20180123 COGS 101b Lecture Notes

Cabinet COGS101b Lecture Notes

Operant Conditioning

Reinforcement

- **Negative**: Taking Away
- **Positive**: Adding
- **Reinforcement**: Increase Behavior
- **Punishment**: Decrease Behavior

Discriminative Stimuli

A behavior is reinforced (or punished) in the presence of the **discriminative stimulus**, but is not reinforced (or punished) when the discriminative stimuli is not present.

Schedules of Reinforcement

How a behavior is reinforced or punished.

Different schedules on which behavior is rewarded or punished can have dramatically different effects on behavior

Continuous Reinforcement: Every instance of the behavior is rewarded

Intermittent Reinforcement: Only some instances of the behavior are rewarded.

Ratio: Number of responses needed
Interval: Amount of Time needed
Fixed: predictable
Variable: less predictable.

- Fixed Interval: Worst rate of response
- Fixed Ratio: Moderate rate of response, but periodic
- Variable Interval: High rate of response, but not highest
- Variable Ratio: Highest rate of response

Going beyond Behaviorism

- Strict Behavorialist Perspective:
    - We can only talk about stimulus-response relationships, not the mind.
    - Learning consists entirely of forming stimulus-response relationships, which are formed automaticaly
    - Tend to view causal learning as associative.
- Cognitive Perspective:
    - In order to understand behavior it is essential to talk about the mind
    - Peoplre are more complicated:
        - Reinforcement acts as a source of information about relations between actions and consequences(but does not compel behavior)
        - Our theories and expectation dominate observations, and in turn influence how we infer causation.

Learning-performance distinction

Not everything learned is immediately manifest in performance.

Although learning is often inferred from performance, the absence of learning may not be inferred from the absence of performance.

Expectancy hypothesis

See Estes 1969:

- Training Tasks
    - Choose between two cards that differed in reward value
    - Choose card and correct reward value
    - Unknown to participants, set up so they would never guess correct reward value
- Test
    - High value cards that had never been rewarded were chosen over lower value

Expectancy Hypothesis: The tendency for beahvior to occur in a given situation is a function of the individual's **expectations**, not necessarily which behaviors have been reinforced in the past.

Rule Learning

See Levine (1971)

- Task: Show different rules and then a series of cards that may or may not follow the rule
    - Participants learned more complex rules, but often failed to learn the simple rule
    - **Conclusion**: people seem to learn complex rules if they evaluate those hypotheses but not simpler rules if they don't evaluate those hypotheses.