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
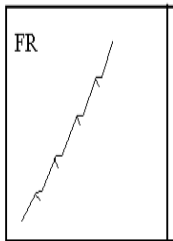 ability to delay reinforcement

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Schedules of Reinforcement

- Continuous (CRF) – reinforcement <u>every time</u> behavior occurs; used for increasing or stabilizing a behavior

- Intermittent – reinforcement delivered <u>occasionally or intermittently</u> after behavior occurs; used to maintain a behavior
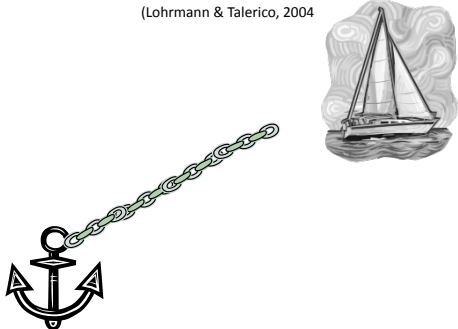
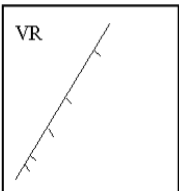| Schedule	Definition
Fixed Ratio (FR)	Reinforcer delivered after a certain # of responses; produces high rate of behavior with a pause after reinforcement
Variable Ratio (VR)	Reinforcer delivered after an average of x responses; produces a high, steady rate of behavior with no pause after reinforcement
Fixed Interval (FI)	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
Variable Interval (VI)	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

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FR

Fixed Ratio (FR)	Reinforcer delivered after a certain # of responses; produces high rate of behavior with a pause after reinforcement

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Example of a Classroom Group Contingency Strategy using fixed ratio: *Anchor the Boat*
(Lohrmann & Talerico, 2004

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	VR
Variable Ratio (VR)	Reinforcer delivered after an <u>average of x responses</u>; 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)
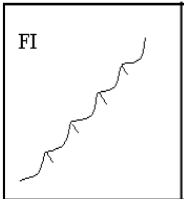
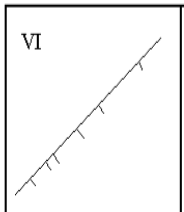| 1	20	13
3	5	30
7	11	6

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).

Fixed Interval (FI)	Reinforcer delivered for the 1st response after a <u>fixed interval of time</u>; produces a low rate of behavior with an on-and-off pattern; response rate increases near end of interval

FI

Variable Interval (VI)	Reinforcer delivered for the 1st response that occurs after a <u>variable interval of time</u>; produces a steady, low to moderate rate of behavior with no on-and-off pattern

VI

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
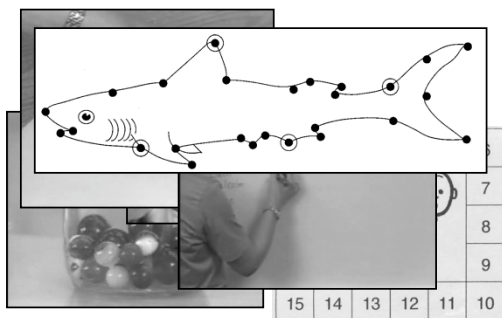
Competing Contingencies
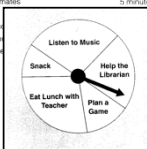(Concurrent Reinforcement)

- 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

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Making reinforcement obvious…

REINFORCEMENT MENU FOR ADOLESCENTS

Reinforcer	Time	Cost
Listening to music	10 minutes	20 tokens
Playing a game	10 minutes	20 tokens
Writing a note to a friend	————	25 tokens
Borrowing a book	48 hours	35 tokens
Watching a music video	15 minutes	30 tokens
Talking to a friend	10 minutes	15 tokens
Showing a hobby to classmates	5 minutes	10 tokens
Eating lunch with a friend		25 tokens
Delivering a note to a friend		30 tokens
Using gym equipment after		30 tokens
Choosing an activity for the		10 tokens
Running the film projector		5 tokens
Visiting another class		20 tokens
Running an errand		15 tokens
Helping a teacher		30 tokens
Sitting out an activity		35 tokens
Moving a desk		20 tokens
Telling a secret to a friend		30 tokens
Making a phone call		20 tokens
Eating a snack or drinking a soda		15 tokens
Getting free time	10 minutes	10 tokens
Playing a game	15 minutes	20 tokens
Being excused from a quiz	————	30 tokens
Visiting another class	30 minutes	30 tokens
Running an errand	————	15 tokens
Rearranging the room		20 tokens
Playing a computer game	20 minutes	25 tokens
Working on a hobby	15 minutes	20 tokens
Being excused from a homework assignment	————	30 tokens

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**