The Behavioral Approach

It’s all about observable behavior!
In order to understand another person, you must simply understand the consequences he/she experienced during a lifetime.

Ivan Pavlov
B.F. Skinner
The Behavioral Approach

- Skinner: we are products of our learning

- Respondent behavior
  - Unlearned behavior
  - Example: I touch something hot, I pull my hand back
  - Emitted behavior

- Learned behavior
  - Conditioned behavior
  - Substitute one stimulus for another
  - Example: I put on a coat when it’s cold out because I’ve learned what it feels like to be cold
  - Elicited behavior
Associations

Please make a T chart in your notes

Title one side “positive” and one side “negative”

Take a minute and think of sounds, smells, tastes, etc...that you associate with other things and write down as many as you can. Put the positive associations on one side and the negative associations on the other.
Pioneered by Ivan Pavlov

Classical conditioning
- INVOLUNTARY behavior determined by what PRECEDES it

Pavlov’s experiments with dogs
- Pavlov paired a neutral stimulus (a bell) with a meat powder (which made the dog salivate).
- After continued pairings, dog becomes conditioned
- Eventually, dog salivates to bell alone
Identifying Parts

- **Unconditioned Stimulus (UCS)**
  - Stimulus that triggers reflexive response
  - Meat powder

- **Unconditioned Response (UCR)**
  - Reflexive response
  - Salivation

- **Conditioned Stimulus (CS)**
  - Neutral stimulus that *doesn’t* elicit reflexive response
  - Bell

- **Conditioned Response (CR)**
  - Repeated pairing of UCS and CS so CS triggers reflexive response
  - Salivation

* Hint: replace “conditioned” with “learned” if it makes more sense!
Ivan Pavlov’s Experiments

Dwight
Little Albert

- John Watson – famous behavioralist
- Little Albert – 11 month old orphan
- Showed him white rat. No fear.
- Made loud noise. Albert cried.
- Showed him white rat and made loud noise. Albert cried. Repeated several times.
- Eventually Albert cried at white rat alone.
Identify the parts

Unconditioned Stimulus (UCS)
- Loud noise

Unconditioned Response (UCR)
- Fear/crying

Conditioned Stimulus (CS)
- White rat

Conditioned Response (CR)
- Fear/crying
“Give me a dozen healthy infants, well-formed, and my own specified world to bring them up and I’ll guarantee to take any one at random and train him to become any type of specialist I might select—doctor, lawyer, merchant-chief, and yes, ever beggarman and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors.” (1930)

"Trading Places"
Definitions

- **Extinction**
  - diminished response to conditioned stimulus when no longer coupled with UCS. (stop giving meat powder with bell and dog will stop salivating to bell)

- **Spontaneous recovery**
  - reappearance of extinguished CR after a rest

- **Generalization**
  - tendency to respond to any stimuli similar to CS (Dog salivates to other noises)

- **Discrimination**
  - ability to distinguish between the CS and similar stimuli (Dog only salivates to specific tone)
Application to Little Albert

- If Little Albert generalized, what would we expect to happen?
  - He might cry at the sight of similar objects
  - he did – rabbit, dog, sealskin coat, some rumors – Santa’s beard

- How could we teach Little Albert to discriminate?
  - Continually expose him to stimuli similar to the rat, but only make the loud noise when exposing him to the rat

- How could Little Albert’s conditioning be extinguished?
  - Continually expose him to a white rat without making the loud noise

- If Little Albert is still alive, his fear of white rats is likely to have been extinguished (no loud noise when he sees a rat). However, occasionally, when he sees a rat, he may find that his heart races for a second or two. What is this called?
  - Spontaneous recovery
A friend has learned to associate the sound of a dentist’s drill to a fearful reaction because of a painful experience getting a root canal. In this example, what is the:

- UCS?
  - Pain from the drill
- UCR?
  - Fear
- CS?
  - Sound of the drill
- CR?
  - Fear
How could each of the following occur?

- **Extinction**
  - If pain does not result when drill is used, the CR (fear) will diminish.

- **Spontaneous recovery**
  - child returns for a visit later and the sound of the drill elicits fear again.

- **Generalization**
  - child becomes fearful of the sound of any motorized drill

- **Discrimination**
  - child learns only high pitched dentist drill is associated with pain and not low pitch hum of vacuum cleaner.
A BMW commercial has lots of pretty people in it. People who watch the commercial find the people pleasing to look at. With repeated viewing, they begin to associate the car with the pleasant feeling.

- **UCS?**
  - Pretty people
- **UCR?**
  - Feeling good
- **CS?**
  - Sight of BMW
- **CR?**
  - Feeling good
Example?

- You get in a car accident and find you are afraid to get in a car.
  - UCS?
    - Pain of the accident
  - UCR?
    - Fear
  - CS?
    - Presence of the car
  - CR?
    - Fear
You go to a fancy restaurant and decide to try an appetizer you’ve never tried before – escargot. After dinner, you go to a concert and get violently ill (from a stomach virus that’s been going around). From then on, you can’t even look at snails without feeling sick.

- **UCS?**
  - Stomach virus
- **UCR?**
  - Feeling sick
- **CS?**
  - Sight of snails
- **CR?**
  - Feeling sick
You are cruising on Hwy. 97 at 75 mph when you see flashing police lights behind you. You pull over and the policeman gives you a ticket. You get in BIG trouble with your parents. The next time you see flashing police lights, your heart rate speeds up.

- **UCS?**
  - Getting in trouble
- **UCR?**
  - Increased heart rate
- **CS?**
  - Flashing lights
- **CR?**
  - Increased heart rate
Cancer patients tend to associate the nausea produced by chemotherapy with the hospital setting.

- UCS
  - chemotherapy
- UCR
  - nausea
- CS
  - hospital
- CR
  - nausea
Practical applications of classical conditioning

- Stop drug or alcohol addiction by pairing a nausea-producing drug with the drug of addiction.
  How?
- Extinguish a drug addiction by administering a drug that blocks the pleasant feeling normally elicited by the drug.
  How?
- If a child is afraid of rabbits because one bit him when he was young, you can expose the child to rabbits in safe environments repeatedly until the behavior is extinguished.
  How?
Practical applications of classical conditioning

- Extinguish feelings of anxiety associated with trauma (PTSD).
- How?
- Treatment of anxiety or depression by pairing a relaxed state with a gesture.
- How?
- Pair some behavior with an immune response so that an immune response can be triggered by a voluntary thought or behavior.
- How?
Associative learning – learning that certain events occur together

- Operant conditioning – rewards and punishment; VOLUNTARY behavior determined by anticipation of something that follows it
- Theory of B.F. Skinner
- Operant conditioning
  - Changes the environment
  - Can modify the behavior
  - Reinforced behaviors are repeated
  - Unreinforced behaviors aren’t repeated
The question:

What do you see as motivating factors for you? In other words, what serves as a “reinforcement” for you, and what serves as a “punishment” for you?

Choose someone close to you. What do you perceive to be the motivating factors for that person? What are his/her “reinforcements” and “punishments”?
Reinforcers

- **Positive reinforcers:**
  - Strengthen response by **ADDING** positive stimulus
  - Example?

- **Negative reinforcers:**
  - Strengthen response by **REMOVING** unpleasant stimulus
  - Example?

- According to Skinner, either of these can lead to an increase in the frequency of a response or behavior.
Positive Reinforcement – Example

**Behavior**
You put coins into a vending machine

**Presentation of a pleasant or positive stimulus**
You receive a cold can of soda, delicious treat

**Frequency of behavior increases**
You put coins in vending machines in the future
Negative Reinforcement – Example

**Behavior**

In the middle of a boring date, you say you have a headache.

**Termination of an unpleasant stimulus**

The date ends early

**Frequency of behavior increases**

You use the same tactic on future boring dates.
To be effective, reinforcers need to happen with little delay between the action and the reinforcer.

Schedules of reinforcement:

- **Continuous reinforcement**: reinforce every time wanted response occurs
- **Fixed-ratio**: fixed number of responses = reinforcement
- **Variable-ratio**: reinforcement after certain number of responses, but number varies
- **Fixed-interval**: reinforcement after set amount of time has passed
- **Variable-interval**: reinforce response after some period of time, but amount of time varies
Reinforcers – Examples

- Schedules of reinforcement:
  - **Continuous reinforcement:**
    - Every time I give a correct answer the teacher says, “Good job!”
  - **Fixed-ratio:**
    - With every tenth cup of coffee I buy, I get a free cup!
  - **Variable-ratio:**
    - Sometimes when I pull the handle on the slot machine, I get a payout; other times, I get nothing at all.
  - **Fixed-interval:**
    - Every 75 minutes the bell rings and I get to leave class and see my friends.
  - **Variable-interval:**
    - Sometimes when I go fishing I get a bunch of bites quickly, other times I only get them occasionally.
Punishments

- **Positive punishment:**
  - Weaken response by **ADDING** unpleasant stimulus
  - Example?

- **Negative punishment:**
  - Weaken response by **REMOVING** pleasant stimulus
  - Example?

- According to Skinner, either can lead to decrease in frequency of response or behavior

- However . . .
- models aggression to solve problems
- breeds anger in recipient
- doesn’t provide alternative behavior (behavior only goes away when punisher is around)
Positive Punishment

Behavior
You touch a hot iron

Presentation of an unpleasant stimulus
Your hand is burned

Frequency of behavior decreases
You no longer touch hot irons
Behavior
You’re careless with your ice cream cone.

Removal of a pleasant stimulus
The ice cream falls to the ground.

Frequency of behavior decreases
You’re not as careless with the next ice cream cone.
Which is which?

1. A child is attacked by a dog. The child now experiences anxiety around all dogs.
   1. Classical

2. You feel hungry in 3rd period most days because it is lunch time. When you enter your 3rd period class on a half day, you feel hungry.
   1. Classical

3. You do your homework every night to get good grades and avoid punishment.
   1. Operant

Classical – involuntary, stimulus precedes behavior
Operant – voluntary, stimulus follows behavior
Some examples:

- **George and the new job**
  - Classical or operant conditioning?
- **Elaine and the Soup Nazi**
  - Classical or operant conditioning?
- **The end of the Soup Nazi**
  - Classical or operant conditioning?
- **Sheldon trains Penny**
  - Classical or operant conditioning?
## Classical vs. Operant Conditioning

<table>
<thead>
<tr>
<th>Classical Conditioning</th>
<th>Operant Conditioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavior is determined by what PRECEDES it.</td>
<td>Behavior is determined by anticipation of what follows it.</td>
</tr>
<tr>
<td>Involuntary</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Dog salivates after a tone.</td>
<td>Dog sits in anticipation of getting a treat.</td>
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</tbody>
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A very bright (mildly painful) light is turned on a rat. The rat has learned that he can turn off the light by pressing a lever on the other side of his cage. As soon as the light comes on, the rat runs across the room and presses the lever. **CLASSICAL**
Classical or Operant?

When a mother strokes her infant’s skin, the stroking creates pleasure responses in the baby. After this goes on for many days, the baby begins to show pleasure responses simply at the sight of her mother (even before being touched).

CLASSICAL
Imagine you have a friend who keeps the temperature in her home so high that each occasion on which you visit her you find yourself perspiring. The last time you visited her, you noticed that you began to perspire and became uncomfortable as soon as you saw her house (even before you got inside).

CLASSICAL
A patient in a mental hospital is very disruptive at mealtimes. She grabs food from the plates of those sitting near her and tries to cram the food in her mouth. Because this behavior of stealing food is very undesirable, a plan is developed whereby every time the patient steals food from other plates, she is immediately taken to a room without food.

OPERANT
Alice leaves her clothes and toys all over her room. It seems that the only time she cleans up her room is when her mother yells at her. When she yells at her, Alice picks up her clothes and puts away her toys.

OPERANT
Other influences

- Shaping
  - Rewarding steps toward behavior
  - Eventually initial steps aren’t rewarded
- Example: Johnny gets poor grades because he never turns in homework
- Goal: Johnny’s grades improve

- Every time Johnny writes down his homework in his planner, he gets a reward
- When Johnny has his homework in the planner AND he can produce the homework from his backpack, he gets a reward
- When Johnny has the planner AND the homework AND completes the homework, he gets a reward.
- When Johnny has the planner AND the homework AND completes it AND turns it in, he gets a reward.
- Eventually Johnny will only be rewarded for good grades
Other influences

- Superstitions
  - Accidental reinforcement
  - We make an incorrect association
  - Something “lucky”
  - Baseball player

- What are your superstitions? How are they rewarded?
Other influences

- Overjustification effect
- Rewarded for behaviors we naturally enjoy; we sometimes lose intrinsic motivation
- Learning and grades?
- Professional athletes?
Criticisms of Behavioralism

- Deemphasizes role of internal thoughts and feelings in behavior
- Presents humans as lacking free will
- Ignores biological predispositions
Support for Criticisms

- Experiments (human and animal) indicate biological predispositions can influence conditioning
- Learning occurs in absence of reinforcement or punishment
  - Latent learning
  - Overjustification effect
Observational Learning

- Known as modeling
  - Observing behavior of a model and repeating it
- Led by Albert Bandura
- Used Bobo doll experiment
  - Had kids watch adult abuse doll
  - Put kids in the room with the doll
- What do you think the kids will do?

Bobo doll experiment

80's anti-drug commercial
Modeling

- Pro-social Behavior
  - constructive behavior
Modeling

- Antisocial Behavior
  - unproductive or destructive behavior
Modeling

- Make a T chart
- Label one side “pro-social”
- Label the other side “anti-social”
- List what you consider to be your pro and anti-social behaviors that you acquired through modeling
- What role do you see the media playing in modeling?
- **Reflection:** Explain where you see classical conditioning, operant condition, or modeling in your life.