

Chapter 6: Learning

Truth or Fiction?

- A single nauseating meal can give rise to a taste aversion that lasts for years.
- Psychologists helped a young boy overcome his fear of rabbits by having him eat cookies while a rabbit was brought closer and closer.

Truth or Fiction?

- During World War II, a psychologist created a missile that would use pigeons to guide the missile to its target.
- Slot machine players pop coins into the machines most rapidly when they have no idea when they might win.

Truth or Fiction?

- You can train a rat to climb a ramp, cross a bridge, climb a ladder, pedal a toy car, and do several other tasks – all in proper sequence.

- Scientists have implanted electrodes in the brains of rats and guided them through mazes by means of remote control.

Truth or Fiction?

- You have to make mistakes to learn.

- Despite all the media hoopla, no scientific connection has been established between violence in the media and real-life aggression.

Preview of Chapter Six

- Classical Conditioning
- Operant Conditioning
- Cognitive Factors in Learning

What is Learning?

- A relatively permanent change in behavior that arises from practice or experience

Classical Conditioning

Classical Conditioning

- Simple form of associative learning that enables organisms to anticipate events
 - Previously neutral stimulus (CS) comes to elicit the response evoked by a second stimulus (UCS) as a result of repeatedly being paired with the second stimulus

Contribution of Ivan Pavlov

- While studying salivation in dogs, Pavlov “happened” upon the principles of conditioning
- Reflexes (unlearned) can be learned (or conditioned) through association

Classical Conditioning



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Why Did Pavlov’s Dogs Salivate?

- Behaviorist perspective
 - Dog learned to salivate in response to the tone *because* the tone had been paired with the meat powder
- Cognitive perspective
 - The dog salivated in response to the tone *because* the tone became mentally connected with the meat

Taste Aversion

- Example of classical conditioning
- Adaptive; motivate organism to avoid harmful foods
- Only one association may be required; time between unconditioned and conditioned stimulus can occur hours apart

Extinction and Spontaneous Recovery

- Extinction
 - CS no longer followed by an UCS, no longer elicits CR
- Spontaneous Recovery
 - CS once again elicits CR
 - A function of time that has elapsed since extinction occurred

Generalization and Discrimination

- Generalization
 - Tendency for CR to be evoked by stimuli similar to the stimulus to which the response was conditioned
- Discrimination
 - CR evoked by limited range of stimuli due to pairing only the limited stimulus with the US

Features and Phases of Classical Conditioning



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Higher-Order Conditioning

- Previously neutral stimulus becomes a conditioned stimulus after being repeatedly paired with a stimulus that has already become a conditioned stimulus
 - Condition dog to salivate to tone
 - Repeatedly pair light with tone
 - Light evokes salivation

Video Connections: “Little Albert”

- How would you go about reversing Little Albert's conditioning?
- Explain how classical conditioning and stimulus generalization might be related to the development of phobias

Little Albert



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Operant Conditioning

Operant Conditioning

- Learn to do, or not do, things based on the consequences of the behavior
- Behavior operates on, or manipulates, the environment
- Voluntary responses are acquired or conditioned

B.F. Skinner's Contributions

- Skinner focused on measurable behaviors
 - Behavior modification and programmed learning
- Skinner box
 - Experimental conditions can be maintained

Rat in a Skinner Box

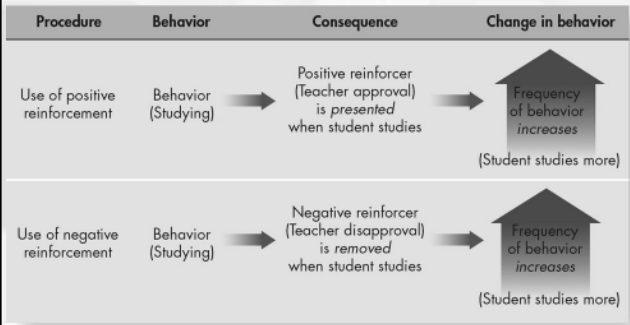


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Types of Reinforcements

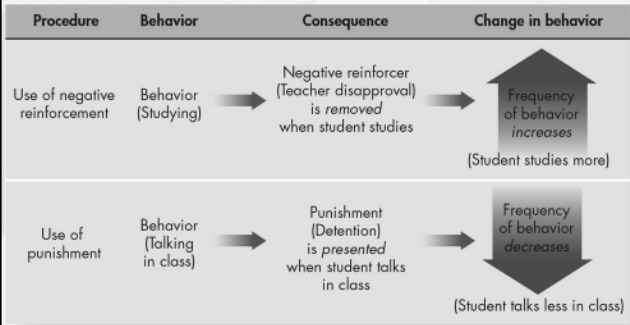
- Reinforcer is any stimulus that increases the probability that responses preceding it will be repeated
- Positive reinforcer
 - Increase probability behavior will occur when it is added
- Negative reinforcer
 - Increase probability behavior will occur when it is removed

Positive Versus Negative Reinforcers



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Negative Reinforcers Versus Punishment



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Immediate versus Delayed Reinforcers

- Immediate reinforcers are more effective than delayed
 - Short-term consequences are more of incentive than long-term

Primary and Secondary Reinforcers

- Primary reinforcer effective because of biological makeup of organism
 - Food, water, warmth, pain (negative reinforcer)
- Secondary reinforcer acquire value through association with established reinforcers
 - Conditioned reinforcers
 - Money – learn it may be exchanged for primary reinforcer

Extinction and Spontaneous Recovery in Operant Conditioning

- Extinction
 - Learned responses are extinguished after repeated performance without reinforcement
- Spontaneous Recovery
 - Occurs as a function of time

Reinforcers versus Rewards and Punishment

- Reinforcers are known by their effect (increase response)
- Rewards are pleasant events that affect behavior
- Punishment are aversive events that decrease the frequency of the behavior they follow

Discriminative Stimuli

- Stimulus that indicates whether behavior will be reinforced
 - Behavior not reinforced will be extinguished

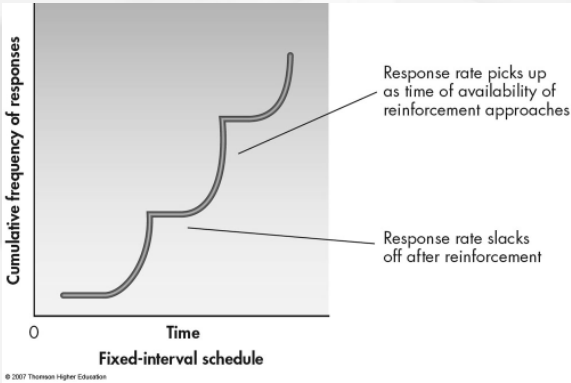
Schedules of Reinforcement

- Continuous reinforcement
 - Most rapid acquisition
 - Most easily extinguished
- Partial reinforcement

Interval Schedules of Reinforcement

- Fixed-interval schedule
 - Fixed amount of time
 - Response rate falls off after each reinforcement and then picks up as reinforcer approaches
- Variable-interval schedule
 - Unpredictable time elapses
 - Steadier but lower response rate (than fixed-interval)

The Fixed-Interval Scallop



Ratio Schedules of Reinforcement

- Fixed-ratio schedule
 - Fixed number of correct responses
 - High response rate; higher immediately after reinforcement
- Variable-ratio schedule
 - Unpredictable number of correct responses
 - High response rate

Shaping

- Reinforce progressive steps toward the behavioral goal
 - As training proceeds, reinforce successive approximations of the goal

Skinner Shaping a Pigeon



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Applications of Operant Conditioning

- Biofeedback Training
- Behavior Modification
- Programmed Learning

Cognitive Factors in Learning

Latent Learning and Cognitive Maps

- Edward Tolman
- Rats formed a cognitive map
- Learning was hidden, or latent, until food motivated them

Contingency Theory

- Learning only occurs when CS provides *information* about the UCS
 - Rescorla – pairing tone (CS) with shock (US)

Observational Learning

- Acquire skills by observing others (Bandura)
- Can occur without overt responses
 - Paying attention to the behavior is sufficient
 - Learning may be latent
- Model – person who engages in response that is imitated
 - Vicarious reinforcement

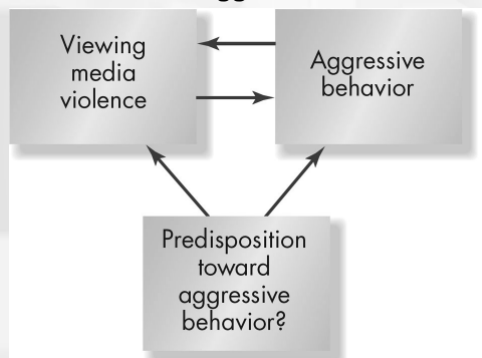
Violence in the Media and Aggression

- Bandura and colleagues classic study of media violence – Bobo and preschool children
 - Children who saw aggressive model showed significantly more aggressive behavior toward the doll themselves

Consensus on the Effects of Violence in the Media

- Depictions of violence contribute to aggression
 - Observational learning
 - Disinhibition
 - Increased arousal
 - Priming of aggressive thoughts and memories
 - Habituation
- Circular relationship between exposure to media violence and aggressive behavior

What Are the Connections Between Media Violence and Aggressive Behavior?



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