Decreasing Problematic Behavior Through Schedules of Reinforcement

Rachel Fouché, MA, LMFT
Therapeutic Learning Consultants, Inc.
Behavior Intervention

It is important to consider that for many individuals with ASD, problem behavior is a result of a lack of knowledge of “what to do” to most effectively access reinforcement.

What types of things do we attempt to access in our daily lives?
Behavior as communication

This presentation will place a heavy emphasis on reinforcement-based interventions.

Recognition of behavior as communication and then teaching the “what to do”.
Let's look at the why's of behavior

- Think about behaviors you typically engage in and WHY you engage in them.

- What do you “get out of” the behavior?

- Why do you repeat the behavior?

- What events might result in you not repeating the behavior?
About Challenging Behavior(s)

- Behaviors...
  - Serve a specific purpose or function for the individual
  - Have communicative intent
  - Are directly related to events in the environment that influence or reinforce such behaviors
  - A single challenging behavior can serve multiple functions

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Principles of ABA

1. Behavior is largely a product of its immediate environment.

2. Behavior is shaped/maintained by consequences.

3. Behavior is shaped better by positive (reinforcement) than negative (punitive) consequences.

4. Past behavior is the best predictor of future behavior.

5. Whether a behavior has been punished or reinforced is known only by the course of that behavior in the future.
Consequences can affect behavior in three ways:

- **Strengthen**—increase the frequency or likelihood that the behavior will occur
- **Weaken**—decrease the frequency or likelihood that the behavior will occur
- **Maintain**—do not change the frequency or likelihood that the behavior will occur
- **Neutral consequences** have no effect on the behavior
Reinforcement

- Basic and pervasive principle of behavior
- “Positive” and “negative” do not mean “good” and “bad”
- Positive refers to addition of (+) events or stimuli
- Negative refers to removal of (-) events or stimuli
- Both always result in an increase in the future frequency of a behavior (reinforcement)
- Negative reinforcement is not punishment
Reinforcement Defined

- *Positive Reinforcement*
  - Presentation of a stimulus, behavior occurs more often in the future

- *Negative Reinforcement*
  - Termination of certain stimuli, future probability of a behavior is increased
Reinforcement vs. Bribery

- **Reinforcement:**
  - Something good is given AFTER an appropriate behavior occurs
  - Reinforces a desired behavior
  - Proactive!
    - Child exhibits appropriate behavior → Receives reinforcer
  - Why should we use it? Leads to pattern of desired compliance

- **Bribery:**
  - Something (good) promised to stop an undesired (bad) behavior
  - Reinforces undesired behavior
  - Reactive!
    - Child is disruptive → Then promised reinforcer if behavior stops
  - Why do we use it? Works immediately!
Developing Reinforcement

- ANYTHING can be used as a reinforcer
  - Think outside the box (novel and unpredictable)
  - Add on what your child already likes
  - Don’t make assumptions about what will/won’t be a R+

- Think about what your child naturally chooses
- Avoid satiation by limiting access to reinforcers
- Always pair tangible reinforcement with social reinforcement
- Don’t take it personally!
Reinforcer Ideas and Resources

• Enjoys tactile items→
  – Sticky ball, sticky lizards, feathers, bubbles, playdoh, goo, slime, gloop, Floam, stickers, chalk, finger paints, stress ball, Koosh ball, bean bags, vibrating pen, loofah gloves, bean/rice boxes

• Likes auditory stimulation/sounds→
  – Rainstick, Sellotape, Pennies in a container, Kaleidoscope, party blower, magnetic balls, marbles, echo microphone, noise putty, tambourine

• Loves visual input→
  – Kaleidoscope, Viewfinder, light up spinner globe, balloons, light up pens, sunglasses, spinning top, streamers, flashlights, prisms

• Likes jumping→
  – trampoline, LARGE Pilates ball, big bean bag

• Websites to check out→
  – http://www.ozmofun.com/
  – http://www.especiallymine.com/
  – http://www.snazzarootoys.com/
  – http://www.discoverytoysinc.com/
Examples of Reinforcement

- You are standing outside when it begins to storm. You see a taxi without passengers and you hail the taxi, which stops to pick you up. Once inside the taxi you are no longer cold and wet. Your behavior of hailing a cab is maintained by....
This is great!

I'll have to wake up crying in the middle of the night more often.
Sources of Reinforcement for Problem Behavior

- Positive Reinforcement
  - Social (attention, access to tangible materials)
  - Automatic (sensory stimulation)
  - Example: Allison receives hug after cleaning up her toys. David gets a sticker for finishing his homework.

- Negative Reinforcement
  - Social (escape from task demands)
  - Automatic (pain attenuation)
  - Example: Mom stops nagging after child takes out the trash. Headache goes away after taking medication.
Now that we have discussed reinforcement . . . .

- It is time to discuss just HOW reinforcements can and should be delivered.

- In other words, there are other things to consider than just WHAT the reinforcer should be!
Think about this!

- If you were going to reinforce your puppy for going to the bathroom outside, how would you do it?
  - Would you give him a Liv-a-Snap every time? Some of the time?
  - Would you keep doing it the same way or would you change your method as you go along?
What is a schedule of reinforcement?

- A schedule of reinforcement is the response requirement that must be met in order to obtain reinforcement.
- In other words, it is what you have to do to get the goodies!
Maintaining Consequences

Problem behavior

Get object/activity/Sensation (SR+)

Avoid object/activity/Sensation (SR-)

Social/object or activity/physiological

Social/object or activity/physiological
Defining Antecedents & Consequences

- **Antecedent events** –
  - What happens immediately before the behavior

- **Consequent Events** –
  - What happens immediately following the behavior
  - May be programmed or naturally occurring (does not imply punishment)
Sample Problematic Antecedents

- Materials too complex / difficult
- Curriculum lacking in appropriate adaptations
- Student has lack of functional vocabulary to communicate
- Meaningless repetition beyond criterion (under stimulation)
- Nonfunctional activity
- Pacing too slow / too fast
- Physical environment: For example, number of students, noise
- Rate of physical prompting or verbalizations

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## Probable Functions of Specific Behavior Disorders

<table>
<thead>
<tr>
<th>Behavior Disorder</th>
<th>Positive Reinforcement</th>
<th>Negative Reinforcement</th>
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<tbody>
<tr>
<td></td>
<td>Social</td>
<td>Automatic</td>
</tr>
<tr>
<td>Aggression</td>
<td>+</td>
<td>Ø</td>
</tr>
<tr>
<td>Tantrums</td>
<td>+</td>
<td>Ø</td>
</tr>
<tr>
<td>Noncompliance</td>
<td>+</td>
<td>Ø</td>
</tr>
<tr>
<td>Property Destruction</td>
<td>+</td>
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<tr>
<td>&quot;Stereotypies&quot;</td>
<td>?</td>
<td>+</td>
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<tr>
<td>SIB</td>
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Iwata, 2009
One of the most powerful tools in a teacher’s intervention repertoire. It stands at the foundation for learning.
Reinforcement

- Types
- Limited Access
- Amount
- Behavioral Criterion
Seven Considerations in Using Reinforcement

- Immediacy
- Schedule
- Amount
- Pairing

- Proximity
- Labeling
- Expressiveness
Schedules of Reinforcement

How often person gets SR+ for a correct response.

- Continuous – Every correct response gets reinforced.
- Intermittent – Person's correct responses are reinforced periodically.

- When is continuous schedule best?
  - When teaching a new skill.

- When is an intermittent schedule best?
  - When person has reached criterion and teacher wants to reduce reinforce for maintaining response only.

- Example of continuous Reinforcement:
  - Each correct response is reinforced by teacher when the response is made.

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Schedules of Reinforcement

• *Ratio* - Schedule reinforcement according to the number of behaviors
  • Fixed
  • Variable (average)

• *Interval* – The first behavior occurring after the passage of a certain amount of time
  • Fixed
  • Variable (average)
Differential Reinforcement

Reinforcement is delivered contingent on the occurrence of a behavior other than the problem behavior or the behavior occurring at a reduced rate & Withholding reinforcement as much as possible for the problem behavior.

(Cooper, Heron, & Heward, 2007)
Non-contingent Reinforcement

- What happens when reinforcement occurs randomly, regardless of a person or animal’s behavior?
- Weird Stuff!
  - Like what?

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Superstitious Behavior

- Examples include:
  - Rituals of gamblers, baseball players, etc.
  - Elevator-button-pushing behavior

- Non-contingent reinforcement can sometimes be used for GOOD purposes (not just weird or useless behaviors!)
Non-contingent Reinforcement (NCR)

The idea is that if reinforcement is readily available then the student will not have to engage in problem behavior to access it.

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Good, useful examples

- Giving non-contingent attention to children
  - Some bad behaviors like tantrums are used to try to get attention from caregivers
  - These behaviors can be diminished by giving attention non-contingently

Children need *both* contingent AND non-contingent attention to grown up healthy and happy!
We can also think about how we use reinforcers.

- We can use a behavior we love (high probability behavior) to reinforce a behavior we don’t like to do very much (low probability behavior).

- This is sometimes called “Grandma’s Principle”
- Bobby, you can read those comic books once you have mowed the grass!
Delivering Reinforcement

Implementing effectively

Rule 1: Cannot tell whether something is a reinforcer until try it and observe effect on the behavior.

Rule 2: What is a reinforcer for one person may not be for another. Individualized approach for each child.

Rule 3: To be effective, a reinforcer must occur during or immediately after the behavior.
Delivering Reinforcement

Implementing effectively

Rule 4: Limited Access

Rule 5: Reinforcement must be contingent if it is to be effective: Grandma Principle: “First this, then that.”

Rule 6: When strengthening a new behavior, reinforce frequently.

Rule 7: Size of reinforcement is big enough to keep child motivated, but not too big for satiation (i.e. small pieces of edibles, pieces of a game, etc.)
Delivering Reinforcement

Primary/unconditioned reinforcers
(i.e., biological in nature: food, water, pleasure, etc.)

Secondary/Conditioned reinforcers
(i.e., praise, money, grades, token, etc.)

Token economies
Token Economies

- Develop an understanding of cause and effect for behavior.
- Measure occurrence of *appropriate* behavior.
- Allow for visual feedback on progress for child.
- Reminds adults to reinforce appropriate behavior.
- Provides motivation for child to see his/her progress.

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Token Economies

Using token economies effectively

- Select durable tokens
- Consider student’s interests in token boards
- Deliver tokens immediately
- Use powerful reinforcers
Goldilocks Rule of Reinforcement

- Reinforcement schedule needs to be “Just Right”.
- Opportunity to earn reinforcement needs to be available 2 times as often as challenging behavior.
- Does not mean will actually earn –reinforcement is contingent.
In Summary
Effective Interventions are...

- Multi-element approach
- Collaboratively designed
- Consistent
- Do-Able
- Based on setting the student up for success
- Clear & Concise: “If - then statements
- Based upon a 3:1 ratio of positive to negative comments.

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Parting shots

The success of any behavior change program is hinged on the accurate identification of reinforcers through a functional behavior assessment (FBA) & careful monitoring via continuous data collection and the graphing of that data.
Parting shots

How do I select a behavior intervention?

- Consider data from the FBA.
- Consider team input.
- Consider interventions that teach new skills.
- Consider the least intrusive intervention for the child and what will make them most successful.
- Consider the difficulty in conducting the intervention.

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Behavior change involves the manipulation of antecedents, consequences, or both.
"People don't shape the world, the world shapes them"

(BF Skinner)
Reference List & Suggested Readings


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Thank you!