Operant Conditioning

Concepts and Schedules of Reinforcements
Vocabulary: Shaping

• A procedure used for teaching complex behaviors that at first, reinforces approximations of the target behavior
  – Example: Dancing

• However...as training proceeds, we tend to expect more, before we will give reinforcement
Vocabulary: Shaping

- Successive Approximations
  - Behaviors that are progressively closer to a target behavior for which the organism may get rewarded
Vocabulary: Shaping

- Shaping of our behaviors can cause them to become habitual
  - Example: Have you ever wondered how you got home???
Vocabulary

- Extinctions
  - Reinforcers are withheld
  - Stimulus that decreases the operant
    - Example: Taking away the food pellets...rat will not hit the lever anymore
  - Can lead to frustrations and even rage
Discriminative Stimuli

• Discriminative Stimuli
  – Act as cues
  – Provides the organism with a cue for making a certain response in order to obtain reinforcement
    • Example: We answer the phone when it is ringing…not when it is not
    • Example: Police car is a cue for us to slow down
Schedule of Reinforcement

- Continuous Reinforcement
  - Every correct response is reinforced
    - We become less thirsty every time we take a drink of water, we become less chilly every time we put on more heavy clothes
    - With continuous reinforcement, it is more likely for a behavior to stop when it is not rewarded
Schedule of Reinforcement

• Partial Reinforcement
  – Every correct response is not reinforced
  • Example: Gambling
  
  – How does this work???? Why would we keep doing something if we are not getting reinforced for our actions???
Schedule of Reinforcement

• How it works…
  – Once the behavior (operant) has been acquired (reinforced), it can be maintained by tapering off to a schedule of partial reinforcement
  – More like real-life
Schedule of Reinforcement

• Fixed-Interval Schedule
  
  – A fixed amount of time, must elapse between the previous and subsequent times before reinforcement for correct responses occurs
  
  – In other words, the interval of time that must pass before reinforcement becomes possible, is always the same
    
    • An organism’s response rate falls off after each reinforcement and then picks up again at the time when reinforcement will occur approaches

Figure 9. Cumulative response curve for a fixed interval
Schedule of Reinforcement

- Variable-Interval Schedule
  - Varying amounts of time are allowed to elapse between occurrences of reinforcement
  
  - Example: There could be a 3 minute variable-interval schedule (the mean), but the intervals might vary from 1 to 5 minutes
  
  - Example: Pop quiz, fishing
Schedule of Reinforcement

• Variable-Interval Schedule
  – Reinforcement is unpredictable…therefore, the response rate is steadier but lower
    • Example: If we know we have weekly quizzes, we will probably just work hard to pull things together just before the quiz (Fixed Interval). But if we know that there could be “pop quizzes”, we are more likely to be ready at all times.
    • However, our efforts will never be very high (we will never cram for “pop quizzes”
Schedule of Reinforcement

- Fixed-Ratio Schedule
  - Reinforcement is provided after a fixed number of correct responses have been made
Schedule of Reinforcement

• Variable-Ratio Schedule
  – Reinforcement is provided after a variable number of correct responses have been made
    • Example: In a 10:1 schedule, the mean number of correct responses that would have to be made before a subsequent correct response would be reinforced is 10, but the ratio of correct responses will vary from, 1:1 to 20:1
Schedule of Reinforcement

- Both Fixed and Variable Ratio Schedules, maintain a high response rate
  - Example: If a worker gets paid after they sew five dresses (5:1), he/she will sew at a high rate, with brief pauses
How Does Operant Conditioning Work in Our Daily Lives?

- Behavior Modification
  - Bring about desired changes in behavior
- Socialization (how do we choose who to play with)
- Biofeedback Training
- Superstitious Behavior
Skinner

• Superstitious Behavior
  – Occurs when an individual falsely believes that a connection exists between an act and its consequences
  – Reward follows a response but the two are not related
Superstitious Behavior

• Example: Gambler in Las Vegas blows on the dice just before he rolls and wins $1,000. Next roll, he follows the same ritual and wins again

• Example: Baseball Players