Behavior Management: Beyond the Basics

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Basic Concepts in Applied Behavior Analysis

- *ABA: A Brief Background*
- *The ABA Umbrella*
- *Terminology and Definitions*
  - *Reinforcement Contingencies*
  - *Response Reduction Contingencies*
  - *Extinction*
  - *Function vs. Form*

A Brief (but important) Background

- Applied Behavior Analysis (ABA) is a *science*
- Behavior analysis is a scientific approach to understanding behavior and how it is affected by the environment
- It is behavioral learning theory in action
  - "Behavior" refers to all kinds of *actions* and *skills* (not just misbehavior)
  - "Environment" includes all sorts of physical and *social* events that might change or be changed by one's behavior
- The science of behavior analysis focuses on principles (that is, general laws) about how behavior works, or how learning takes place
- ABA is about understanding how people *learn* and how we can teach them new skills and *engineer* the physical and social environment in such a way that encourages the *independent* display of learned behaviors.

ABA has a Solid Research Foundation

- Through decades of research, the field of behavior analysis has developed many techniques for *increasing* useful behaviors (language, functional skills etc.) and *reducing* those that may be harmful or that interfere with learning
- ABA is the use of those techniques and principles to address socially important problems, and to bring about meaningful behavior change
- There are many terms you may hear that are misinterpreted as being different from ABA, but actually fall under the ABA umbrella.

Key Developments/Research: Behavioral Learning Theory

- Ivan Pavlov and the theory of classical conditioning
  - Pavlov studying salivation glands in dogs
  - Noticed that the dogs began salivating prior the presentation of any food
  - Turned out the dogs were responding to the lab coats since ALL of their food had been delivered by people wearing lab coats

Pavlovian Conditioning (Classical Conditioning)

- Pavlov began presenting other **Neutral** stimuli prior to the presentation of food to determine if he could alter the effects of the **Neutral** stimuli.
- With repeated pairings he found that he could.

Classical Conditioning

- Unconditioned Stimulus- FOOD (results in salivation)
- Neutral Stimulus- Bell (does not result in Salivation)

CLASSICAL CONDITIONING

REPEATED PAIRINGS

Neutral Stimulus

FIRST RING BELL

Unconditioned Stimulus

IMMEDIATELY
DELIVER FOOD

RESULTS

Eventually the bell begins to elicit salivation and then we call it a **Conditioned Stimulus**

John Watson

- “Father of Behaviorism”
- Landmark (yet extremely controversial study by today’s standards) explored how phenomenon we commonly refer to as “instincts” can actually be influenced by environmental events and classical conditioning.

Little Albert

- Watson utilized the techniques identified by Pavlov to condition fear in infants towards items that the infants had previously not been fearful of.
- “Taught” Little Albert to fear white rats, rabbits, etc.

Little Albert

Neutral Stimulus= White Rats= No emotion

Unconditioned Stimulus= Loud sound= Fear

REPEATED PAIRINGS

Conditioned Stimulus= White Rats= Fear

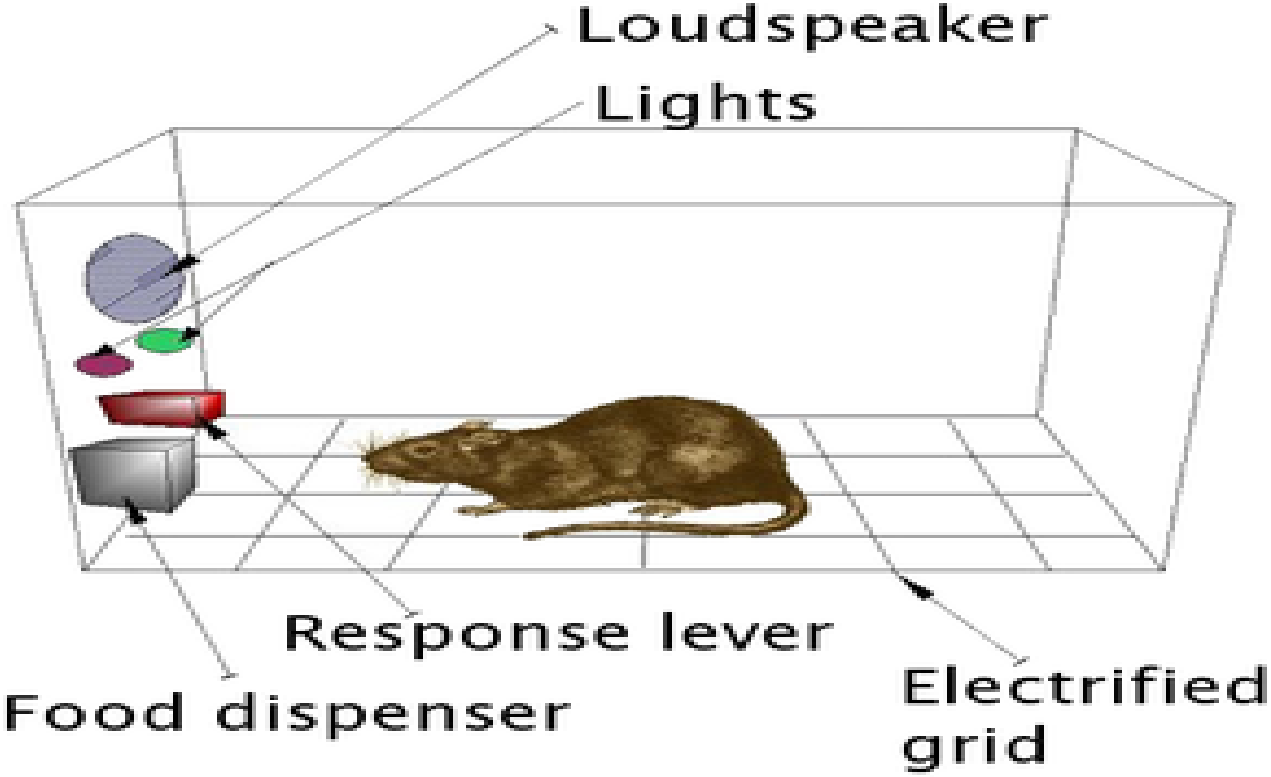
Little Albert Video

B.F. Skinner

- Studied the work of Pavlov, Watson, and Thorndike
- Developed the theory of Operant Conditioning
  - Consequences (as opposed to Antecedents) can impact behavior and either strengthen it or weaken it

Lever Presses

- Skinner initially studied behaviors of rats in what is now referred to as a Skinner Box



Operant Conditioning: Skinner Box

- Behavior= Lever Press
- Consequences Delivered:
  - Food Pellets: Increased Lever Press
  - Water: Increased Lever Press
  - Electric Shock: Decreased Lever Press
  - No consequences: Decreased Lever Press

Two Types of Behavior Emerge

- Respondent Behavior (Pavlov, Watson)
  - Behavior that responds to the environment
  - Behavior that is controlled by the events that immediately precede it
  - Reflexive Behavior
    - Change through conditioning
- Operant Behavior
  - Behavior that acts on the environment
  - Behavior that is controlled by the events that immediately follow it
    - Change through manipulating consequences

- Operant (learned)
  - Math problems completed
  - Words read per minute
  - Saying “cookie” when you want to eat one
  - Hitting someone that asks you to do difficult tasks
  - Spitting on someone that is not paying attention to you
  - Stopping at a red light
  - Getting a drink of water when you’re thirsty

- Respondent Behavior (unlearned)
  - Breathing
  - Blinking
  - Heart-rate
  - Salivating at the smell of good food
  - Knee tap reflex
  - Eyes watering after punched in nose
  - Glands releasing endorphins after exercise

Three-Term Contingency: A Model for Analyzing Behavior

What happens just prior to the behavior: ANTECEDENT

→

What does the student actually do: BEHAVIOR

→

What happens just after the behavior: CONSEQUENCE

For Us as Educators: Why Operant Behavior?

- Operant behavior makes up the LARGE majority of the type of behavior that we would be interested in changing.
- In fact, operant behavior makes up the most of our behavior…particularly once we've experienced life to the point of being school-aged.

Operant Behavior

- Acts on the environment to produce a consequence and in turn, the likelihood that the behavior will occur again is affected by its immediate consequence.
- This consequence is a **reinforcer** if (and only if) it leads to an increase in the behavior.
- In other words, Operant Behavior is behavior that is controlled by it’s consequences.

Elementary Principles of Behavior: The Impact of Consequences

- Increase Behavior
  - Reinforcement
    - Positive Reinforcement
    - Negative Reinforcement (Escape)
- Decrease Behavior
  - Punishment
    - Positive Punishment
    - Negative Punishment
  - Extinction

Reinforcement

- **Process in which a behavior is strengthened by the immediate consequence that reliably follows its occurrence**
  - Occurrence of a behavior
  - Followed by ADDITION of a stimulus or an INCREASE IN INTENSITY of a stimulus
  - Results in strengthening of the behavior

Types of Reinforcement

- **<u>Positive Reinforcement</u>**
  - Occurrence of a behavior
  - Followed by ADDITION of a stimulus or an INCREASE IN INTENSITY of a stimulus
  - Results in strengthening of the behavior

- **<u>Negative Reinforcement (Escape)</u>**
  - Occurrence of behavior
  - Followed by REMOVAL of a stimulus or a DECREASE IN THE INTENSITY of the stimulus
  - Results in STRENGTHENING of the behavior

Escape and Avoidance

- Escape bx: occurrence of bx results in termination of an aversive stimulus that was already present when the bx occurred
- Avoidance bx: occurrence of bx prevents presentation of aversive stimulus

Imagine this Scenario

- A mom is walking through a grocery store with her 3 year old child.
- Mom passes the candy aisle but does not turn down the aisle.
- The child, upon not getting to go down the candy aisle, begins to throw a fit.
- People all around the store are staring at mom and her crying child.
- Mom turns around and goes down the candy aisle.

Contrast the Types of Reinforcement

Negative Reinforcement for Mom

Mom hears tantrum and feels uncomfortable → Mom gives candy → Mom no longer hears tantrum and feels better

- Mom is more likely to give candy to tantruming child in future.

Positive Reinforcement for Child

Child has no candy → Child tantrums in store → Child has candy

- Child is more likely to tantrum in the future when in the store.

How About This Scenario

- Noah and his teacher are sitting at a table playing with a Kermit the Frog puppet. Noah really likes Kermit the Frog. Then, Noah's teacher pulls out some flash cards and takes the puppet from Noah because it's time to do a little bit of work. Noah begins screaming and immediately his teacher becomes uncomfortable (afterall, Noah's parents are watching). She tells Noah that he can play with the puppet for 2 more minutes and then they'll do the work. Noah smiles and begins happily playing with the puppet again.

Contrast the Types of Reinforcement

Negative Reinforcement for Teacher

Teacher feels Pressure and is uncomfortable → Teacher gives Noah puppet → Teacher feels less pressure and a bit more comfortable

Positive Reinforcement for Child

Noah loses access to Puppet → Noah begins to scream → Noah gains access to puppet

So What Makes Reinforcement Work…or RULES TO TEACH BY

- Immediacy
  - The longer the delay between the exhibition of the bx and the consequence, the less effective the consequence will be
- Contingency
  - When the response produces the consequence and the consequence does not occur unless the response occurs first

What else makes S^{R+} work?

- **<u>Establishing operations:</u>** events that change the value of a stimulus as a reinforcer…or…sometimes an item is a reinforcer…sometimes it isn't.
  - Deprivation: I haven't eaten since 8 am.
  - Satiation: I just scarfed down Thanksgiving dinner.....would I want more food? NO!

Schedules of Reinforcement

- Specifies whether every response is followed by a reinforcer or whether only some responses are followed by a reinforcer
  - <u>Continuous reinforcement (CRF)</u>
    - Use me to teach new behavior (acquisition)
  - <u>Intermittent reinforcement</u>
    - Use me to maintain behavior (maintenance)

What else *might* affect behavior?

- **<u>Setting events or contextual variables:</u>** events that occurred in the past (as in, not immediately before the behavior) that *may* or *may not* affect the likelihood of behavior.
  - The bus was late
  - Parents speak Spanish at home
  - New baby in the house
- We probably cannot use this type of information to modify instruction or programs, unless our **data** show consistent correlations between these types of events and the probability of behavior. In other words, we cannot use these types of events as “excuses” to not teach the children in the same way we always do.

Decreasing Behavior

- Extinction
  - The process that occurs when a behavior that previously received reinforcement no longer receives reinforcement.
  - **Extinction Burst**
    - A sudden and **temporary** increase in frequency, intensity, duration of a behavior that has been put on extinction.
    - Occurs 100% of the time

Using Extinction

- Effective method for decreasing behavior however:
  - Must have ability to be consistent in order to "ride out" the extinction burst
    - If you give in during the extinction burst…you have now taught the individual that all that is required is more/longer/harder exhibition of the behavior.
- Must always include a systematic reinforcement procedure to increase the alternative desired response.

Brief Discussion of Punishment

Which we will all try VERY hard not to use…because we all want to create “positive” learning environments.

Punishment

- Positive Punishment
  - The delivery of a stimulus that immediately follows a behavior and results in a decrease in the occurrence of that behavior

- Negative Punishment
  - The removal of a stimulus that immediately follows a behavior and results in a decrease in the occurrence of that behavior

Punishment Examples

- Tyler is a 6 year old boy with a very bad mouth. He’s only 6 years old, but he knows every 4-letter word in the book. Agatha, his mother, is somewhat old-school. She also had a bad-mouth when she was 6 years old, but she’ll never forget that her mother wouldn’t stand for it. Each time her mother heard Agatha curse, the soap came out and went straight into Agatha’s mouth. Agatha learned quickly NEVER to curse in front of her mother.

Positive Punishment

Agatha did not have the bitter Taste of soap in her mouth → Agatha says “S*it” → Agatha gets the bitter taste of soap

What about this one??

Agatha’s mother hears her Precious daughter curse

Agatha’s mother inserts the soap

Agatha’s mother no longer hears her daughter curse

Another Example

- Joe LOVES his video games. His grandmother is babysitting him one day and notices that he shoves his brother and knocks him over every time his brother comes near him while he is playing with a video game. Grandma obviously doesn’t like this so she tells Joe if he shoves his brother again, the video game is GONE. Well, he does, and she takes it away. Joe no longer shoves his brother.

Negative Punishment

Joe has video game → Joe shoves brother → Joe loses access to video game

What about this one?

Joe's brother is not tasting The carpet → Joe's brother approaches Joe while he is playing video games → Joe's brother is tasting the carpet

In summary: Terminology and Definitions

- Antecedent:
  - Anything that occurs immediately before a behavior; specific stimulus condition under which the behavior occurs
- Behavior:
  - Neutral (not good or bad), anything that someone says or does
- Consequence:
  - What immediately follows behavior; will either increase or decrease behavior

- Reinforcement:
  - Any stimulus that is added or removed immediately after a behavior that will increase the likelihood of that behavior occurring in the future
- Punishment:
  - Any stimulus that is added or removed immediately after a behavior that will decrease the likelihood of that behavior occurring in the future
- Extinction:
  - Withholding reinforcement for a previously reinforced response resulting in a decrease in the behavior