

Lecture 6—Learning: Classical Conditioning

1. Learning: relatively permanent change in behavior
 - a. 2 types
 - b. Associative learning: when you associate two things together, linking or pairing ideas or experience together
 - c. Cognitive learning: higher level thinking, knowing, understanding, like what you learn in classes
2. The ABC's of behaviorism
 - a. Antecedent, the situation → events that come before a behavior
 - b. Behavior or response, anything observable and identifiable
 - c. Consequence, effects that follow the behavior
3. Behavior: observable things that people do
4. Observable behaviors: like calling a girl trashy, how? , Miley Cyrus behaviors
5. Early research in behaviorism
 - a. Looked at simple behaviors in primitive animals
 - b. Caterpillars → light in front of them causes movement, not because they “want” to turn towards the light, light from the side cause greater muscle tension on one side of the body, another way of describing this relationship
 - c. Stimulus-response psychology: attempt to explain behavior in terms of how each stimulus triggers a response
6. How does this relate to learning?
 - a. Ivan Pavlov, rung bell when feeding dog, so the dogs responded to the bell before they saw the food, realized response associated w/ bell
7. Key terms
 - a. Reflex
 - b. Unconditioned stimulus (US): automatic process, hasn't be conditioned or taught, blow in someone's face
 - c. Unconditioned response (UR): how the person responds to US, They blink
 - d. Conditioned stimulus: (CS) like dog example, ringing of bell
 - e. Conditioned response (CR), salivating when it hears bell
 - f. Before conditioning, food the US, produces salivation the UR
 - g. During condition, tuning fork + food= salivation, UR
 - h. Neutral stimulus, doesn't cause response by itself, only paired with something
8. Principles of classical conditioning
 - a. Acquisition: response becomes reinforced
9. Principles continued
 - a. Expectancies: thoughts about how events are interconnected
 - b. Extinction: eliminating connected between the CS and the US
 - c. Spontaneous recovery: like it takes a long time to condition a response, it takes a long time to get rid of it, but when you bring it back they quickly pick it back up
 - d. Generalization: responding to stimuli similar to the CS
 - e. Discrimination: responding differently to different stimuli even if they're similar, like cat knowing it's bowl from the dogs
10. Classical conditioning in action: phobia

- a. Involuntary responses produced by autonomic nervous system (sympathetic)
- b. Conditioned emotional response → phobia: persistent fear of a specific stimuli even in its absence
- c. Desensitization: get rid of the phobia gradually

Lecture 7—operant conditioning

1. Edward Thorndike: operant conditioning → instrumental learning
 - a. Applied scientific method to messing w/ cats
 - b. Animals use trial and error, no insight or genius just tried different stuff to see what would work and what wouldn't
 - c. Graphed frequency of behaviors as a learning curve, behaviors that worked happened more frequently
 - d. Learning occurs when certain (successful) behaviors are strengthened at the expense of others
 - e. Thorndike's law of behavior: behaviors that are more successful happen more frequently and vice versa
2. Operant conditioning
 - a. Called that because the subject operates on the environment to produce an outcome
 - b. It is based on voluntary behavior
 - c. In classical conditioning the subject's behavior has no effect on the outcome
3. Reinforcement and punishment
 - a. Reinforcement: increases the probability of a behavior, positive like getting a starburst for answering a question
 - b. Two types
 - i. Primary: don't have to be learned → unconditioned, don't have to be told or taught that it's a good thing
 - ii. Secondary: conditioned → have to learn that it's good and value, ex. money
 - c. Examples of reinforcers
 - i. Vary based on the individuals, like one direction tickets
 - ii. As well as antecedents, what happens when you don't get it
 - iii. Primary → food, water, sleep, sex
 - iv. Secondary → money, praise, stickers
4. Punishment: decreases the probability of a response
 - a. Most effective when it is immediate and predictable
 - b. Punishment is generally less effective than reinforcement in changing behavior
 - c. Effects are not long as long-lasting
5. Four types
 - a. Target behavior, to increase, add stimulus → positive reinforcement
 - b. To decrease target behavior, add stimulus, positive punishment

- c. To increase target behavior, take away stimulus, negative reinforcement, avoidance learning → avoid Wal-Mart if it gives you panic attacks, increases likelihood that you don't go to Wal-Mart so you don't get the negative effects
 - d. To decrease target behavior, take something away, negative punishment
6. Identify
- a. Taking a car away for speeding tickets → negative punishments
 - b. Getting ps4 time for finishing lecture early → positive reinforcement
 - c. Doing extra burpees for being late to gym → positive punishment
 - d. Taking ibuprofen for a headache → negative reinforcement
 - e. Temper tantrum?
 - i. Mom buys kid a toy → positively reinforces the behavior for the kid
 - ii. Mom has negatively reinforced it, by taking away the tantrum, she is reinforces the behavior in the future
7. Other principles of operant conditioning
- a. Extinction: response does not receive reinforcement, like kid not getting the toy when he screams
 - b. Generalization: similarity of new stimulus to reinforced stimulus, if one teacher has candy, don't just associate one adult w/ candy but all with it, happens in nature w/ frogs one poisonous frog has yellow spots, so don't eat any frogs w/ yellow spots even though others aren't poisonous,
 - c. Discrimination: reinforcement depends on cues, some stimulus discriminates the response, like stopping at a red but going at a green
8. B.F. Skinner
- a. Stimulus control: based on stimulus, something's will be reinforced while other things won't, like acting differently in bars and at church
 - b. Responses depend on discriminative stimuli
 - c. Helped understand principles unique to operant conditioning
9. Operant conditioning principles
- a. Shaping: reinforcing successive approximations to a goal
 - b. Response chaining: linking of sequencing of shaped behaviors
 - c. Schedule of reinforcement
 - i. Fixed-ratio: delivering starburst on 1:1 ratio, every time you answer you get a starburst, usually less, like 5 correct behaviors gets a reward
 - ii. Fixed-interval: get reinforced after a set amount of time, like a paycheck every two weeks, doesn't matter how much you do stuff right, just after a time period
 - iii. Variable-ratio: makes people have to gamble, like slot machines
 - iv. Variable-interval: like checking how many likes you get on insta, check at random schedule, variable amount of time producing reinforcement
10. Other types of learning
- a. Cognitive learning: thinking, knowing, understanding
 - b. Modeling: observational learning
11. Bobo doll study
- a. Kids mimic the aggressive behavior of the adults