

General Psych

Learning

Classical Conditioning

Pavlov

Reflexologist

- skilled surgeon
- studied reflexes
- studied digestive reflexes
 - 1904 Nobel Prize in Medicine
 - 20 years studying digestive system

Associationism

- First empirical model
- Integrated reflexology and associationism
- Psychic secretion

Pavlov's Experiment

Forward Conditioning

- CS before UCS
- Bell before food
- Works the best
- 50-60 trials

Simultaneous Conditioning

- CS and UCS at same time
- Bell and food together

Backward Conditioning

- USC before CS
- Food before bell
- not very efficient

Classical Conditioning Issues

- Temporal order of presentation of CS and UCS is important
- Best conditioning: CS precedes UCS (forward)
- Worst conditioning: UCS precedes CS (backward)
- Interstimulus interval (ISI) between CS and UCS is important for conditioning
 - ISI's longer than 2 sec produce poor conditioning
- Prior conditioning history is important
- Latent Inhibition:
 - Repeated exposure to a neutral stimulus alone (no UCS) makes it
 - More difficult to use the stimulus as a CS in the future
 - Familiar ice cream taste is less likely to produce a CTA than a novel flavor
- Blocking:
 - the failure of a stimulus (light) to elicit a CR (salivation) when it is combined with
 - a stimulus (bell) that already elicits the response (UCS is food)
- Size of stimulus is important
 - Must be noticed to be conditioned
 - Sensory systems expel irrelevant input

John Watson (1878-1958)

The mind is a black box; contents are unknown

S-R bonds

Complex behaviors are aggregates of less complex habits
based on the same principles of S-R bonds

Applied Pavlovian conditioning to all behavior

People are not good or bad

They do good and bad behaviors

All problems can be solved by changing behaviors

Proposed a rehabilitation program for prison inmates

Criminal behavior was antisocial behavior

Change antisocial behavior to social behavior

Called "experimental ethics"

Not widely accepted

1918, Watson and Rosalie Raynor

Showed that fear is classically conditioned

"Little Albert"

11-month boy

Presented small white rat & startling \$

Learned to fear white rats

Generalized that response to white fluffy toys and animals (stimulus generalization)

Concluded: conditioning in humans follows same principles as animals

Extinction

conditioned response decreases in frequency

eventually disappears

Spontaneous Recovery

no exposure to the conditioned stimulus

reappearance of conditioned response

after time has elapsed

Stimulus Generalization

similar stimulus produces conditioned response

similar to the original conditioned stimulus

If a response is conditioned to one stimulus, the organism may also respond to a similar stimulus

Generalization

If a response is conditioned to one stimulus, the organism may also respond to a similar stimulus

Not to a dis-similar stimulus

\$ Generalization

Elicit

CS (tone) comes to elicit salivation (CR)

Conditioned Taste Aversion

If a flavor is followed by an illness experience, animals will avoid the flavor in the future

Advertising

B.F. Skinner (1904-1990)

Elegantly simplistic theory

Functional analysis

1 subject at a time (laws of behavior must apply to every subject)

Internal structures are "fiction"

can't be directly observed

can't operationally define

can't systematically test them

Unnecessary to posit internal forces

personality and personality theories are superfluous

internal states (if they exist) are the by-product of behavior

Operational definitions

Clear definitions not open to interpretation

Didn't infer internal states (hunger, etc); # of hrs not eaten

Did not hypothesize drive, insight or any internal process

Operant Conditioning

Also called instrumental conditioning:

Responses operate on the environment and are instrumental in receiving reward

3 Components

1. Antecedent condition

Antecedent condition = Circumstances that indicate when to respond

Discriminative stimulus

green light = cross street; red light = don't cross

2. Behaviour

3. Consequence

The outcome, result of the behaviour

Reinforcement = positive outcome

Punishment = negative outcome

Theory

Behavior is emitted from the organism

A consequence occurs

The organism adapts its behavior accordingly

Focus on S-R-C (stimulus-response-consequence)

Not S-R (stimulus-response)

Rewards impact an entire class of behavior

Operant is a class of behavior

Not a single response

Answering the phone

Types of Consequences

2 bi-polar dimensions of consequences

Give-take: posit and negate

Good-bad: reward and punish

4 consequence conditions

Positive reinforcement

Positive punishment

Negative reinforcement

Negative punishment

REINFORCEMENT

An environmental stimulus that occurs after the response and increases the likelihood that the response will occur in the future

Positive reinforcement

Reward after behavior

Makes response more likely to occur in future

Negative Reinforcement

Sometimes called escape learning

Sometimes called avoidance learning

Behavior terminates an aversive stimulus

More likely to do behavior when in that situation again

Taking out trash to stop nagging

Removing impending doom

5 schedules of reinforcement

Continuous reinforcement (shaping)

Fixed interval (FI) (scalped)

Fixed ratio (FR)

Variable interval (VI) (resistant to extinction)

Variable ratio (VR) (very resistant to extinction)

Continuous reinforcement:

Reinforcer is obtained for every response

Intermittent schedules:

Reinforcer is not obtained for every response

Ratio Schedules

Fixed Ratio: Every Nth response

Variable Ratio: The average is every Nth response

Interval Schedules:

Fixed Interval: After the elapse of N min.

Variable Interval: On average, after N min

PUNISHMENT

Decreases a behavior

Temporarily

Has unwanted emotional consequences

Positive Punishment

Give an aversive stimulus (Positive)

Parent spanks a child for taking candy...

Owner swats a dog who has chewed her slippers...

Negative Punishment

Removal of a reward (Negative)

Teenager who stays out past curfew is not allowed to drive the family car for 2 weeks...

Husband who forgets anniversary sleeps on couch for a week...

Difficulties in Punishment

Learner may not understand which behavior is being punished

Fear and emotional upset

May not undo existing rewards for behavior

Tends to be used when angry

Models aggressive behavior

Blocks behavior; doesn't change it

Summary

Rewards should be given differentially

Reward behaviors want and ignore (extinguish) behaviors don't want

Behavior can be shaped by rewarding successive approximations

Practice without reinforcement doesn't improve performance