Managing Problem Behavior

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Overview

- What is behavior?
- What is applied behavior analysis?
- Important definitions
- How it looks v. how it works
- Contingencies that change behavior, keep it going, or get it to stop
- Functions of behavior
- Review

What is Behavior?

- An interaction between a person and her or his environment
  - What I do?
  - What goes on around me?
  - Nature *and* nurture
  - Change one, and you can change the other

What is Behavior? (continued)

- Lawful
- Predictable
- Measurable
- Changeable
- A natural phenomenon that can be measured by methods used by other natural sciences

What is Behavior? (continued)

- Anything a person says, does, thinks, or feels
  - Location
  - A phenomenon appropriately measured, studied, taught, and treated through a natural science approach

What is Applied Behavior Analysis?

- Cooper, Heron, and Heward (1987) define Applied Behavior Analysis as…

"The ***science*** in which procedures derived from the principles of behavior are ***systematically applied*** to ***improve socially significant behavior*** to a meaningful degree and to demonstrate ***experimentally that the procedures employed*** were ***responsible*** for the ***improvement in behavior***."

Some Definitions

- Topography – how something looks; how something is arranged
- Function – how something works; how something works in relation to how other things work

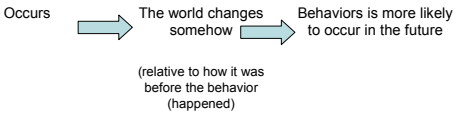
Some Definitions (continued)

- Antecedent – something that comes before something else
- Consequence – something that comes after something else
- Contingency – a relationship in which one thing depends on something else

Some Definitions (continued)

- Reinforce – strengthen
- Reinforcement –

Behavior Consequence Future



Reinforcement

- Always strengthens behavior
- Happens after behavior happens
- Results in increase in probability of that behavior in the future

Positive and Negative

- Mathematical, scientific sense
  - Positive = added
  - Negative = removed

Positive Reinforcement

- Positive = something is added
- Reinforcement = consequence operation
  - When is the something that's added added?
- Reinforcement = increases probability of a behavior

- So – positive reinforcement means:

Positive Reinforcement (continued)

Behavior	Consequence	Future effect on the behavior
do something →	Something is added to the environment that wasn't there before/added more to the environment →	More likely to do something again

Negative Reinforcement

- Negative = removed / subtracted
- Reinforcement = consequence
- When is the thing that's removed (in relation to when the behavior happens)?
- Reinforcement = increases probability of behavior
- So, negative reinforcement means:

Negative Reinforcement (continued)

Antecedent	**Behavior**	**Consequence**	**Future Effect on Behavior**
Something Going on	Do something	That something that was going on before the behavior happened is stopped or lessened	More likely to do what you did that stopped or lessened what was stopped or lessened

Positive or Negative Reinforcement?

- The sun is in my eyes. I move my hand between my face and the sun. The sun is no longer in my eyes. I do this because in the past this resulted in the sun not being in my eyes.
- You ask me to "touch blue." I hyperextend backwards and begin kicking the table and screaming. You stop asking me to touch blue (and pretty much leave me alone). I do this because in the past hyper extending backward while kicking the table and screaming resulted in you stopping asking me to do things.

Positive or Negative Reinforcement? (continued)

- I scratch the itch, because in the past scratching the itch made the itching stop.
- You ask me for something to drink by saying, "I want a drink," and not by whining, because in the past asking by saying "I want a drink" got a drink, while whining did not get a drink.

Positive or Negative Reinforcement? (continued)

- I enter a dark room. I flip the light switch upward, because doing so resulted in lights coming on in the past.
- You enter the room. The child says "I want to play," because saying "I want" and then what she wants when you enter the room resulted in her getting what she wanted before.

Another Definition!

- Extinction = disruption of an already existing reinforcement relationship, which results in the behavior (possibly) initially occurring more often, but then occurring less often (and possibly ceasing).

Extinction of Positively Reinforced Behavior

▪Past

Antecedent	Behavior	Consequence	Future Effect on Behavior
No drink	Child points, screams	Child gets drink	Likely to keep pointing and screaming

▪Present

Antecedent	Behavior	Consequence	Future Effect on Behavior
No drink	Child points, screams	Child doesn't get a drink	Initial increase in screaming (may get worse) followed by a decrease

Extinction of Negatively Reinforced Behavior

▪Past

Antecedent	Behavior	Consequence	Future Effect on Behavior
"Take a bite," food presented	Child screams, arches back	Meal over	Likely to scream when asked to eat that food

▪Present

Antecedent	Behavior	Consequence	Future Effect on Behavior
"Take a bite," food presented	Child screams, arches back	Spoonful of food remains near child's mouth	Screaming and arching likely to increase, then decrease

Is Anything Always a Positive Reinforcer?

- No!
  - Food when you're hungry v. food when you're full or nauseated
  - That song on the radio you haven't heard in years v. that song on the radio you hear a million times / day
  - Legos for a child who's into legos v. legos for a child who doesn't care about lego
  - Book for a child who loves reading v. book for child who doesn't read (and doesn't care to)

Is Anything Always a Negative Reinforcer?

- No!
  - The person you avoid (because under certain circumstances, he's given you work to do) can also sometimes be the person you approach (because under other circumstances, he's given you fun)
  - The song that gets you to change the radio station because you've heard it a million times already today, can also be the song you choose to download when you haven't heard it for a while
  - Dessert you push away when your stuffed can be dessert you jump on when you're hungry

Another Definition

- Punishment
  - Always weakens behavior
  - Happens after behavior happens
  - Results in decrease in probability of that behavior in the future

Positive Punishment

- Positive = something is added
- Punishment = consequence operation
  - When is the something that's added ?
- Punishment = decreases probability of a behavior
- So – positive punishment means:

Positive Punishment

Antecedent	Behavior	Consequence	Future Effect on Behavior
"Sit here"	Child sits	High effort work given to child	Less likely to sit there when instructed to do so

Negative Punishment

- Negative = removed / subtracted
- Punishment = consequence operation
  - When is the thing that's removed (in relation to when the behavior happens)?
- Punishment = decreases probability of behavior
- So, negative punishment means:

Negative Punishment (continued)

Antecedent	Behavior	Consequence	Future Effect on Behavior
Barney on TV, push puzzle toward child	Scream, arch back, kick table	Turn off TV (remove Barney)	Less likely to scream, arch back, kick table when Barney's on TV and puzzle approaches.

So, What Makes Something:

- A reinforcer?
- A punisher?
- A positive reinforcer?
- A negative reinforcer?
- A positive punisher?
- A negative punisher?

Another Definition!

- SD = Discriminative Stimulus
  - A stimulus that makes it more likely you're going to do a behavior, because when you did that behavior in the presence of that stimulus in the past, the behavior was reinforced
  - A kind of antecedent stimulus

SDs

- A ringing doorbell is an SD for
  - Why?
- The buzzer on the dryer is an SD for
  - Why?
- Your spouse is an SD for
  - Why?
- “What’s 2 + 2” is an SD for
  - Why?
- “Hi, What’s your name?” is an SD for
  - Why

SDs

- What sorts of things do we want to be SDs for our kids?

Prompts and SDs

- Prompt = an inappropriate SD used temporarily to help a “natural” SD to become an SD
  - “Natural SD” isn’t evoking the behavior that’s needed
  - Prompt given with the “natural SD” to evoke the behavior so the behavior can be reinforced
  - Prompt systematically removed so the “natural SD” becomes an actual SD and evokes the behavior without the prompt

Motivating Operations (Another Definition!)

- Motivating operation = a state of deprivation, satiation, or aversive stimulation that
  - Affects how strong something is as a reinforcer
    - Having just had a huge dinner makes a chocolate bar less appealing. Having just had the huge dinner is a _____.
    - Having gone for 6 hours without playing with my Thomas makes me want Thomas more. Having gone for 6 hours without playing with Thomas is a _____.

Motivating Operations (continued)

- Motivating operation = a state of deprivation, satiation, or aversive stimulation that
  - Makes it more or less likely we'll do the things that have gotten the reinforcers affected by the motivating operation in the past.
  - Having gone for 6 hours without playing with Thomas makes it more likely I'll reach for Thomas. Why?
  - Having just had a full lunch and a large glass of milk to drink makes it less likely I'll sign "juice." Why?
  - If you're not doing anything that bother's me, I'm less likely to say "stop." Why?

Topography and Function

- Topography = how it looks; how it's arranged
- Function = how it works; how it works relative to how other things work

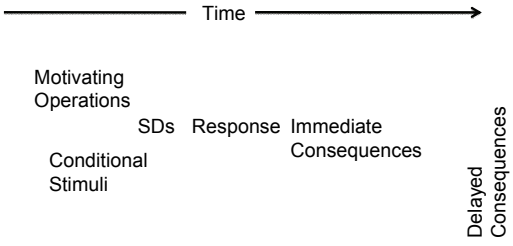
Topography of Stimuli

- How they look, sound, or how they're arranged
  - A hug
  - Taking the work away
  - A snack
  - Preferred toys
  - Outside
  - A drink

Function of Stimuli

- When might each of these be a positive reinforcer, negative reinforcer, positive punisher, or negative punisher?
  - A hug
  - Taking the work away
  - A snack
  - Preferred toys
  - Outside
  - A drink
- How might motivating operations affect how each of these works?

What do we have to work with?



Teaching and Changing Behavior

- Teaching *is* changing behavior!
- Behavior changes when the contingencies it is a part of change
- Contingencies are comprised of motivating operations, immediate antecedents, the movements we do, and the consequences of those movements
- We change behavior by changing what goes on around behavior

Two Term Contingency

Behavior
Happens

Consequence
Something added to
or removed from
Behaver's world

What are those things?
How do they affect behavior?

Options are to deliver, not deliver, permit to happen, not permit to happen, change schedule of deliver, change quality or quantity, or change what's delivered

Three Term Contingency

Antecedent	Behavior	Consequence
Happens, or is already going on	Happens	World changes somehow

When a behavior happens right after or in the presence of a stimulus, and is reinforced right away, the behavior is then more likely to happen in the presence of that stimulus in the future.

Antecedent becomes an SD because the behavior was reinforced in the presence of that antecedent in the past, and now the behavior is more likely to happen when that antecedent happens.

Two Term Contingency

Behavior Consequence

Determines how likely a behavior is to occur at some point in the future, but not when it will occur in the future.

Three Term Contingency

Antecedent: Behavior → Consequence

Consequence affects how likely the behavior is to occur at any time in the future.

Antecedent determines whether the behavior will happen right here and right now, based on extent to which the behavior was reinforced or punished in presence of that SD in the past.

So, if I Want to:

- teach my child to do what I do when I say "do what I do," what do I need to do when the child "does what I do?"
  - What should I do if the child doesn't "do what I do?"
- teach my child to sit when I say, "Sit?"
  - What should / shouldn't I do if the child doesn't sit?
- take a bite of peas when I say "take a bite" and present a bite of peas?
  - What do should / shouldn't I do if the child doesn't take the bite of peas?

Options with SDs

- Present them, and reinforce when you get the needed behavior immediately after
- Add prompts to the intended SD, and reinforce when you get the needed behavior immediately after the intended SD
  - Systematically eliminate the prompts through delayed prompting

Options with SDs (continued)

- Change the SD
  - Make simpler
  - Make similar to those encountered elsewhere
  - Train loosely

Options with SDs (continued)

- Get rid of SDs for problems when they're not needed
  - Sometimes permanently
  - Sometimes temporarily

Another Three Term Contingency

MO	Behavior	Consequence
Liquid Deprivation	"Give me a drink"	Gets a drink
Too much tickling	"Stop"	Tickling stops
Full, offered cookie as a reinforcer	"No, thanks"	Cookie goes away

A Four Term Contingency

MO + SD	Behavior	Consequence
Liquid deprivation + Mom near sink	"I want a drink"	Mom gives drink
Fatigue + "Let's walk in the store"	"I don't want to"	Gets carried

MOs affect:

- How strong reinforcers are.
- How weak reinforcers are.
- How strong SDs are.
- How weak SDs are.
- How likely we are to do the things that got those reinforcers in the past (if positive reinforcement)
- How likely we are to do the things that avoided those reinforcers in the past (if negative reinforcement).

MO Options

- Capture MOs
  - Notice when they occur naturally, and instruct behaviors that would be reinforced by the reinforcers that the MOs affect
    - Using wanting to go outdoors (right by the front door) to motivate child to put on shoes when you say, “Put on your shoes”
    - Using food reinforcers only right before meal time or snack time (and not right after) – why?
    - Other examples?

MO options

- Contrive MOs
  - Make them happen
    - Give the child a thirsty child a glass with no juice in it to increase probability child will say “juice”
    - Give child bowl of ice cream, but no spoon to increase probability he’ll say, “spoon”
    - Blocked access procedures, in general
    - Other examples?

Another Four Term Contingency

Conditional Stimulus	SD	Behavior	Consequence	Future Effect on Behavior
Ted Present	“Give me that one”	Whine	Demand Stops	More likely to whine
Melissa Present	“Give me that one”	Whine	Instruction continues	Less likely to whine

Why does child whine when Ted asks him to do something, but not when Melissa asks him to do something?

What is learned is called a CONDITIONAL DISCRIMINATION

Conditional Discrimination

Cond Stim	SD	Behavior	Consequence
Point to the quarter		pointing to the quarter	deliver reinforcer
A different Instruction Is given		does something other than point to quarter	

The quarter is an SD for pointing only when the instruction is given. The instruction is a conditional stimulus, and what has happened is called a conditional discrimination.

Conditional Discrimination (continued)

Cond Stim	SD	Behavior	Consequence
		Just about anything	No reinforcement
"Give me the blue shirt"		Gives Dad the blue shirt	Reinforcement

How did the blue shirt become an SD for choosing it and giving it to Dad?

Conditional Stimuli

- Add flexibility to the three term contingency
  - Turn three term contingency on and off
    - By virtue of the behavior being reinforced in the presence of the SD when the Conditional Stimulus is present, and
    - The behavior not being reinforced in the presence of the SD when the Conditional Stimulus isn't present
- The behavior we get is a *conditional discrimination*

Conditional Discriminations

- “indoor voice”
- Pet your dog but not strange dogs
- Eat the food on your plate, not the food on the floor
- Be nude in the bathroom, but not in the living room
- “Give me,” “point to,” and similar instructions
- Finding the right PECS card
- Others?

Conditional Stimulus Options

- Add, and only reinforce three term contingency in their presence
- Enhance, and reinforce three term contingency in their presence
- Add or enhance, and do not reinforce three term contingency in their presence
- Remove
- Add or enhance, prompt correct response to SD in their presence, reinforce correct response, systematically eliminate prompts

Functions of Behavior

- Why is my child doing this?
  - Look to the past
    - What has he gotten when he did this in the past?
      - Positive reinforcement
    - What has he gotten out of when he did this in the past?
      - Negative reinforcement
  - But we didn’t mean to reinforce that!
      - Doesn’t matter
      - Intention’s irrelevant
      - Lots of good people reinforce lots of bad behavior

Functions of Behavior (continued)

- You determine that the behavior you want to decrease has been followed by positive reinforcement
  - What to do?

Functions of Behavior (continued)

- You determine that the behavior you want to decrease has been followed by escape or avoidance (negative reinforcement) in the past.
  - What to do?

Functions of Behavior (continued)

- Why is my child doing this?
  - Look at what has happened right before he did what he did
    - Those things may be SDs for what he did.
    - What to do?

Functions of Behavior (continued)

- Why is my child doing this (e.g., not doing what he should do when I give an SD or instruction)?
  - What you want to be an SD (or your instruction) isn't an SD (or instruction) for the behavior you want, from the child's perspective.
  - What to do?

Functions of Behavior (continued)

- Why does my child behave this way when Dad's around, but a different way when I'm around?
  - Is there a problem conditional discrimination?
  - What to do?

Functions of Behavior (continued)

- Why does my child behave this way when Dad's around, but a different way when I'm around?
  - Has one of you become an MO for lots of reinforcers, and the other has not?
  - What to do?

Functions of Behavior (continued)

- Why don't my reinforcers work? My child doesn't seem to care about them!
  - You want them to be reinforcers, but they don't work as reinforcers.
  - What to do?

Functions of Behavior (continued)

- My child tantrums whenever I ask him to do anything.
  - Examine how tantrumming works for the child.
  - What to change?

Functions of Behavior (continued)

- My child tantrums when I take away the reinforcer.
  - MO is still strong – good.
  - Child has not yet been taught to relinquish reinforcers.
  - How to do this?

How to Reinforce

- When – immediately after you get the behavior you need
- In proportion to how hard your learner worked to do what she did
- High quality (for the learner) reinforcers
  - Pairing more “natural” reinforcers with more “aribtrary” reinforcers
- Variety of reinforcers
- Ensuring reinforcers only follow behaviors you want to reinforce
- Contriving deprivation (and MO) for reinforcers you’re going to use later on

Your Learner Has Choices

1. Engage in problem behavior
2. Do what you are asking him to do
3. Flop on the floor and do nothing

- Which do you want your learner to do?
- Why does your learner have these choices?
- How can you get your learner to choose #2?

Matching

- We respond where our reinforcers are
- When there are two or more sources of reinforcement (and there always are),
  - The stronger reinforcers determine what we do
  - The source that gives out more reinforcement is what we do
  - The source that requires less work to get the reinforcers is what we do

Make the Matching Law Work for You and Your Learner

- Look at your learner's learning situations
- Look at possible sources of reinforcement (for problem behavior) and the type and amount of reinforcement available from them
- Control as many of those sources as you can
- Ensure that the reinforcement gotten as part of learning is:
  - Easy to get – how?
  - Higher quality than the reinforcement for problem behavior – how?
  - Faster to get – how?
  - Linked to other sources of high quality reinforcers – how?

How Often to Reinforce

- Teaching something new
  - Reinforce every time the child gets it right
- Teaching your child to do it better, longer, faster, etc.
  - Reinforce only after better, longer, faster, etc., examples of the behavior
- Continuous reinforcement
  - Helpful in establishing new behavior
  - Keeps the behavior dependent on continuous reinforcement
  - Should reinforcement be disrupted, behavior may extinguish

Questions and Answers!