Strategies to Decrease Behaviors: Part I
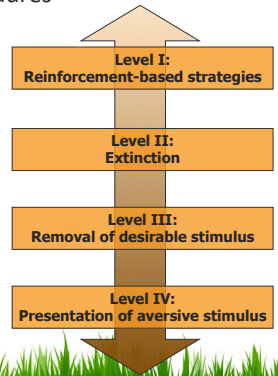
SPCD 519
Week 11

Guiding Principles for Selecting Procedures

- Don't abandon reinforcement
- Use the least intrusive intervention to get the job done
- Consider the function of the behavior
- Make data-based decisions

Level I:
Reinforcement-based strategies

Level II:
Extinction

Level III:
Removal of desirable stimulus

Level IV:
Presentation of aversive stimulus

Level 1	**Reinforcement-based Strategies**
	▪Differential reinforcement of <u>lower rates</u> of behavior (DRL) ▪Differential reinforcement of <u>other</u> behavior (DRO) ▪Differential reinforcement of <u>incompatible behavior</u> (DRI) ▪Differential reinforcement of <u>alternative behavior</u> (DRA)
Level II	Extinction (terminating reinforcement)
Level III	Removal of Desirable Stimuli
	▪Response-cost procedures ▪Time-out procedures
Level IV	Presentation of Aversive Stimuli
	▪Unconditioned aversive stimuli ▪Conditioned aversive stimuli ▪Overcorrection procedures

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Reinforcement-based Strategies to decrease behavior

Differential Reinforcement Procedures

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▪Differential reinforcement of <u>lower rates</u> of behavior (DRL)
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▪Differential reinforcement of <u>incompatible</u> <u>behavior</u> (DRI)
▪Differential reinforcement of <u>alternative</u> <u>behavior</u> (DRA)

Differential Reinforcement of Low Rates of Behavior (DRL)

- Reinforcement is delivered when *the number of responses in a specified period of time is less than, or equal to, a prescribed limit*
  - *Purpose to <u>reduce the rate</u> of a behavior*

- Two types of DRL
1. Full-session DRL:
  - Set a criterion for rate of behavior; student is reinforced if total occurrences are at or below criterion at the <u>end of the total time</u> (e.g., class period).

Differential Reinforcement of Low Rates of Behavior (DRL)

2. Interval DRL
  - Divide entire class period into intervals; give reinforcement if occurrences of target behavior <u>in each interval</u> are at or below preset criterion (i.e., reinforce meeting the criterion at the end of the interval instead of waiting until the end of the entire session)

DRL Procedures: Guidelines

- Comments:
  - Determining interval size is important
  - Won't <u>rapidly</u> change behavior
  - Shouldn't be used with intense or dangerous behaviors

- Fading the procedure:
  - Extending the interval
  - Lowering the expected criterion

Differential Reinforcement of Other Behavior (DRO)

AKA: Omission training or Zero Rates

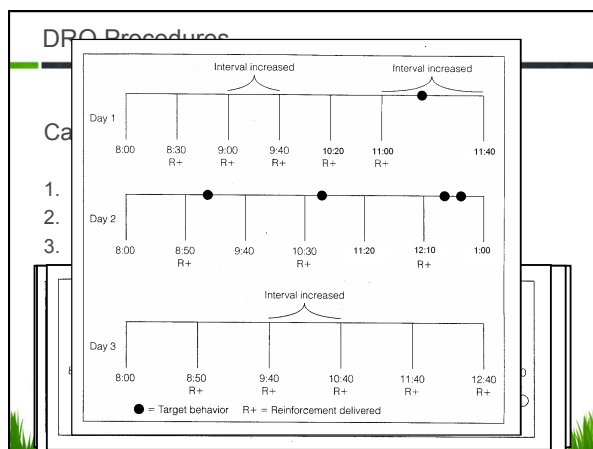*Reinforcer is delivered contingent on* **nonoccurrence** *of problem behavior for a* **specified interval**

Purpose of DRO is to eliminate a behavior.

Differential Reinforcement of Other Behavior (DRO)

AKA: Omission training or Zero Rates

• Two Types of DRO:
1. Full session (Whole-Interval) DRO
   – Reinforced for nonoccurrence during <u>entire period</u>
2. Momentary DRO
   – Reinforced for nonoccurrence at <u>end of intervals</u>

DRO Procedures

Ca

1.
2.
3.

Interval increased   Interval increased

Day 1

8:00   8:30   9:00   9:40   10:20   11:00   11:40
        R+   R+   R+   R+   R+

Day 2

8:00   8:50   9:40   10:30   11:20   12:10   1:00
        R+   R+   R+

Interval increased

Day 3

8:00   8:50   9:40   10:40   11:40   12:40
        R+   R+   R+   R+   R+

● = Target behavior   R+ = Reinforcement delivered

DRO Procedures: Guidelines

• Comments:
   • Requires careful observation to set the interval size (interreponse time) is important
   • Restart the interval to avoid behavioral outbursts
   • Don't reinforce other <u>inappropriate</u> behaviors
   • Don't create a behavioral vacuum

• Fading the procedure:
   • Lengthen the interval over time

DRO Procedures: Guidelines

- Important Consideration:
  - If treatment integrity is not or cannot be assured, then better to use a different intervention procedure: DRA

  - DRO is very 'sensitive' to errors in implementation. Dr. Vollmer (2013) states that if mistakes are made in implementing it even 5% of the time (make a mistake only 1 in 20 times) it will not necessarily be effective.
    - DRA generally works even with about 55% integrity

Differential Reinforcement of Alternative Behaviors (DRA)

- *Reinforce an appropriate, functionally equivalent behavior (to increase it) while minimizing reinforcement for the problem behavior (to decrease it).*
  - Ideally you place the problem behavior on extinction but this is not always possible.

- *Purpose is to substitute a behavior for the problem behavior*

Keep in mind . . .

- When is extinction **not** possible?
  - **Treatment integrity isn't or won't happen** – people doing the procedure are making mistakes
  - **Legal/ethical requirements** - e.g., we have to stop SIB or aggression to keep people from being hurt
  - **Automatic reinforcement** – can be **difficult** to withhold reinforcement when problem behavior is maintained by automatic reinforcement
  - Size/agility of individuals may produce escape even if we try to attempt escape extinction

                                                          (Dr. T. Vollmer, 2013)

Using DRA effectively

Factors	Prob Behavior	Alternative Behavior
Rate of reinforcement		Should "work" (i.e., result in R+) more frequently (CRF)
Quality of R+		Quality of R+ should be greater
Magnitude of R+		Amount of R+ should be greater
Delay of R+		R+ should take place immediately after behavior
Response effort to get R+		Should have relatively low effort requirement
Punishment		Should not have any punishment associated with it

Differential Reinforcement of Incompatible Behavior (DRI)

- A variation of DRA

- *Reinforce behavior that is physically (topographically) **incompatible** with the problem (target) behavior (cannot occur at the same time as the problem behavior)*
  - *E.g., handmouthing: reinforce playing with a toy and ignore handmouthing*
  - *E.g., pencil tapping: reinforce writing answers and ignore pencil tapping*

Examples of behaviors that are incompatible/alternative (taken from Webber & Scheuermann, 1991)

Problem Behavior	Replacement Behavior
• Talking back	"OK"; "I understand."; "May I ask a question about that??
• Cursing	"Darn"; "Shoot"
• Tardiness	Being in seat when bell rings.

DRA and DRI Procedures: Guidelines

- Comments:
  - Incompatible behaviors don't necessarily serve the same function as the problem behavior
  - Alternate behavior should require equivalent or less effort
  - Alternate behavior should receive similar reinforcement (pay attention to the function of the problem behavior!)
- Options:
  - Inappropriate behavior is <u>ignored</u>, appropriate behavior is reinforced
  - Inappropriate behavior is <u>interrupted</u> and student is <u>redirected</u> to the appropriate behavior
- Fading the procedure:
  - Thin the schedule of reinforcement over time
  - Combine with skill instruction in appropriate behaviors

Noncontingent Reinforcement (NCR)

- *Provide reinforcement at preselected intervals; reinforcement is **not** contingent on performance of any particular behavior*
- Considerations
  - Creates a positive classroom environment
  - Should probably monitor and 'beef this up' when using a procedure such as DRA
  - Can have accidental reinforcement of problem behavior
  - Need to carefully think through use of this procedure

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2 Extinction

Terminating Reinforcement

Behavior Reduction Procedures

"Any procedures we find offensive for ourselves should **not** be considered for people with disabilities." (p. 75, Jackson & Panyan, 2002)

Mildly aversive	Moderately aversive	Highly aversive
Extinction	Overcorrection	Restraint
Response cost	Time out	Lemon juice

Extinction

<u>Extinction</u> is based on a behavioral principle:
> When a behavior that has been reinforced in the past is no longer being reinforced, the behavior will stop occurring.

Involves *withholding* the reinforcer that has been maintaining the target behavior *(not just any reinforcer – must be the reinforcer that is maintaining the behavior)*

Extinction

Will see a _gradual_ decrease in the behavior but

Likely will see extinction burst (Increase in rate, duration, or frequency of the behavior); may see aggression

Extinction burst can be a positive sign b/c it means you have successfully identified the reinforcer maintaining the problem behavior

Should not use extinction with dangerous behaviors

Extinction: Two more considerations

- Be aware that spontaneous recovery may occur (keep extinction procedures in place)

- Extinction doesn't have good generalizability
  – Use it across settings rather than expecting the effect to generalize on its own.

Research Article Critique

- Due: March 30
- Look at the Assignment Description/Grading Checklist in the syllabus (pp. 14-15)
- List of articles from which you can choose: Class website
- Use Turnitin to upload this assignment. Practice uploading early!

Coming up . . .

- Next Week (Week 12)
- Guest Speaker: Katie Stone
  – We'll discuss additional strategies for decreasing behaviors; begin talking about generalization.
  – Read Chapters 9 in the Alberto & Troutman text and the Pengra Chapter 6 (on e-reserves)

- Turn in Vocabulary Activity #8