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Advanced Placement Psychology

Chapter 8: Learning

(**http://www.ApPsychology.net**)

- One of our most enduring abilities that have ensured our survival is adaptivity, which in turn is crafted by **Learning** – an enduring change in behavior and knowledge due to experience.
- Organisms learn by forming associations between cause and effect (or two events). In other words, they are exhibiting **associative learning.** People associate the sight of lightning with thunder so next time they see lightning they anticipate thunder.
- **Behaviorism** , developed by Behaviorist John Watson, is the view that psychology should be and objective science

Classical Conditioning

- **Classical Conditioning -** developed by **Ivan Pavlov**, the type of learning in which stimuli is associated with an ***Involuntary Response.*** Pavlov was famous for his dog salvation experiment in which he accustomed dogs to salivate at the tone of ringing
- **Respondent Behavior –** An automatic response to a certain stimuli ("responding behaviors")
    - **Unconditioned Response (UCR) –** The normal response that is generated (unlearned) I.e. In Pavlov's experiment, the normal response a dog has when presented with food is salivation.
    - **Unconditioned Stimulus (UCS) –** The stimulus that triggers a normal response (UCR) I.e. The food is the UCS in Pavlov's experiment.
    - **Conditioned Response (CR) –** The response that is learned ("conditioned") I.e. Pavlov's dogs learned to salivate upon the presence of a ringing tone.
    - **Conditioned Stimulus (CS)** - A neutral stimulus that triggers a learned response. I.e. The ringing is a CS because the dogs learned to salivate at the presence of a ringing tone as opposed to food.
    - This kind of association is possible because Pavlov presented a ringing tone every time before food is given to the dog. Eventually, the dog learned to anticipate food at the sound of ringing, so they salivate.
    - There are 5 major processes with Classical Conditioning:
        1. **Acquisition –** The initial formation of the association between CS and CR. This works well when the CS is presented half a second before UCS is presented.
        2. **Extinction -** If the UCS is not presented after CS for a couple of times, the organism will lose receptivity to the CS. I.e. If after the ringing tone no food arrives, the dog stops to salivate at the presence of just a tone.
        3. **Spontaneous Recovery –** However, if the UCS is again presented after the CS, extinction ceases and the organism again begins to respond to the CS. I.e., the food is again presented after ringing – dog salivates.
        4. **Generalization –** The tendency for organisms to respond similarly to similar (generalization) stimuli as the CS. I.e. Pavlov's dog salivating to the sound of beeping that is similar to ringing. This is good because if you teach children to watch out for cars, they will also watch out for similar objects like trucks and vans.
        5. **Discrimination –** The ability to distinguish (discriminate) between different stimuli, so you don't react the same way to everything.

    - Two contradicting facts: Rats will learn to avoid food that made them ill even if the illness happens hours after eating it. Second, Rats will dislike the taste that made them ill but not the sight of the food.
    - Pavlov's Classical Conditioning has led to a variety of practical uses like helping drug addicts, increasing the immune system efficiency, and treating emotional disorders.

Operant Conditioning

- **Operant Conditioning** developed by **B.F. Skinner,** is a type of learning where organisms learn to ***Voluntarily*** respond a certain way depending on the consequences (like reward or punishment).

- **Operant Behavior –** The learned behavior that acts upon the situation and this behavior produces consequences. I.e.. If you learned that eating on the bed makes your parents mad at you, your eating behavior will change depending on what kind of responses you want the situation (parents yelling or not) to have.
- **Law of Effect –** Behavior that is rewarded is more likely to occur again.
- **Skinner Box –** The box Skinner used to research on animal behavior. The box has a bar/button that the animal can push to obtain rewards (food). The rate of pushing is recorded.
    - **Shaping** – Gradually rewarding the organism as it approaches the desired behavior. I.e.. 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 approximations*.
    - **Reinforcers –** anything that increases the chances of the behavior happening again
        - Positive Reinforcement – Rewards, like appraisal, money, food.
        - Negative Reinforcement – Removing of aversive events. I.e., freeing from jail, stopping someone crying, eating medicine that rids a cold, and drinking cold water to cool you down. (Taking away bad things)
        - **Primary Reinforcers –** Things that satisfies Inborn biological needs. I.e.. Food, water, warmth etc.
        - **Secondary Reinforcers –** Learned things that are strengthened by primary reinforcers. I.e.. Money, which can buy food – primary reinforcer; praises, high grades, smiles, which are all associated with basic needs of happiness.
        - **Continuous Reinforcement –** Reinforcing the behavior every time it occurs. This method of learning is quick. But when reinforcement stops, extinction can happen very quickly.
        - **Partial Reinforcement –** Reinforcing a behavior parts of the time. Acquisition/learning is slow but more resistant to extinction.
    - Four schedules of Partial reinforcement:
        1. **Fixed-Ratio –** Reinforcement after **"fixed" number of responses.** I.e.. Getting candy after washing the floor every 3 times.

        2. **Variable-Ratio –** Reinforcement after an **"unpredictable" number of responses** I.e.. Getting candy after washing the floor 2 times then getting candy after washing 5 times…then 3 times…

        3. **Fixed-Interval –** Reinforcement after a **"fixed" amount of time.** I.e.. Getting Candy 3 hours after every time the floor is washed.

        4. **Variable-Interval –** Reinforcement after an **"unpredictable" amount of time.** I.e.. Getting Candy 2 hours after the floor is washed then getting candy 5 hours after washing…then 3 hours…

    - **Punishment –** Opposite of reinforcement, 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, just suppressed until appropriate situations; punishment increases aggressiveness and attributes them to the punisher.
    - **Cognitive Map** – Mental images of ones surroundings. I.e.. Mice develop cognitive maps that represent a maze they just ran through.
    - **Latent Learning** – Demonstration of acquired knowledge only when it is needed. I.e.. Mice who explored a maze only demonstrate that they know the maze well by directly going to the food placed the previous time.
    - **Overjustification Effect** – Giving a reward for something the organism already likes to do. This is unfavorable because the organism will lose the intrinsic interest and rely on rewards for they behavior. I.e.. Being paid to put together your favorite puzzle.
    - Skinner's Operant Conditioning has many useful applications like increasing student performance, influencing productivity in jobs, and helping shape children behaviors.

Learning by Observation

- **Observational learning –** Researched by **Albert Bandura** in the 1960's, this is a type of learning that is accomplished by **Modeling** - watching specific behaviors of others and imitating them.
- **Prosocial Behavior –** Actions that are constructive, beneficial, and nonviolent. These behaviors can prompt similar ones in others. Thus, "Pro-social".

- Experiments show that children do exactly what their models (parents) do. Hypocritical parents say one thing and do another; their children will say what they say and do what they do.

Bibliography

Myers, David G., Psychology Fifth Edition. Worth Publishers, Inc. New York, NY ©1998