Reinforcement Schedules: Why are they important?

SPCD 519
Class 7

Goals for Tonight’s Class

• Define four schedules of reinforcement and
  – Describe their effects on behavior
  – Explain where in the teaching/learning cycle they might best be used
• Explain factors to consider when fading reinforcement
• Learn ways to make reinforcement “visible” to students to enhance their ability to delay reinforcement

Schedules of Reinforcement

• Continuous (CRF) – reinforcement every time behavior occurs; used for increasing or stabilizing a behavior

• Intermittent – reinforcement delivered occasionally or intermittently after behavior occurs; used to maintain a behavior
<table>
<thead>
<tr>
<th>Schedule</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>Fixed Ratio (FR)</td>
<td>Reinforcer delivered after a certain # of responses; produces high rate of behavior with a pause after reinforcement</td>
</tr>
<tr>
<td>Variable Ratio (VR)</td>
<td>Reinforcer delivered after an average of x responses; produces a high, steady rate of behavior with no pause after reinforcement</td>
</tr>
<tr>
<td>Fixed Interval (FI)</td>
<td>Reinforcer delivered for the 1st response after a fixed interval of time; produces a low rate of behavior with an on-and-off pattern; response rate increases near end of interval</td>
</tr>
<tr>
<td>Variable Interval (VI)</td>
<td>Reinforcer delivered for the 1st response that occurs after a variable interval of time; produces a steady, low to moderate rate of behavior with no on-and-off pattern</td>
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Example of a Classroom Group Contingency Strategy using fixed ratio: *Anchor the Boat*  
Lohrmann & Talerico, 2004
Variable Ratio (VR) Reinforcer delivered after an average of x responses; produces a high, steady rate of behavior with no pause after reinforcement. NOTE: to get maximum benefit, must deliver reinforcement systematically.

Classroom Examples of VR (Cooper et al., 2007)

<table>
<thead>
<tr>
<th>1</th>
<th>20</th>
<th>13</th>
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<td>3</td>
<td>5</td>
<td>30</td>
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<td>7</td>
<td>11</td>
<td>6</td>
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Tic-Tac-Toe

Classroom Lottery: Another example of VR schedule

- Students write their name on a card/ticket after completing a task and put the card/ticket in a box. The more frequently they complete tasks, the more times they can put their name in the box. (Could also use with small groups)
- After a set interval of time (teacher sets the interval and varies it so that students don’t know exactly when reinforcement may occur), teacher pulls out a card and that student receives a reinforcer (can have multiple winners).
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![FI Diagram](image)

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![VI Diagram](image)

Some related terms:

- **Thinning** – gradually reducing the frequency of reinforcement provided after the target response to decrease dependence on the reinforcement
- **Ratio Strain** – occurs when we’ve thinned the reinforcement too quickly
Competing Contingencies
(Concurrent Reinforcement)

• People most often engage in behavior that results in
  – More frequent reinforcement
  – Greater magnitude of reinforcement
  – More immediate reinforcement
  – Less response effort

• Use managed contingencies that are more powerful than the natural contingencies supporting the competing behavior.
  – In other words, the new reinforcer or reinforcement schedule must be perceived to be “better” than the current one, or the individual will not change her behavior.

Making reinforcement obvious...
Final considerations when using reinforcement:

- Use most natural reinforcer available to get the job done
- Remember the difference between bribery and reinforcement
- Be aware of countercontrol
- Individualize reinforcement

Coming up...

- Next Week (3/15) is SPRING BREAK so no class.
- Week of 3/22
  - We will discuss using consequences to decrease unwanted behaviors.
  - Read Chapter 8 in Alberto & Troutman text
- Turn in: FAP Sub-Section 3
- Turn in Sm Grp #5 Case Study