Choice Behavior IV

Theories of Choice
Self-Control

Several alternatives have been proposed to explain choice behavior:

- Matching theory
- Melioration theory
- Optimization theory
- Momentary maximization theory
- These are reviewed in the next slides

Matching Theory

- Matching as originally formulated is a purely descriptive principle - it describes what individuals are observed to do, but does not explain why.
- Matching theory, however, attempts to explain why matching behavior occurs.
- It basically states that subjects match because they are built to do so.
- Matching theory explains exclusive choice for one or the other of two VR schedules, but does not explain why that choice is always for the smaller average ratio.
Melioration Theory

- “To meliorate” means “to make better.”
- Melioration theory proposes that subjects shift their responding toward one or the other alternative until both alternatives are equally attractive in terms of reinforcement per unit of effort or time.
- This strategy produces matching on concurrent VI VI VI VI schedules and exclusive responding on the more favorable schedule on concurrent VR VR VR VR.

Optimization Theory

- Optimization theory states that subjects will distribute their time and effort so as to optimize the overall reward over time.
- On concurrent VI VI VI VI schedules, it can be shown that matching is the optimal strategy. What is optimal may not involve matching on some other schedules, however.
- However, results of several experiments have failed to support optimization theory.

Momentary Maximization Theory

- Matching, melioration, and optimization theories are molar theories of behavior - they assert that choice depends on long-term, average consequences.
- Momentary maximization theory is a molecular theory of behavior - it asserts that choice depends on the moment-by-moment, immediate consequences of behavior.
- It states that, at any given moment, the subject will select whichever alternative has the highest perceived value at that moment.
- Support for momentary maximization theory has been mixed.
Self-Control As Choice Behavior

Many situations involve a conflict between short-term and long-term goals.

- Example: enjoying a high-calorie dessert (short-term goal) and sticking to a diet to lose weight (long-term goal).
- Self-control is said to occur when a person forgoes the short-term goal in favor of the long-term goal.
- Self-control is often explained by appeal to a person’s character. The behavioral approach looks to environmental conditions to explain instances of apparent self-control.

Self-Control – Ainslie (1974)

- Ainslie (1974) investigated self-control in pigeons using a single-key procedure:
  - A series of trials was presented, each lasting for 19 seconds. During a trial:
    - If no peck on the key occurred, the key was green, then dark, then red, and then grain was presented for 4 seconds.
    - If a peck occurred during red, grain was immediately presented for 2 seconds.
    - If a peck occurred during green, the later presentation of red was omitted and grain was presented for 4 seconds at the end of the trial.

Commitment and Self-Control

- Ainslie’s procedure offers the pigeon the chance to commit to receiving the larger, delayed reward by responding early in the trial, when the key is green. This cancels the option to peck later (red key) and receive the smaller, immediate reward.
- Some pigeons did learn to respond early and thus commit themselves to the larger, delayed reward. In that sense, they exhibited what might be described as self-control.
Commitment and Delay of Reward
- Ainslie and Rachlin have independently proposed that commitment depends on an effect of delay on the perceived value of the reward: the further away in time a given reward is, the smaller is its perceived value.
- Because of this effect if delay, a large but distant reward can be less valued than a small but close reward, leading to choice of the smaller, immediate reward.
- Yet, when both rewards are somewhat distant in time (but with the larger reward still more distant than the smaller), the larger can be perceived as having a higher value than the smaller, leading to the commitment choice (for the larger, more delayed reward).

Delay-of-Reward Curves
- When the smaller reward is near, it may appear to have a higher value than the larger, more delayed reward.
- But from a greater distance, the larger, more delayed reward may seem better.

Improving Self-Control
- Use a commitment procedure.
- Attach an immediate reinforcer to the choice of the delayed one.
- Attach an immediate punisher to the choice of the immediate reinforcer.
- Improve control by the delayed reinforcer via reminders.
Self-Control and Self-Reinforcement

- Self-reinforcement involves setting up and administering reinforcement contingent on performing the desired behavior and not giving in to temptation.
- The procedure may work, but probably not for the reason usually given.
- Problem: What keeps the person from just taking the reinforcer without completing the contingency? Something more complex than “self-reinforcement” must be going on.