

Internalization of Stimulus Control During Skill Learning: When Can the Coach Leave?

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Introduction

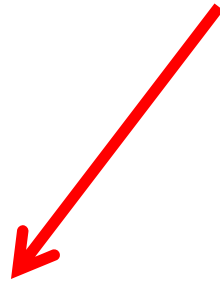
- Role of coaches
- Internalization of stimulus control-control by exteroceptive stimuli to control by interoceptive stimuli.
- Stimulus control in a laboratory setting
 - Roles of guiding cues vs. the effects of evaluative feedback

Procedures

- Lights served as guiding cues while learning to complete a Left-Right sequence of lever presses.
- Light was illuminated over lever, pressing the appropriate lever turned the light off and switched to the other lever in the sequence.

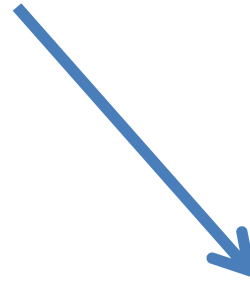
Lights Condition

Complete Left-Right Sequence
Lights over levers present in
succession as “guiding cues”
Correct sequence → Food
Incorrect → Timeout



No-Lights Condition

Complete Same Left-Right Sequence
No Lights were presented



Reversed-Lights Condition

Complete Same Left-Right Sequence
But, Lights presented in R-L order

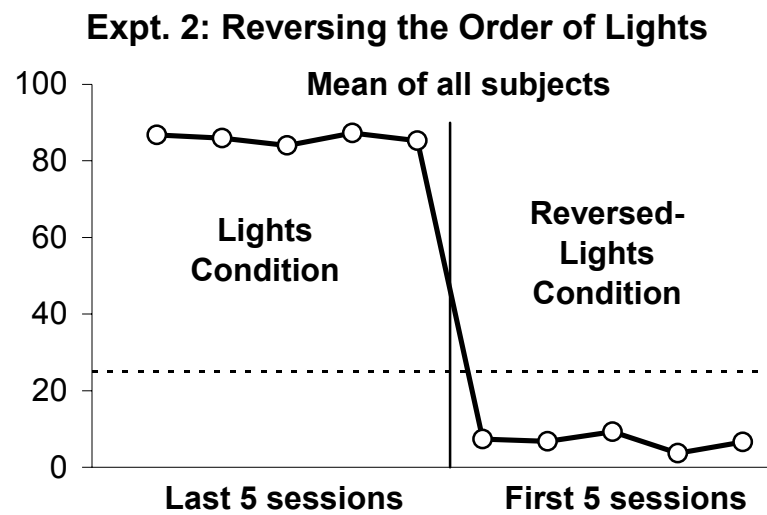
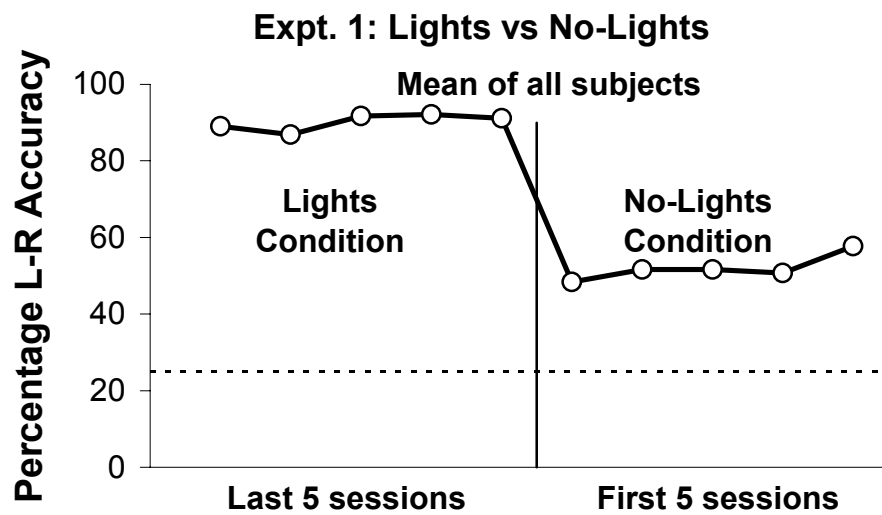
Research Questions

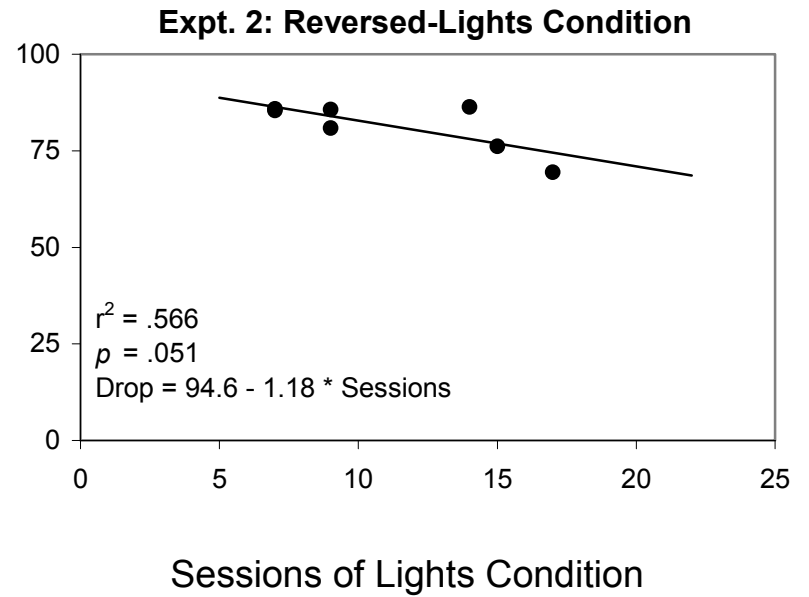
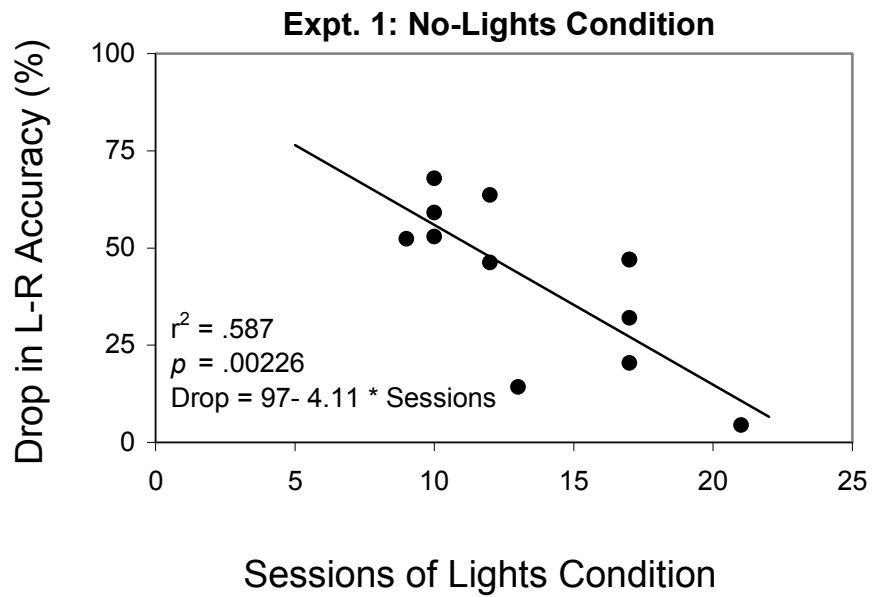
- How would accuracy be affected if the guiding cues were removed?
- Would accuracy fall to random chance levels, or would rats use internal cues to select levers?
- Does the amount of training influence the switch to internal cues?
- How would accuracy be affected if the guiding cues were reversed?

Goal

Create an animal model of internalization of stimulus control during skill learning.

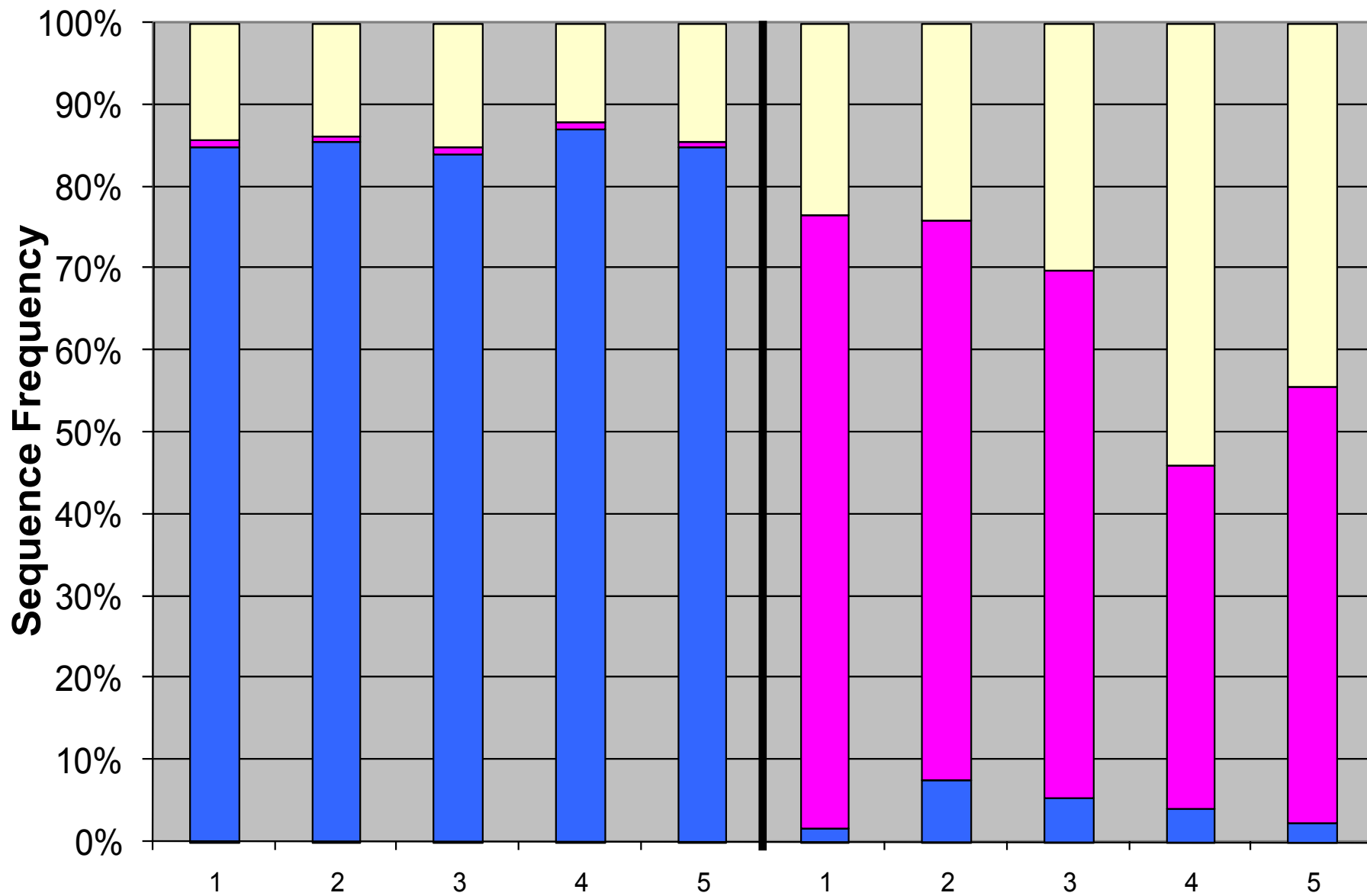






Experiment 2: Mean of all subjects

□ % Other ■ % R-L ■ % L-R



Discussion

- Decreases shown in Experiment 2 were not due to generalization decrement
- Lever pressing controlled by external, misleading cues
- S-R associations involving external stimuli overshadowed internal cues
- How do we learn to be autonomous?
 - governing principles exist

What can we do with the animal model?

- Practical Application
 - Coaching Styles: highly directive vs. hands-off
- Explain the design for next year's experiments in L & A

Research Opportunities

- Get involved Fall 2009
- Work with cute rats
(not albino nasties)
- Learn about behavior
- Gain research
experience
- Contact Dr. Reid!