9-2 OPERANT CONDITIONING

Chapter 9: Learning

Operant Conditioning

- Actions are reinforced or punished
- Actions are therefore increased or decreased

Reinforcement

- Follows an event that **increases** the likelihood of that event occurring again.
- Positive reinforcement—after a desired behaviour is performed, the subject receives a reward.
- Negative reinforcement—after a desired behaviour is performed, an uncomfortable situation is **removed**.
- Primary reinforcers—satisfies a biological need
- Secondary reinforcers—acquired value through pairing with primary reinforcer (classical cond.)

Reinforcement: Aversive Control

- Use of unpleasant stimuli to control behaviour
- Negative reinforcement is an example
- Punishment
  - Unpleasant consequence after an undesirable behaviour
  - Reduces likelihood of a behaviour occurring.
- Escape conditioning—teaching an organism to remove an unpleasant stimulus
  - Dog whining to go pee
- Avoidance conditioing—behaviour to prevent an unpleasant act
  - Keeping your hands to yourself so your mum won't smack you

Schedules of Reinforcement

- Fixed-ratio schedule
    - Specific number of responses required before reinforcement
- Variable-ratio schedule
    - Random number of responses needed before reinforcement
- Fixed-interval schedule
    - Specific amount of time must elapse before behaviour will elicit reinforcement
- Variable-interval schedule
    - Changing amounts of time must elapse before behaviour will result in reinforcement

Shaping

- Process of reinforcement

- Many small behaviours are rewarded until the larger, goal behaviour is obtained.

- Behaviours slowly look more and more like desired behaviour

  - Example—teaching a dog to roll over—first teach it to lie down, then onto his side, then all the way over.

Chaining

- Learned reactions follow one another in sequence
- Each reaction produces the signal for the next behaviour
  - Example swimming—legs, breathing and arms
  - Weight transfer in snowboarding/skiing/skating
  - Over time, responses become natural and appear to be one behaviour rather than many

Examples of Operant Conditioning

- Interview with B.F. Skinner
  - http://www.youtube.com/watch?v=I_ctJqjlrHA
  - What criticism can you come up with for his ideas on "free will"?
- Sheldon conditions Penny
  - http://www.youtube.com/watch?v=euINCrDbbD4
  - Where is the mistake in concepts?
- Classical vs Operant
  - http://www.youtube.com/watch?v=99sWFCNoJTE&feature=related