Operant Conditioning

Operant Conditioning was developed by **B.F. Skinner** and is a type of learning in which organisms learn to *voluntarily* respond in a certain way depending on the consequences.

Operant Behavior is defined as the learned behavior that produces consequences. Other important "Skinnerian" concepts that are examined in this lesson include the following:

Law of Effect: this law states that behavior that is rewarded is more likely to occur again.
Skinner Box: the box Skinner used to research on animal behavior. This box has a bar or button that the animal can push to obtain rewards (food) and rate of pushing is recorded.

http://www.youtube.com/watch?v=cl7jr9EVcjI (Skinner Box)

http://www.youtube.com/watch?v=1J9KoKW5bKM (Kick Start Gym)

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Reinforcement...

Reinforcers: anything that increases the chances of the behavior happening again.

2 kinds of reinforcement:

1. **Positive Reinforcement** reward presented after a response (ex. praise, money, food)

2. Negative Reinforcement the removal of aversive events ex. freeing from jail, stopping someone crying, eating medicine that rids a cold, and drinking cold water to cool you down. *Taking away bad things*

Two types of reinforcers are:
1. **Primary Reinforcers -** Things that satisfy biological needs such as food, water, warmth

2. **Secondary Reinforcers -** *Learned* things that are strengthened by primary reinforcers. For example, money, a secondary reinforcer, allows you to buy food, a primary reinforcer.

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Reinforcement Schedules:

A) **Continuous Reinforcement -** Reinforcing the behavior every time it occurs. This method of learning is quick. But when reinforcement stops, extinction can happen very quickly.

B) **Partial Reinforcement (Intermittent)-** Reinforcing a behavior part of the time. Acquisition or learning is slow but it is more resistant to extinction.
Four schedules of Partial reinforcement are:

1. Fixed-Ratio - Reinforcement after **"fixed" number of responses.**
Ex. When people get paid for every 20 newspapers that they sell.

2. Variable-Ratio - Reinforcement after an **"unpredictable" number of responses**
Ex. When people gamble payback is unpredictable and thus this type of reinforcement produces high rates of responding.

3. Fixed-Interval - Reinforcement after a **"fixed" amount of time.**
Ex. Getting paid at the same time every week.

4. Variable-Interval - Reinforcement after an **"unpredictable" amount of time.**
Ex. A Psychology pop quiz is an attempt to reinforce the importance of frequent review and study. Once the pop quiz becomes predictable however, study reinforcements will diminish.
****NOTE**: A *ratio* schedule produces a *higher response rate* than reinforcement linked to an interval schedule. More specifically, a predictable *fixed-ratio* will yield a *higher response rate* than the unpredictable variable-ratio schedule.

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Punishment decreases the chances of a behavior reoccurring. Although punishment can successfully stop the undesired behavior, it also has **drawbacks:**

- Punished behaviors are not forgotten, they are suppressed until a more appropriate situation arises.
- Punishment increases aggressiveness and fear and fails to teach the person how to behave positively. (Only tells what not to do.)
- Learn that aggression is a way to deal with problems.
- Can create fear of person administering the punishment and/or situation where the punishment occurs.
- If punishments are unpredictable & inescapable, they can create feeling of helplessness and depression.

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Consequence Matrix

Stimulus Type	Supply Stimulus	Remove Stimulus
Appetitive Stimulus		
Aversive Stimulus		

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The following concepts are important to our understanding of the effect of cognitive processes and biological factors on conditioning.

Cognitive Map: this is a mental image of ones surroundings. I.e.. Mice develop cognitive maps that represent a maze that they just ran through.

Latent Learning: the demonstration of knowledge only when there is some incentive to do so. I.e.. Mice who explored a maze would only demonstrate that they knew the maze well when there was food to be found.

Overjustification Effect: this occurs when an organism (or person) is given a reward for something the organism already likes to do. This is unfavorable because research show that the organism will lose intrinsic interest and rely on rewards for they behavior. I.e.. Being paid to play your favorite sport will eventually cause you to be less interested in the sport for its own sake and more interested in your next raise.

Shaping: the act of gradually rewarding the organism as it approaches the desired behavior. For instance, if you want a bird to peck on a bar, you would feed it every time it got closer and closer to the bar but ignoring every other behavior it does. Thus, you are *shaping* the behavior with *successive approximation*s.

****NOTE**: Skinner's Operant Conditioning has many useful applications like increasing student performance, influencing productivity in jobs, and helping shape children behaviors.

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How can operant conditioning be use to influence behavior in schools , at work, and at home?

http://www.youtube.com/watch?v=qy_mIEnnlF4&safety_mode=true&persist_safety_mode=1

Big Bang Theory

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