

**LEARNING** = Relatively permanent change in behavior due to experience.

### John B. Watson

Psychology as objective science. Recommended study of behavior without reference to unobservable mental processes. (Dozen healthy infants...)

**Response:** Any identifiable behavior (Internal: Faster heartbeat, Observable: Eating, scratching)

**Antecedents:** Events that precede a response

**Consequences:** Effects that follow a response

**CLASSICAL CONDITIONING** = Antecedent events become associated with one another.

**Ivan Pavlov:** Russian physiologist who initially was studying digestion. Used dogs to study salivation when dogs were presented with meat powder. (aka: Respondent Conditioning)

### Terms of Classical Conditioning

|                              |  |
|------------------------------|--|
| Neutral Stimulus (NS)        | Originally does not elicit a response                                    |
| Unconditioned Stimulus (UCS) | Stimulus that automatically elicits a response                           |
| Unconditioned Response (UR)  | Response that occurs following UCS without learning                      |
| Conditioned Stimulus (CS)    | Stimulus that elicits a response because of repeated pairings (learning) |
| Conditioned Response (CR)    | Response that occurs following CS <i>because</i> of learning             |

### Process of Classical Conditioning

NS, UCS => UCR

CS+UCS => UCR

CS => CR

**Higher Order Conditioning** = Adding an additional CS to the already conditioned CS. (ie: CS2 + CS => CR)

**Stimulus Generalization** = Inability to detect differences in similar stimuli

**Stimulus Discrimination** = Ability detect differences in similar stimuli

**John Garcia and Robert Koelling** = Some things are better pairs in conditioning (Like A and D)

A = taste and poison, B = light/noise and poison, C = taste and shock, D = light/noise and shock

**Conditioned Emotional Response** = CR is an emotion (Fear, happiness, sadness...) CS -> CER

**Garcia Effect** = CER with food and nausea

**Experimental Neurosis** = mental neurosis caused by too similar stimuli

**Addiction treatment / Counterconditioning** = see therapy (ch 17) notes

### Stages

**Acquisition** - learning

**Extinction** - forgetting

**Savings** - faster next time

**Spontaneous Recovery** - creeps up later

### Rate

**Negative Acceleration** - learning slows as the amount of learning increases

**Asymptote** - learning levels off (most stable point)

### Timing and Conditioning

**Standard** = CS + UCS

**Delay** = long delay in onset of CS + UCS

**Temporal** = CS (set amount of time) + UCS

**Simultaneous** = CS/UCS at same time (no conditioning)

**Backward** = UCS + CS (no conditioning)

**Temporal contiguity** = events are linked due to closeness in time

**Contingency** (Robert Rescorla) = events are linked because one becomes contingent on the other

**Expectancy**

**Little Albert**

**Law of Effect:** Edward Lee Thorndike. Behaviors followed by favorable consequences become more likely, and behaviors followed by unfavorable consequences become less likely

**OPERANT CONDITIONING** = type of learning in which behavior is strengthened if followed by reinforcement or diminished if followed by punishment

**Operant Behavior** = operates (acts) on environment produces consequences

**Respondent Behavior** = occurs as an automatic response to stimulus behavior learned through classical conditioning



**B.F. Skinner** (1904-1990) = elaborated Thorndike's Law of Effect; developed behavioral technology

**Operant Chamber (Skinner Box)** = chamber with a bar or key that an animal manipulates to obtain a food or water reinforcer; contains devices to record responses

**Reinforcer** = any event that strengthens the behavior it follows, Positive R and Negative R

**Punishment** = aversive event that decreases the behavior that it follows powerful controller of unwanted behavior, Positive P, Negative P

**Primary Reinforcer** = innately reinforcing stimulus (i.e., satisfies a biological need)

**Conditioned Reinforcer** = stimulus that gains its reinforcing power through its association with primary reinforcer (Aka: secondary reinforcer)

**Shaping** = reinforce for successive approximations of bx (for bxs that would not normally happen on their own)

**Continuous Reinforcement** = reinforcing the desired response each time it occurs

**Partial (Intermittent) Reinforcement** = reinforcing a response only part of the time results in slower acquisition; greater resistance to extinction

**Fixed Ratio (FR)** = reinforces after a specified number of responses; fast learning/fast extinction; very high rate of responding; piecemeal

**Variable Ratio (VR)** = reinforces after an average /unpredictable number of responses; gambling/ fishing; very hard to extinguish

**Fixed Interval (FI)** = reinforces after a specified time has elapsed ; Paychecks every Friday

**Variable Interval (VI)** = reinforces at average/unpredictable time intervals ; produces slow steady responding; like pop quiz; most resistant to extinction

**Generalization** = Respond to similar stimuli

**Discrimination** = Respond only to the reinforced stimuli

**Discrimination training** = S+ reinforce, S- do nothing

**Response chain** = Many responses linked leading to a single reward. Anticipate future rewards; grades

**Escape learning** (learned helplessness)

**Avoidance learning**

**Cognitive Learning** = Higher level thinking in learning

**Cognitive Maps** = internal representation of an area/campus/ room/maze...

**Latent Learning** = Tolman and Honzik (1930) Learning wasn't apparent until the reinforced

**OBSERVATIONAL LEARNING / SOCIAL LEARNING/ MODELING / VICARIOUS LEARNING** = learning by watching and imitating others.

**Bandura's Bobo Doll Experiment**

A: watched adults abuse Bobo

B: watched TV footage of the adults abusing Bobo

C: watched cartoons of adults abusing Bobo

Were then frustrated while in a room with Bobo

**Learned Helplessness** (Seligman)