Slide 1: What is Learning?
- Learning: a relatively durable change in behavior that is due to experience.
- Common examples:
  - Language
  - Sports Mastery
  - Social Behavior
  - Reading etc
- Types of Learning to be studied:
  - Observational Learning (Bandura): previous classes, a little here
  - Classical Conditioning (Pavlov): 
  - Operant Conditioning (Skinner)

Slide 2: Classical Conditioning
- a/k/a Pavlovian Conditioning
- background on Pavlov: “Pavlov’s Dog!”

<table>
<thead>
<tr>
<th>Stimulus Pair</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>Salivate</td>
</tr>
<tr>
<td>(Sound)</td>
<td>Salivate</td>
</tr>
</tbody>
</table>

Slide 3: Pavlovian Terminology
- Unconditioned Association: primary (natural) association between S-R
- Unconditioned Stimulus (UCS): natural stimulus properties
- Food
- Unconditioned Response (UCR): natural response to UCS
- Salivating
- Neutral Stimulus (NS): a stimulus unable to elicit a response.
- Conditioned Association: acquired S-R where there previously was none
- Conditioned Stimulus (CS): stimulus that acquire some of the stimulus properties of the UCS.
- Sound
- Conditioned Response (CR): response to a CS. Same or similar response to the UCR.
- Salivating
**Slide 4: Classical Conditioning**

![Diagram of Classical Conditioning]

- **UCS**: Food
- **CS**: Sound
- **Salivate**:CR
- **Salivate**:UCR

**Slide 5: Pavlovian Terminology (cont.)**

- **Acquisition**: The formation of a new conditioned response tendency.
  - For example, salivate to tone
- **Trial**: A single presentation of a stimulus "pair" to an organism
- **Extinction**: The gradual weakening of the S-R bonds
- **Spontaneous Recovery**: Reappearance of an extinguished response after a period of non-exposure to the CS

**Slide 6: "Classical" Conditioning**

![Diagram of "Classical" Conditioning]

- **UCS**: Balloon Popping
- **CS**: Holding Balloon
- **UCR**: Cringe, Flinch, etc.
- **CR**: Actions
Slide 7: CC in Real Life - the CER

- The “Conditioned Emotional Response” (CER):
  - a classically conditioned emotional response
- Katie B - a story of smelly young love

- Paradox by the Dashboard Light
- Cover Girl Foundation

- MMMM
- MM

- UCS
- CS
- CR
- UCR

Slide 8: CER Continued

- UT Psychology Building, Dups, Highway Turnoffs etc.
- Fears (Phobias) //// Your Life!!!

- your choice
- your choice
- your choice
- your choice

- UCS
- CS
- CR
- UCR

Slide 9: Important Factors in S-R binding strength

- S-R bonds vary in strength (wax and wane, which allow us to adapt).

- Temporal Contiguity - time association between two events

- Neutral Stimulus Novelty - must be unusual or particularly powerful to be linked to UCS
Slide 10: Generalization and Discrimination

- **Stimulus Generalization**
  - Little Albert- (CD clip)
  - UCS- Loud Noise UCR- crying
  - NS/CS- white rat CR- crying
  - Generalization- gradual fear of furry objects

- **Stimulus Discrimination**
  - Grady (my dog) and the cars in driveway
  - UCS- Owner UCR- happy dog behavior
  - NS/CS- car engine CR- happy dog behavior
  - Discrimination- only owner’s car CS= my car in driveway CR- happy dog behavior

Slide 11: Higher Order Conditioning

Slide 12: Operant Conditioning (Skinner)

- Much behavior is controlled by their consequences (future stimuli) not drawn out by event that precede it such as in classical conditioning.
- Operant vs. Classical Conditioning

- Classical:
  - UCS  
  - Unconditioned Behavior
  - CS  
  - Conditioned Behavior

- Operant:
  - Behavior
  - Consequences
    - Reinforcement
    - Punishment
**Slide 13: Terms of Operant Conditioning**

- **Reinforcement**: consequences following behavior that increases the likelihood of that behavior being repeated in the future.
- **Punishment**: consequences following behavior that decreases the likelihood of that behavior being repeated in the future.

**Slide 14: Operant Terms Continued**

- **Rate of Response**: strength of learned response (remember no S-R bond as in CC, more of a R-S bond).
- **Acquisition**: developing a new response tendency
- **Extinction**: gradual weakening of response
  - What would cause this?
- **Shaping**: the reinforcement of closer and closer approximations of the desired response.

**Slide 15: Positive/Negative Reinforcement**

- **Positive Reinforcement**: increases response tendency by **presenting a rewarding stimulus**.
  - (Class exercise x2)
- **Negative Reinforcement**: increases response tendency by **removing an aversive/unpleasant stimulus**.
  - (Class exercise x2)
Slide 16: Schedules of Reinforcement

- Schedules of Reinforcement - a specific pattern of presentation of reinforcers over time.
  - Continuous Reinforcers
  - Intermittent Reinforcers

- Which would be more existent to extinction?

Slide 17: Schedules (cont.)

- Ratio Schedules - rate of reinforcement determined by number of appropriate responses.
  - Variable Ratio [VR] - slot machines, internet surfing (?)

- Interval Schedules - rate of reinforcement determined by first response after a time interval has passed.
  - Fixed Interval [FI] - checking email on university server that updates every 10 minutes.
  - Variable Interval [VI] - checking for slide notes on internet

Slide 18: Neg. Reinforcement & Punishment

- Quick Quiz

- Negative Reinforcement - increases response tendency by removing an aversive/unpleasant stimulus.

- Punishment - consequences following behavior that decreases the likelihood of that behavior being repeated in the future.
  - Anything that leads to a weakened response tendency


**Slide 19: Punishment**

- Effective use of:
- Apply swiftly after unwanted behavior
- Severe enough to be effective
- Consistent application after unwanted behavior
- Explain punishment
- Minimize physical punishment, WHY?
  - general suppressive effect.
  - modeled (observational learning) → future aggression.
  - often strong emotional backlash focused on source.