Chapter 4 - Classical Conditioning (continued)

Basic Phenomena and Various Complexities

Basic Phenomena

- Acquisition
- Extinction
- Spontaneous Recovery
- Disinhibition
- Generalization & Discrimination
- Higher-order conditioning & Preconditioning

Acquisition

- Acquisition:

- The S-R association requires a number of pairings of the

- The more times the CS and US are paired,

- The stronger the US is and the stronger the NS is,

- The strength of the CR will increase up to a certain point, and will then level off.

  - For example, as a dog is repeatedly presented with a tone and food, the amount of salivation increases until it reaches a certain peak, at which point it will remain at that level.
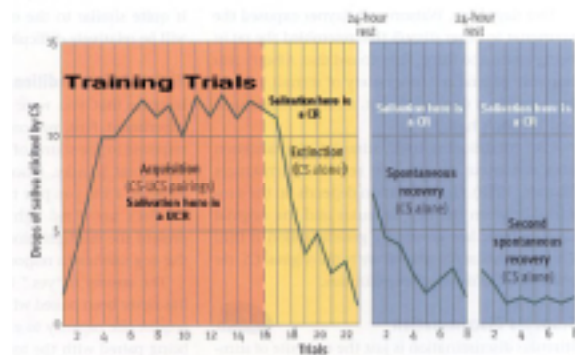
Extinction

- Continually presenting a CS without a US,

- When the CS no longer elicits a CR, experimental extinction is said to have occurred.
  - Situations where it is useful to extinguish the CR?

Factors Affecting Extinction

- 1. The strength of the CR.

- 2. Influence of Predictiveness:

- 3. Exposure to Cs:

- Is the CR completely extinct? How can we tell?

Spontaneous Recovery

-

- Becomes weaker each time it occurs after extinction.

Spontaneous Recovery

- To Pavlov, extinction is not a matter of "unlearning",

    - Example: Imagine that you have a problem with test anxiety. Part way through taking a test, your anxiety level starts to die down. Then, someone walks into the test late and you experience a fresh wave of anxiety.

Evidence for Pavlov's View

- What causes this? Perhaps the process of <u>disinhibition</u>

- This shows that the CR is still right there, ready to return once your "guard" is down
    - It also provides evidence for Pavlov's view that extinction is caused by inhibition rather than unlearning.

Classical Conditioning: A Refinement

- It is not very efficient to have to learn a separate conditioned response to every single conditioned stimulus that is similar.

- At other times, it is important only to make the conditioned response to a very particular stimulus.

- What are these processes called?

Generalization and Discrimination

- Stimulus Generalization:

| higher tone [less salivation] | original tone | lower tone [less salivation] |

- The CR is typically weaker in the nontrained stimulus.

Examples of Stimulus Generalization

- Example: someone frightened at the sight of blood may transfer their fear to other red objects.

- Little Albert -- conditioned fear of white rat that generalized to other white fuzzy things

Now he fears even Santa Claus

- Can lead to the onset of Phobias- Overgeneralization of fears to inappropriate stimuli

Generalization and Discrimination continued

- Stimulus Discrimination:

  –

  – Example: baby learns that food comes from its Mom (CS=Mom's face) but not from any other person.

Extensions of Classical Conditioning

- Higher Order Conditioning

- Sensory Preconditioning

Higher Order Conditioning

-

- First Order Conditioning
  - "Whirring" sound (NS1): Drill(US)→ fear (UR)
  - "Whirring" sound (of drill) (CS1)→ fear (CR)
- Second Order Conditioning
  - hairdryer (NS2): Whirring (CS1) → fear (CR to Whirring)
  - Hairdryer (CS2) → Fear (CR to hairdryer)

Characteristics of Higher Order Conditioning

- The CR is transferred

- The second CS is

- The second CS (CS2) usually has a

- Very difficult to obtain third-order conditioning, but possible.
  - Results in a very weak CR.

Higher-Order Conditioning in Humans: Evaluative Conditioning

- Subjects asked to evaluate stimuli on a likert scale from "very disliked" to "very liked"
- 1st Order = words that are rated either + or –
- 2nd Order = nonsense syllables (e.g. pog, giff, tiff)
- If repeatedly paired with + or – word,

- Also done with adjectives and face
  - Subjects rated faces initially paired with + or - adjectives
  - Subjects could not even tell you why they disliked the face
  - Advertising

Sensory Preconditioning

- Similar to second-order conditioning,

  - Preconditioning Phase:
    - Music from Game (NS1) → Game controller(NS2)
  - Conditioning Phase 1:
    - Music from Game (NS): graphics(US) → sick (UR)
    - Music from Game (CS1) → sick (CR)
  - Conditioning Phase 2:
    - Game controller (CS2) → sick (CR)
- NS1 and NS2 have been associated,

  - Example: associate 2 people you always see together. When finally meet one, you tend to associate impressions with 2nd person as well.

Sensory Preconditioning

- The second CS (CS2) usually has a

- Preconditioning is stronger if NS1 and NS2

- Works best if NS1 and NS2 are

- Learning about stimuli in absence of a behavioral response