Chapter 10 - Choice, Matching, and Self-Control

Choice

- Up until now, we've only really dealt with situations where there are no options for choosing different behaviors (or reinforcers).
- Can you think of a situation or behavior that does not involve choice?
  - Most do on some level!

Choice and Matching

- Concurrent schedule of reinforcement
  –
- The organism has
- This provides a better analog for real-life situations because reinforcement is often available for more than one response class or from more than one source or both

Choice and Matching

- Allows researchers to determine which type of schedules animals prefer.
- Examples: (assuming equal reinforcers)
  - VR 10 preferred over VR 100
    - On Ratio Schedules,
  - VI 20 preferred over VI 40
    - On Interval Schedules,
- Maximizing:

Choice and Matching

- When similar reinforcement is scheduled for each of the concurrent responses:
  - the response receiving the
  - the response requiring the
    - Example: pressing a light lever vs pressing a heavy lever
  - the response providing the

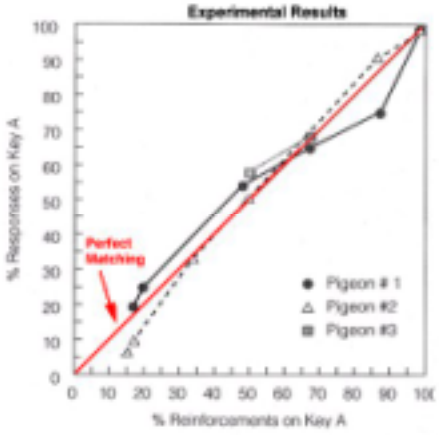
Matching Law

- The proportion of responses made to each schedule will be
- Example:

Reinforcers Available		Amount of Responses
– VI-60 schedule	→	
– VI-30 schedule	→	

The Matching Law

- Hernstein's 1961
- Trained on many concurrent VI schedules
  - eg. VI 135 sec vs VI 270sec
  - 27 vs 13 reinforcers per hour
- Results:



The Matching Law

- Can be represented as an equation:

$$\frac{R_A}{R_A+R_B} = \frac{S^R_A}{S^R_A + S^R_B}$$

- R_A =
- R_B =
- S^R_A =
- S^R_B =
- The ratios are found

Matching Law cont.

- Data from pigeon on a concurrent VI 30 VI 60

	Reinforcers	Responses
VI-30:	119	2800
VI-60:	58	1450

- Proportion of reinforcers

  119/177 =

- Proportion of responses

  2800/4250 =

Deviations from Matching

- Situations in which matching does not seem to properly describe behavior.

  1. Undermatching –

  – VR-30 vs VR-60
    - expect .67 responding on VR30 and .33 on VR-60
    - Undermatching:

  – Little cost for switching from one alternative to another.

Deviations from Matching

2. Overmatching –

– VR-30 vs VR-60
  - expect .67 responding on VR30 and .33 on VR-60
  - Overrmatching:

– Cost to switch to other task is very high

Deviations from Matching

3. Bias –

Example: if a rat just naturally prefers to press a blue lever instead of a green lever. The schedule of reinforcement will be altered by that preference.

Deviations from Matching