Operant Conditioning

Skinner and Thorndike
Operant Conditioning

- Organisms learn to do things, or not to do things, because of the consequences of their behavior
  - Example: Avoid M&M’s because they made you sick, want water when we are thirsty, a heater when we are cold
Review

- **Classical Conditioning** focuses on how organisms form anticipation about their environments (involuntary behavior). **Operant Conditioning** focuses on what they do about them (voluntary behavior).**
Edward Thorndike

- Student at Columbia University
  - Bringing in stray cats for experiments on the effects of rewards and punishment
  - Place them in a puzzle box. If the cat managed to pull a string, it could jump out of the box and get some food.
Edward Thorndike

- Law of Effect
  - Responses (pulling the string) are “stamped in” or strengthened by rewards and “stamped out” by punishments
  - In other words, if an action is followed by a pleasurable consequence it will be repeated
  - If an action is followed by an unpleasant consequence, it will tend to not be repeated
B.F. Skinner-Burrhus Frederick Skinner 1904-1990

- Invented the Skinner Box
  - Causes of behavior are in the environment
Skinner Box

- Rat
- Soundproof box
- Pedal releases food pellet
  - What happens???
  - Operant Conditioning
  - Actions are voluntary
  - We act on our environment and the consequences determine whether or not the action is repeated
Operant, or Instrumental Conditioning

Terrell smiles
Father picks up Terrell
Terrell keeps smiling

AR (accidental response)
R (reinforcement)
DR (deliberate response)
Skinner’s Vocabulary

• Operant
  – The behavior occurring just before the reinforcer
    • Example: Hitting the Lever
Skinner’s Vocabulary

• Reinforcer
  – Stimulus that increases the operant....
  – Increases the probability of the response it follows
    • Food Pellet
Skinner’s Vocabulary

- Reinforcer (types)
  - Can be positive or negative
  - Positive- the reinforcement of a response by the addition or experience of a pleasurable consequence
    - Hug, gold star, smile, raise, good grades
      - Greater the reward, harder we will work
Types of Reinforcers

• Negative- reinforcement of a response by the removal, escape from, or avoidance of an unpleasant stimulus
  – Get out of bed, stop the nagging, plan ahead

• Can be both positive and negative
  – Eat a delicious dinner when your stomach hurts
Types of Reinforcers

• Immediate vs Delayed
  – Immediate reinforcers are more effective than delayed reinforcers

• Short term consequences of behavior provide more of an incentive than the long-term consequences
  – Socializing when you are supposed to study…socializing is immediately rewarding…studying is not
Types of Reinforcers

• Primary Reinforcers (satisfies a basic need)
  – Effective because of an organism’s biological makeup
    • Food, water, adequate warmth, touch, and even pain
Types of Reinforcers

• Secondary Reinforcers
  – Any reinforcer that becomes reinforcing after being paired with a primary reinforcer, such as praise, tokens, or gold stars
  – Also called Conditioned Reinforcers
    • Money, attention, social approval
Punishment

- The opposite of reinforcement
- Any event or stimulus that, when following a response, causes that response to be less likely to happen again (weakens responses)
2 Kinds of Punishment

• Punishment by Application
  – Occurs when something unpleasant (such as spanking or scolding) is added to the situation or applied

• Punishment by Removal
  – Often confused with negative reinforcement
  – Occurs when the behavior is punished by the removal of something pleasurable or desired after the behavior occurs
    • Example: Grounding
Problems with Punishment

- Only temporarily suppresses behavior
- Causes child to avoid punisher
- Encourages lying
- Creates fear and anxiety
- Hitting shows children how to handle aggression
Ways to Make Punishment More Effective

- Punishment should immediately follow the behavior it is meant to punish
- Punishment should be consistent
- Punishment of the wrong behavior should be paired, whenever possible, with the reinforcement of the right behavior