 - 1) Language learning: Wercker's study.
 - 2) Drug addiction – withdrawal attached to classically conditioned cues.
- E. Practical applications: Recognize learned reactions paired with neutral stimuli.

IV. Operant conditioning:

- A. The addition of a new overt (conscious, chosen, voluntary) response emitted in order to maximize reward and minimize pain.
- B. Shaped, and then increases in rate based on reward schedule.
- C. Reduce rate of response by removal of reward or punishment.
- D. Applicability of research on rewards and punishment:
 - 1) Use of rewards in the classroom: A meta-analysis.
 - 2) Changes in punishment system to deter crime.



