Chapter 6: Learning

Lecture Overview

- Classical Conditioning
- Operant Conditioning
- Cognitive-Social Learning

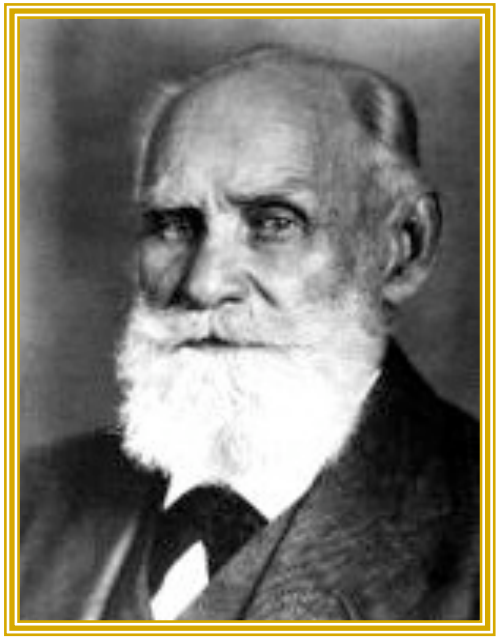
Introductory Definitions

- Learning (relatively permanent change in behavior or mental processes resulting from practice or experience)

- Conditioning (process of learning associations between environmental stimuli and behavioral responses)

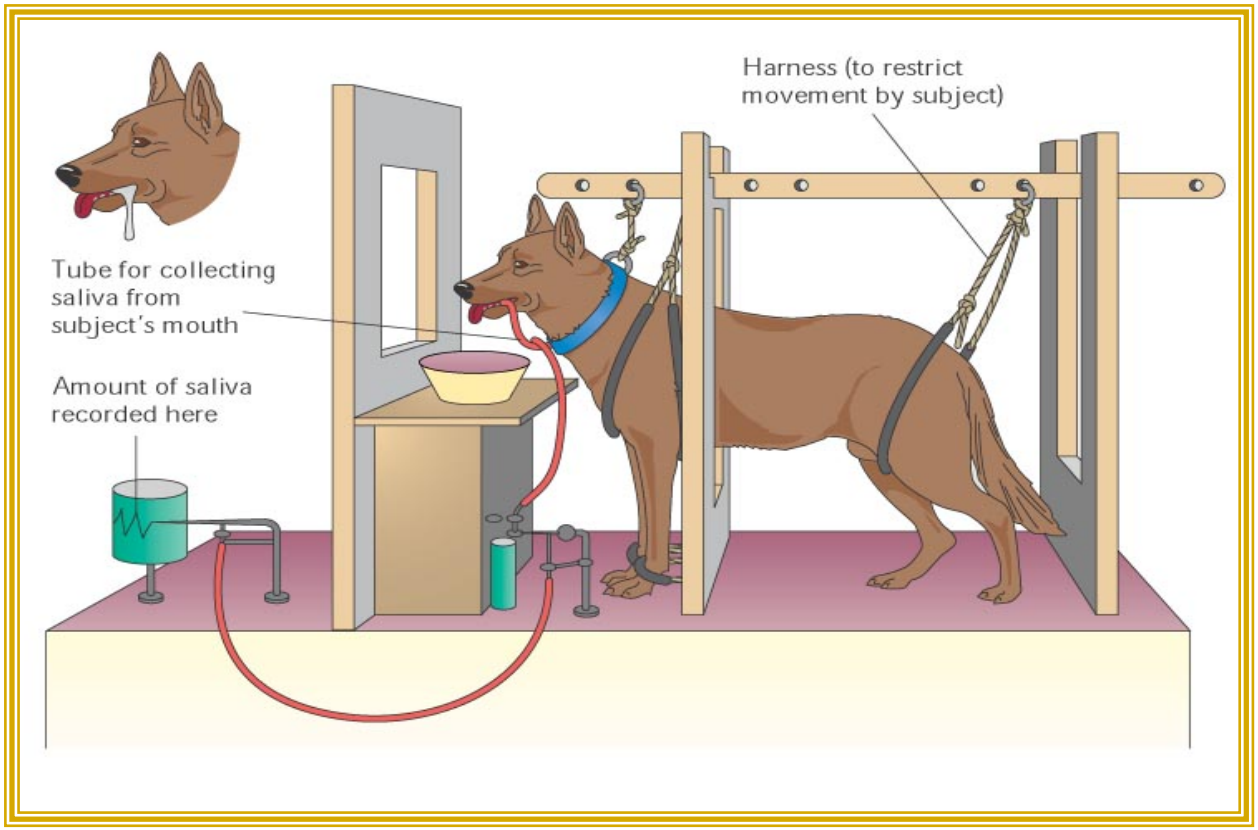
Classical Conditioning

- Pavlov's Contribution



- Classical Conditioning: learning that occurs when a neutral stimulus (NS) becomes paired (associated) with an unconditioned stimulus (UCS) to elicit a conditioned response (CR)

Pavlov's Original Experiment



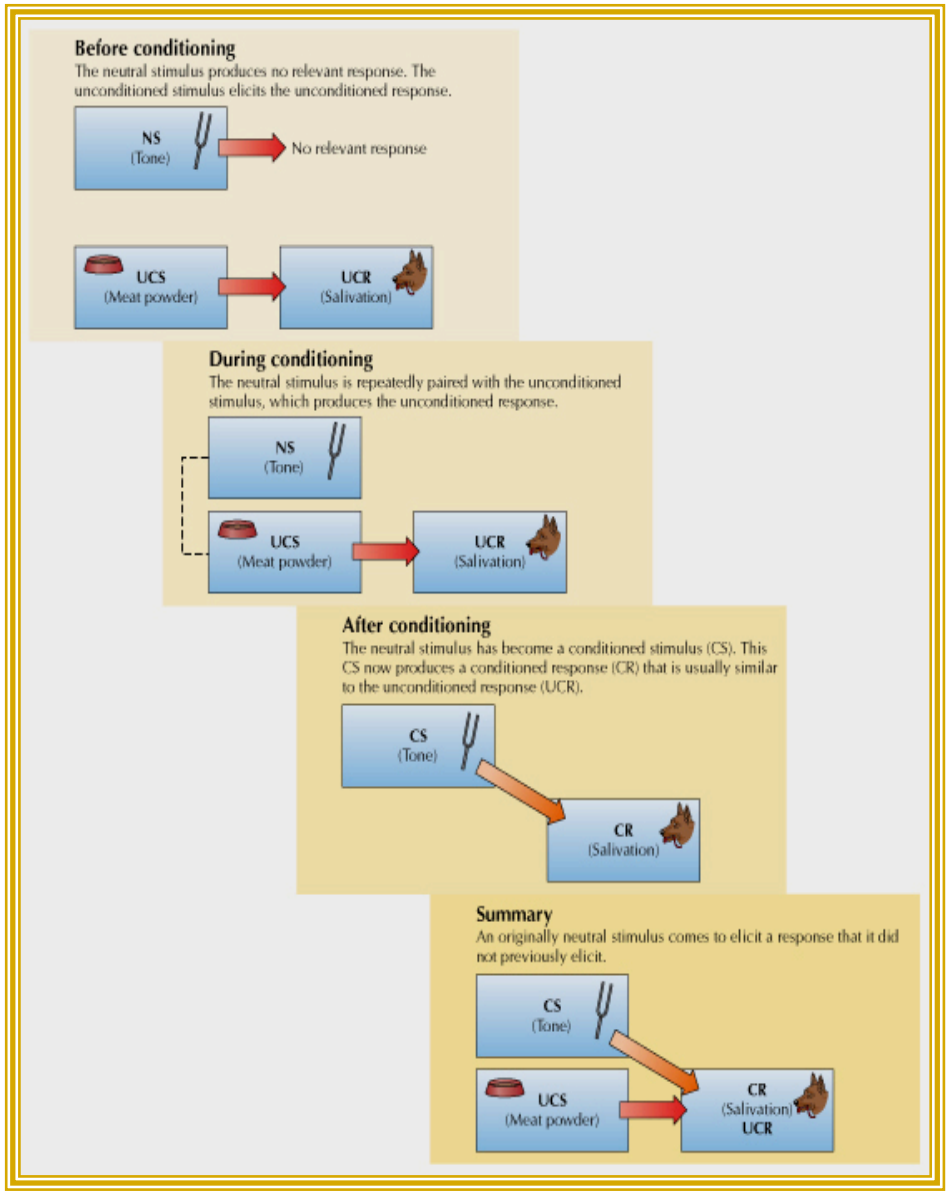
Classical Conditioning--Key Terms

- Neutral Stimulus (NS): stimulus that, before conditioning, doesn't naturally bring about the response of interest
- Unconditioned Stimulus (UCS): stimulus that elicits an UCR occurring without previous conditioning
- Unconditioned Response (UCR): unlearned reaction to an UCS occurring without prior conditioning

Classical Conditioning--Key Terms (Continued)

- Conditioned Stimulus (CS): previously NS that, through repeated pairings with an UCS, now causes a CR

- Conditioned Response (CR): learned reaction to a CS occurring because of previous repeated pairings with an UCS

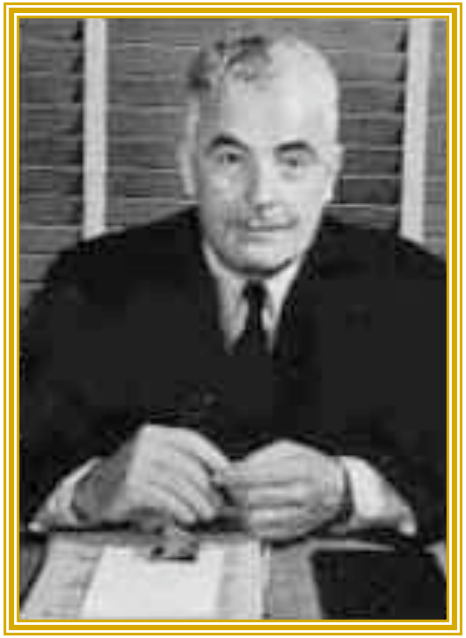

Before conditioning
The neutral stimulus produces no relevant response. The unconditioned stimulus elicits the unconditioned response.
NS
(Tone)
No relevant response
UCS
(Meat powder)
UCR
(Salivation)
During conditioning
The neutral stimulus is repeatedly paired with the unconditioned stimulus, which produces the unconditioned response.
NS
(Tone)
UCS
(Meat powder)
UCR
(Salivation)
After conditioning
The neutral stimulus has become a conditioned stimulus (CS). This CS now produces a conditioned response (CR) that is usually similar to the unconditioned response (UCR).
CS
(Tone)
CR
(Salivation)
Summary
An originally neutral stimulus comes to elicit a response that it did not previously elicit.
CS
(Tone)
UCS
(Meat powder)
CR
(Salivation)
UCR

Classical Conditioning (Continued)

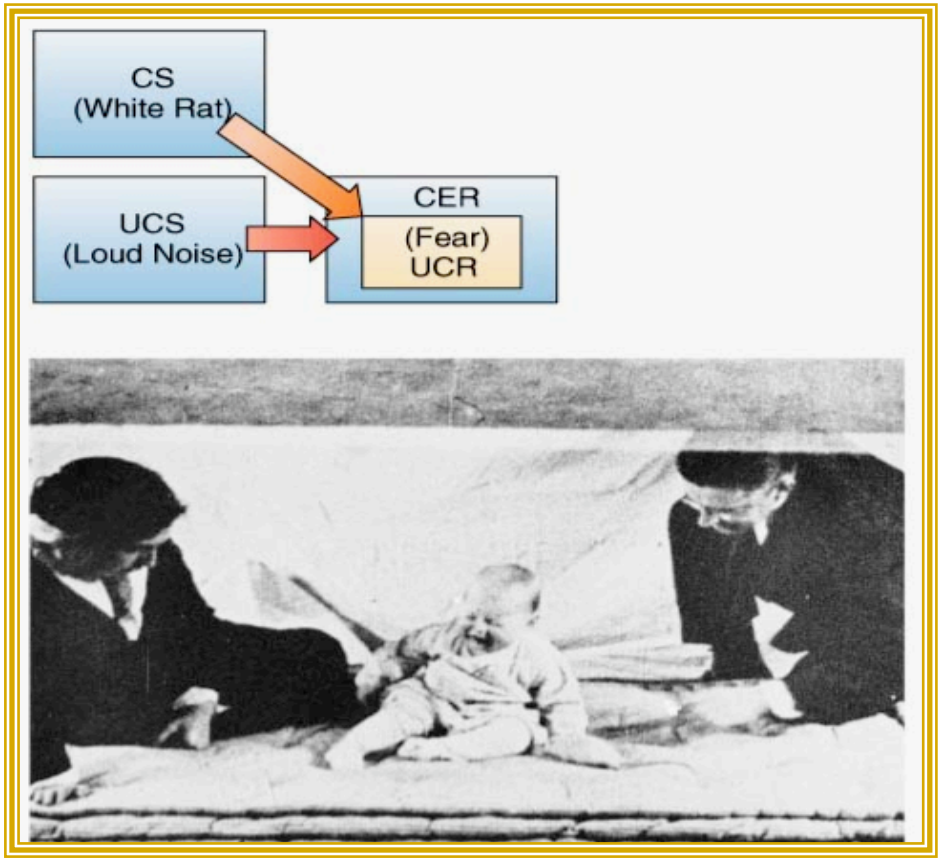
- Conditioned Emotional Response (CER):

  Watson demonstrated how emotions can be classically conditioned to a previously neutral stimulus (NS).

John B. Watson

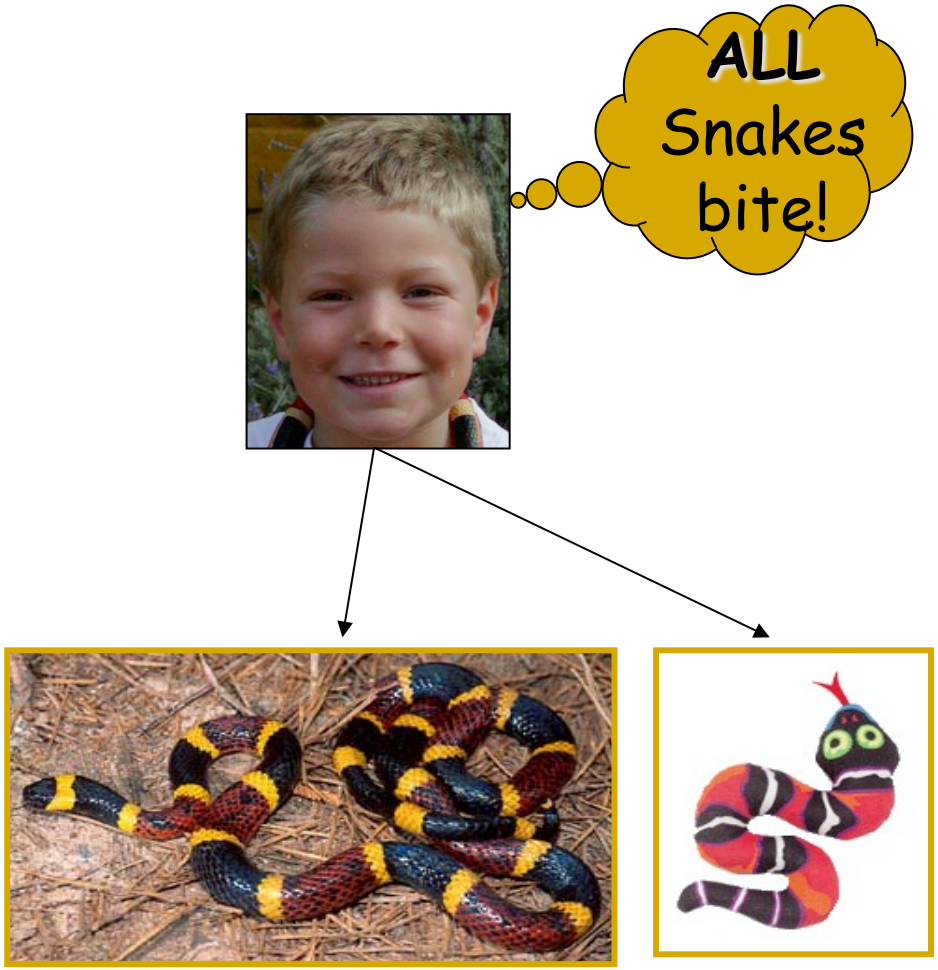


Watson and Rayner Created a Fear of Rats (a CER) in Little Albert



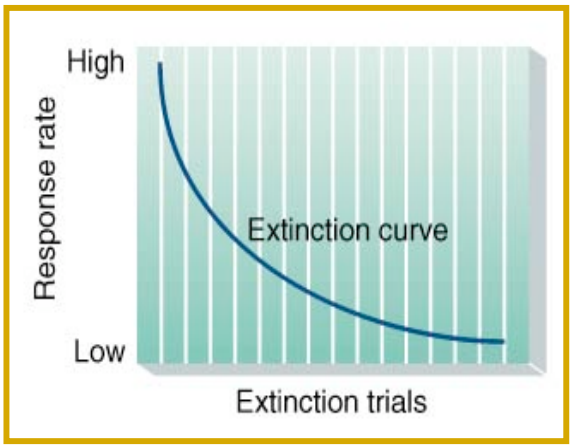
Classical Conditioning's Basic Principles

- Stimulus Generalization: learned response to stimuli that are *similar* to the original conditioned stimuli (CS)

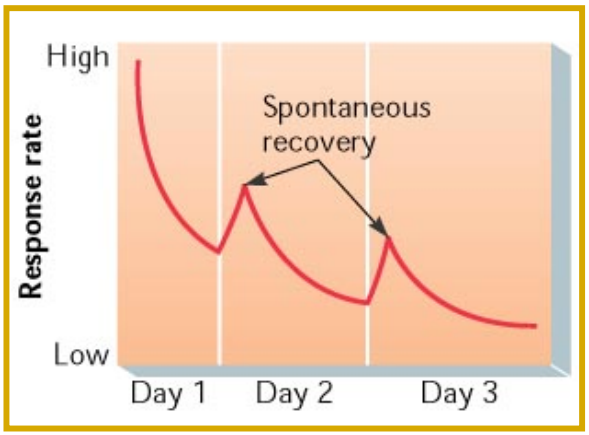


Classical Conditioning's Basic Principles (Continued)

- Stimulus Discrimination: learned response to a *specific* stimulus, but not to other, similar stimuli



- Extinction: gradual weakening or suppression of a previously conditioned response (CR)



- Spontaneous Recovery: reappearance of a previously extinguished conditioned response (CR)

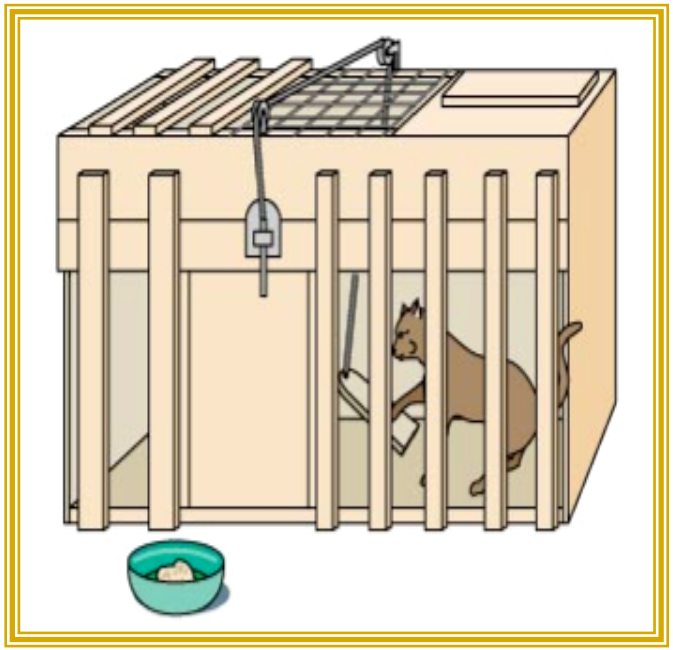
Operant Conditioning

- Operant Conditioning:

  learning in which voluntary responses are controlled by their consequences

Operant Conditioning (Continued)

- Thorndike's Contribution

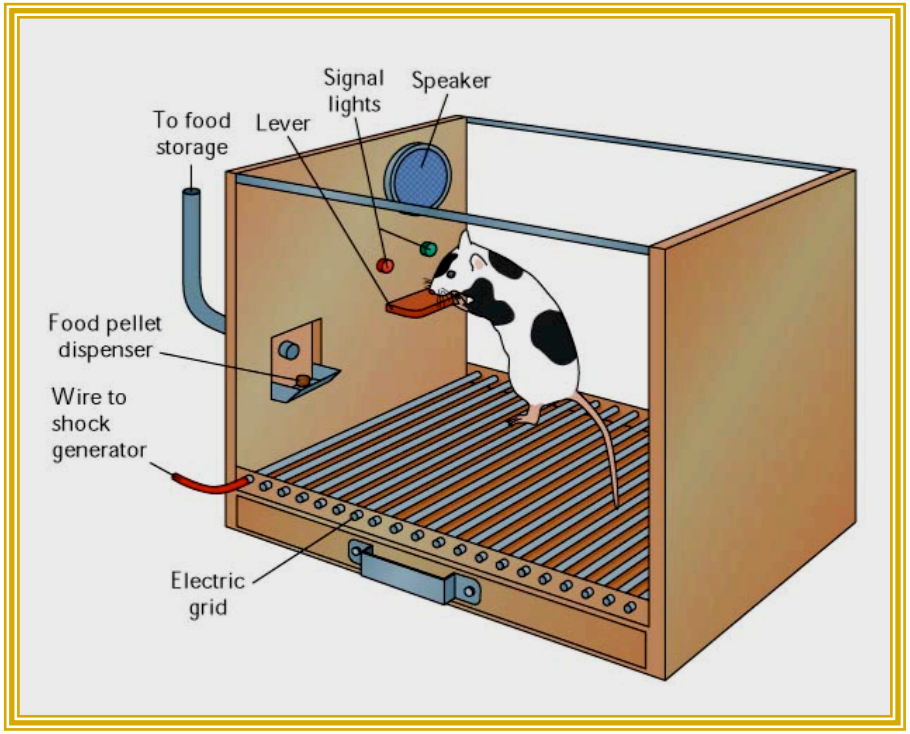


- Law of Effect: the probability of an action being repeated is strengthened when followed by a pleasant or satisfying consequence

Operant Conditioning (Continued)

- Skinner's Contribution

- Conducted systematic research using a Skinner box



Operant Conditioning's Basic Principles

- Reinforcement: *strengthening* a response

Operant Conditioning's Basic Principles (Continued)

- Primary Reinforcers: normally satisfy an *unlearned* biological need (e.g., food)

- Secondary Reinforcers: *learned* value (e.g., money, praise)

Operant Conditioning's Basic Principles (Continued)

- Positive Reinforcement: *adding* (or presenting) a stimulus, which *strengthens* a response and makes it more likely to recur (e.g., praise)

Operant Conditioning's Basic Principles (Continued)

- Negative Reinforcement: *taking away* (or removing) a stimulus, which *strengthens* a response and makes it more likely to recur (e.g., headache removed after taking an aspirin)

Operant Conditioning's Basic Principles (Continued)

SUMMARY TABLE 6.2 HOW REINFORCEMENT STRENGTHENS AND INCREASES BEHAVIORS

	Positive Reinforcement [Adds to (+) and strengthens behavior]	Negative Reinforcement [Takes away (–) and strengthens behavior]
Primary Reinforcers	You do a favor for a friend and she buys you lunch in return.	You do the dishes and your roommate stops yelling.
	You wash your friend's car and she hugs you.	You take an aspirin for your headache, which takes away the pain.
Secondary Reinforcers	You increase profits and receive $200 as a bonus.	After high sales, your boss says you won't have to work on weekends.
	You study hard and receive a good grade on your psychology exam.	Professor says you won't have to take the final exam because you did so well on your unit exam.

Operant Conditioning's Basic Principles (Continued)

- Punishment: *weakening* a response

Operant Conditioning's Basic Principles (Continued)

- Positive Punishment: *adding* (or presenting) a stimulus that *weakens* a response and makes it less likely to recur (e.g., shouting)

Operant Conditioning's Basic Principles (Continued)

- Negative Punishment:

  taking away (or removing) a stimulus that *weakens* a response and makes it less likely to recur (e.g., restriction)

Cognitive-Social Learning

- Cognitive-Social Theory:

  emphasizes the roles of thinking and social learning in behavior

Cognitive-Social Learning (Continued)

- Observational Learning: learning new behaviors or information by watching others

Bandura's Famous Bobo Doll study