Sociology 142: SCZN
Midterm #1 Book Review

Matthew Zajic
mzajic@umail.ucsb.edu
Fall 2011

Important Test Facts

- Answer 5 out of the 6 questions
  - Spend ~10 mins per question
- Answer in any format you want
- Can only submit a regrade if test is done in PEN
- Everything is fair game!
  - Remember that reading that made absolutely no sense to you? Even that! Ask Questions!

Pavlovian Conditioning

The association of a given stimulus to a reflex that does not occur naturally

PAV Con Experiment

Occurs when some neutral stimulus (NS) becomes associated with an existing reflex AND that existing reflex elicits a reflexive response

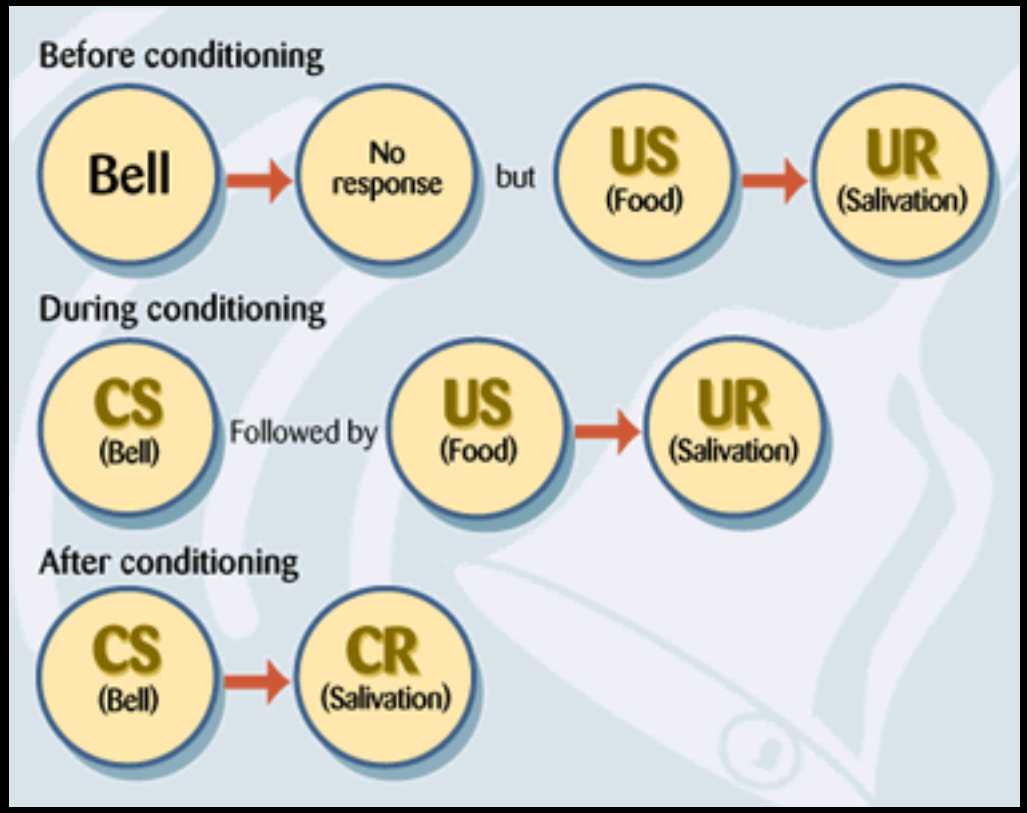
Pavlovian Conditioning

Terminology

- Unconditioned Reflex (UR)
  - Most basic, Innate, Does not need to be learned
- Unconditioned Stimulus (US)
  - Does not need to be learned, prompts the UR
- Neutral Stimulus (NS)
  - US becomes this, does not elicit a UR or CR
- Conditioned Reflex (CR)
  - Learned, new sensations become associated with a UR
- Conditioned Stimulus (CS)
  - Learned, prompts the CR, NS becomes this

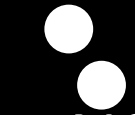
Pavlovian Conditioning

Pavlov's Dog Example



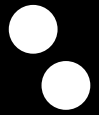
Pavlovian Conditioning

1) US →→→ UR
2) US →→→ UR



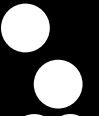
NS

3) US →→ UR



CS → CR

4) US →→UR



CS →→ CR

5) CS →→→ CR

1) Before conditioning, completely innate
2) Onset of conditioning, a NS appears
3) Conditioning, NS = CS, and a CR appears
4) Conditioning, the bonds between the CS and CR grow stronger
5) The CS & CR relationship dominates

Pavlovian Conditioning

- The CR IS NOT the UR
  - Usually less intense and slower to appear
- Predictive Stimuli (PS)
  - CS = PS →
    - CS contains important information
    - CS states that CR will follow
  - Stimuli most predictive of the event tend to act as the CS to the CR
    - Angela's car example

Pavlovian Conditioning

Common Conditioned Responses (Table 2.1)

- Voluntary Muscles
- Circulatory System
- Digestive System
- Respiratory System
- Reproductive System
- Emotional System

Be able to know at least a few from each category

Pavlovian Conditioning

Obvious Reflexes (why are these obvious?)

- Voluntary Muscles
- Circulation
- Digestion
- Respiration

Less Obvious Reflexes (why less obvious?)

- Reproduction
- Emotional Responses
- Understanding Emotions
- Empathy

Pavlovian Conditioning

- Voluntary Muscles
  - Infant's responses could mean life or death
  - Innate reflexes help the baby get started
  - Though many disappear, some remain
- Circulation
  - Physical exertion → increased HR
  - Individuals learn to blush at different things
  - People tend to be shocked when they are uncontrollably blushing

Pavlovian Conditioning

Digestion

- Remember that good food (US) → salivation (UR)
- Who says what food is good? CS
- The brain sometimes does not make the correct associations
  - Eating chili while sick only to vomit it later that night (chili did not cause the vomiting, but brain labels it as the CS)

Respiration

- Coughing, sneezing, hiccups, asthma attacks
- Could condition yourself to sneeze (CR) when you see a political speech (CS) because you might have allergies

Pavlovian Conditioning

Reproduction

- CS that elicits a sexual arousal = erotic stimuli
- Experimentation with masturbation at young ages → what are you thinking about?
  - Pairs certain images with the act of being sexually turned on
- Different upbringings = different #s of CSs

Emotional Responses

- Most UR = pleasurable or aversive
- When NS precede emotional R, CSs → emotional
  - Emotional response of a CS → CER
- Since CS = PS, then the CS can elicit pleasant or unpleasant emotions before the US appears
- Even cognitive stimuli can be CERs (+ when breastfeeding)

Pavlovian Conditioning

Understanding Emotions

- Pay attn to the stimuli that precede emotions
- People are influenced by environ cues including emotional Rs from others when labeling yours
- Involves internal sensations and external cues

Empathy

- Similar PAV C can allow for people to empathize with each other
- Both accurate and inaccurate empathy is capable
- People with unique emotional experiences → relate with only a few other people with it
  - Easier to empathize about a traumatic event with your therapist or another person who it happened to?

Pavlovian Conditioning

The brain is a very active processing organ

Any stimulus provides an enormous amount of BIOLOGICALLY useful information if it accurately predicts the US appearing, this INC the association of the UR

All of this can occur without being consciously aware!

Conditioned inhibition – the brain stops a CS from eliciting a CR

- Imagine a constant practical joker or a pathological liar

Pavlovian Conditioning

Biological Preparedness – the brain automatically connects certain types of life-critical USs

- Various types of food, protection against sickness

Conditioned food aversion

- Continual bad experiences with a specific food that causes avoiding a specific food

Pavlovian Conditioning

Six Determinants of Strong Conditioning

1. Strong USs → stronger CRs
2. Repetition of a CS as a PS → INC power for the CS to lead to CR
3. When a CS is paired with a US → the CS can elicit the CR if pairing is intermittent
   - Only wearing a perfume before making love → association of perfume with sexual arousal
4. Short time lags between the onset of a CS and the onset of a US will INCREASE PAV C
5. Cognitive processes can allow association of a PS and US that are separated by a LONG period
   - Covert conditioning – reliving memories allows conditioning to take place covertly, without any visible signs
6. PS must occur BEFORE, not AFTER, a US

Pavlovian Conditioning

Suboptimal Conditioning

- Overshadowing – the presence of intense, large, or conspicuous stimuli that interfere with the actual stimuli to predict the US
  - Meeting an awesome person at a party, but then seeing them again days later to find out they are terrible (the party drowned out the personality)
- Blocking – conditioning of a valuable PS is hampered by the strength of CSs thru prior conditioning
  - Showing a non-poisonous snake to a person with a conditioned fear to snakes → immediate reaction to turn away

Pavlovian Conditioning

Extinction

- CS present, BUT does not precede the its US
- Gradually loses its ability to elicit the CR, thus the CS → CR becomes weaker
- Extinction can occur naturally at all stages
  - Are you still afraid of the monsters under or at the foot of your bed?
- You can outgrow childhood fears or aversive conditioning if the negatives stop happening
- Once the CS → CR has weakened, it is possible to recondition the association

Pavlovian Conditioning

Spontaneous Recovery

- After EXT weakens the CRs, CRs do regain some strength for a short time period after
- Does not need the CS to be present
- Causes a slight increase in the strength of the CS → CR without anything done on your part
  - Before you moved away to college, your family might have been a CS for stress; now that you are away, you may feel you can go back without feeling stressed, but it might appear again
  - If it reappears, then this has strengthened the CS → CR

Pavlovian Conditioning

Avoidance Retards Extinction

- If a person avoids the CS, they never learn to recondition it!
- If you are afraid of heights and you simply avoid them → your fear still exists
- Conditioned fears and anxieties are less likely to extinguish naturally than are conditioned pleasures
  - You want to have contact with pleasures, meaning you have plenty of chances to choose how this relationship works
  - You do not want to have contact with fears or anxieties, meaning you have few chances

Pavlovian Conditioning

Therapeutic Extinction

- Confronting a fear-inducing CS in a safe environment
- Easier to recondition the CS when it is isolated as the only variable
- No fear of strengthening the CS → CR relationship

Pavlovian Conditioning

Higher Order Conditioning

- Conditioning a CS into another CS as if it acted like a US; allows for the CS2 to occur without the original US
  - US → UR = painful touch
  - CS1 → CR1 = "That's a no-no"
  - CS2 → CR2 = "That's dangerous"
- First order conditioning → normal PAV C
- Second order conditioning → PAV C occurring past the initial stage
- Higher order conditioning is NOT as strong as first order conditioning
  1. USs not present in higher order conditioning
  2. CSs are conditioned from CSs, hence a weaker response than from a US

Pavlovian Conditioning

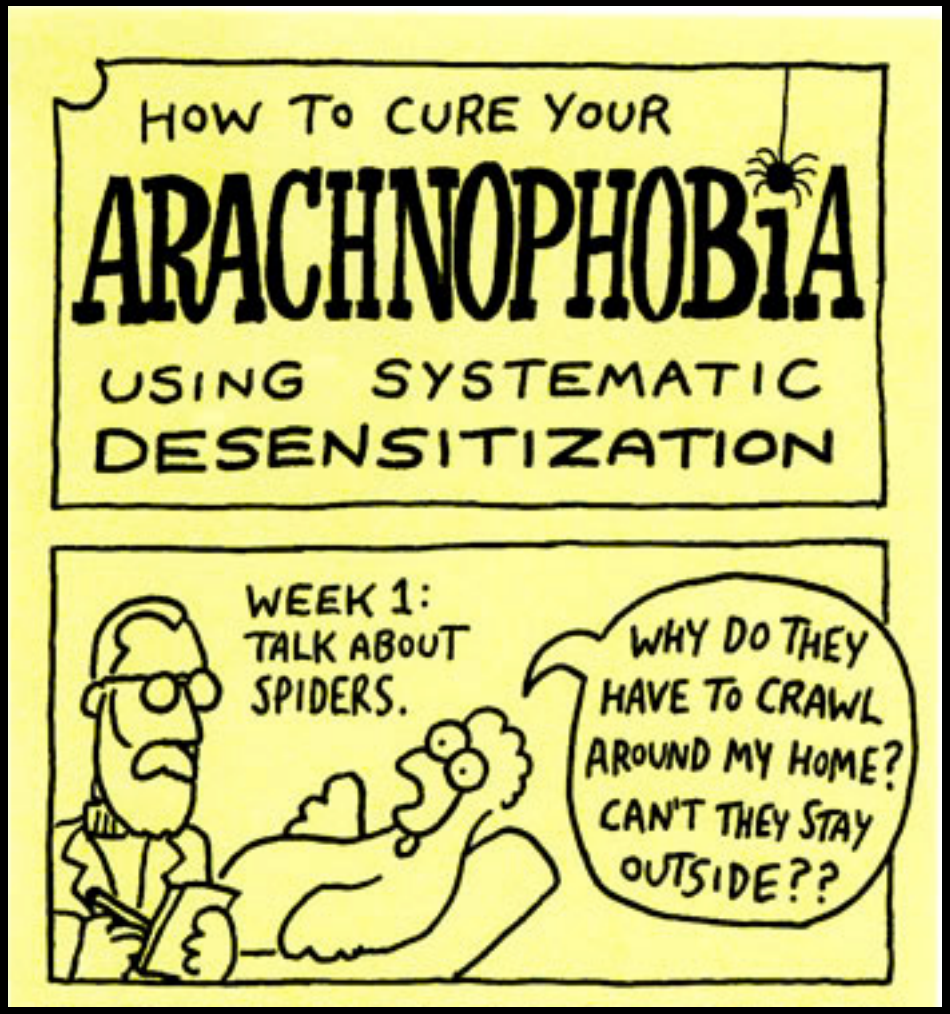
Counterconditioning

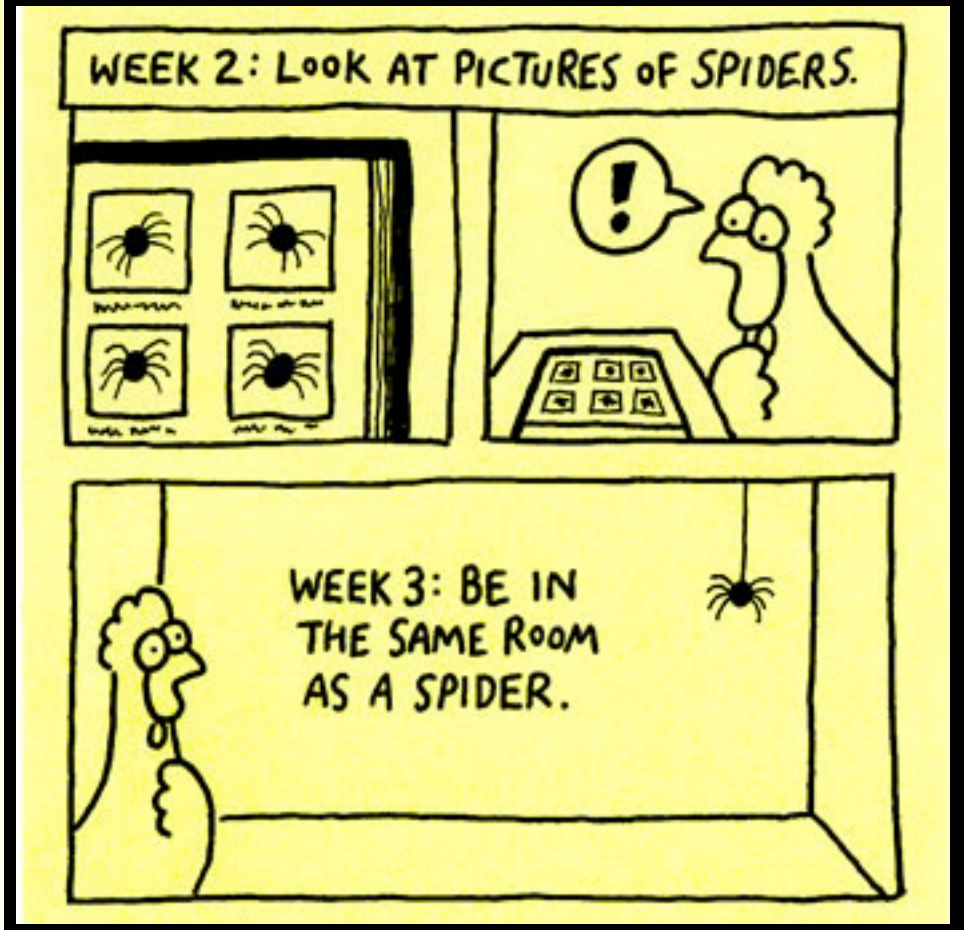
- After a CS has been conditioned, it may precede a US or CS of a different response
- Reverse the effects of the original conditioning by combining extinction and new conditioning
- Rate is influenced by the number of + and – stimuli present
  - Much more difficult to recondition an event full of +

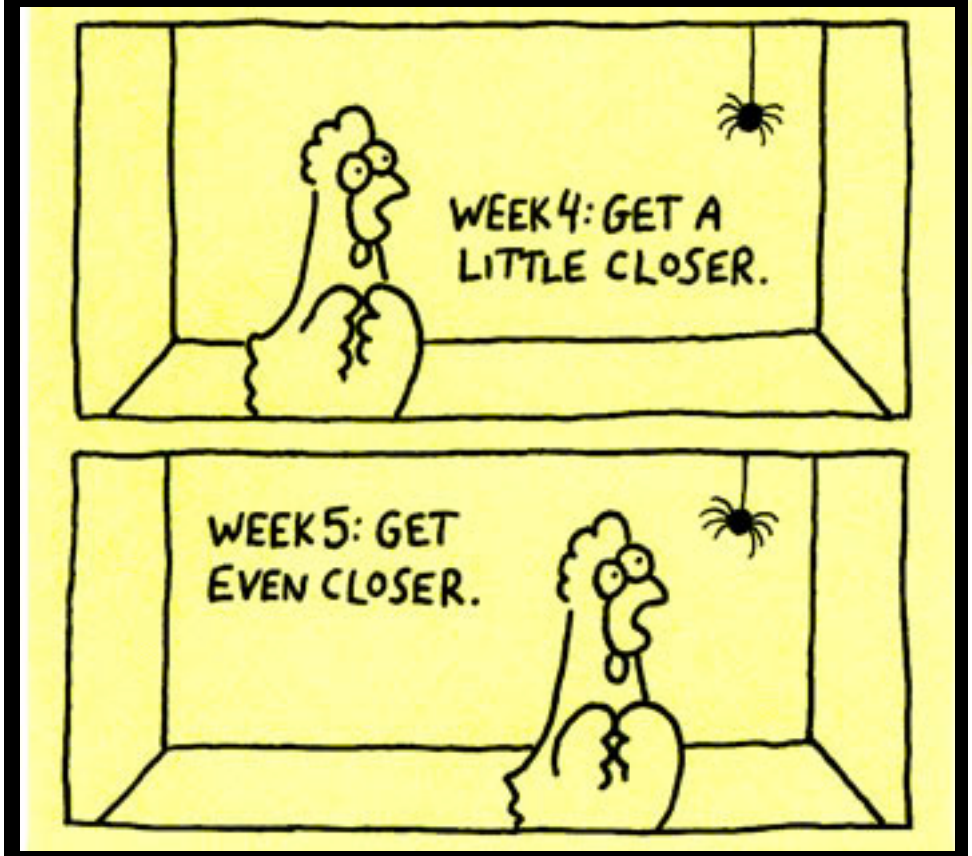
Pavlovian Conditioning

Therapeutic Counterconditioning

- Systematic desensitization – gentle procedure used to reduce people's fears tied to CSs
  - Pairing a CS with stimuli that elicit relaxation and other +s
  - Increased pairing → flipping the CS from – to +
- Aversive counterconditioning – powerful technique for reversing a given CS with harmful positive emotions
  - Performing the given stimuli and then ensuring a harmful CS will follow, associating the two together (eg. Masturbatory techniques and nausea)
  - Needs behavior modification to ensure long lasting success


HOW TO CURE YOUR
ARACHNOPHOBIA
USING SYSTEMATIC DESENSITIZATION
WEEK 1: TALK ABOUT SPIDERS.
WHY DO THEY HAVE TO CRAWL AROUND MY HOME? CAN'T THEY STAY OUTSIDE??


WEEK 2: LOOK AT PICTURES OF SPIDERS.
!
WEEK 3: BE IN THE SAME ROOM AS A SPIDER.


WEEK 4: GET A LITTLE CLOSER.
WEEK 5: GET EVEN CLOSER.

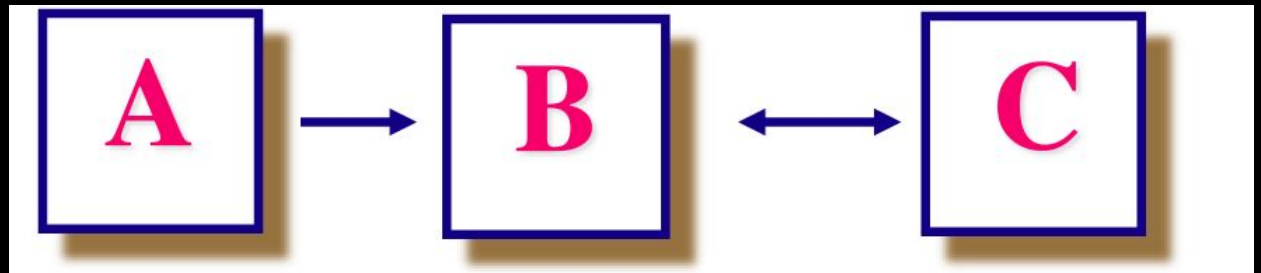

WEEK 6: LET THE SPIDER WALK ON YOUR HAND.
WEEK 7: LET THE SPIDER WALK ON YOUR FACE.
WEEK 8: PUT ON A SPIDER COSTUME.


WEEK 9: LIVE AMONG THE SPIDERS.


WEEK 10: EARN THEIR TRUST.
HEY GUYS! WANT SOME DEAD FLIES? THEY'RE STILL TWITCHING
YAY!

Until Finally…

Operant Conditioning



Antecedents	Behaviors	Consequences
Prompting	Desired	Positive Reinforcement
Modeling		Negative Reinforcement
Feedback	Undesired	Punishment
Goals		Extinction
		Escape/Avoidance

Operant Conditioning

Operate – "perform a function" "produce an effect"

OP Con

- Instrumental con; the skills we learn are instrumental in changing things and producing specific outcomes

Law of Effect

- Voluntary behavior is influenced by its EFFECTS (consequences)
- Satisfying behav → more frequent
- Discomforting behav → less frequent
- Behav may have + in one situation and – in others
- Behav influenced by the effects following it and the situational cues that PRECEDE it

Operant Conditioning

Antecedent : Behavior → Consequences

- A cues do not CAUSE B; only set the stage
- B CAUSE C to occur
- C do two things:
  - Influence the frequency of the B in the future
  - Influence the ability of A cues to set the occasion in the future
- C can either be + or - effects, which causes the B to INC or DEC in frequency and influencing the way A set the occasion

Reinforcer → Types of C that STRENGTHEN B

Punisher → Types of C that WEAKEN B

Operant Conditioning

Antecedents (A)

- A that preceded B (reinforced in the past) tend to set the occasion for repetition of that B
- A that preceded B (punished in the past) tend to alert us not to repeat those B again

The Operant

- Unit of B we study
- Defined by their ability to produce certain C
- Response Class

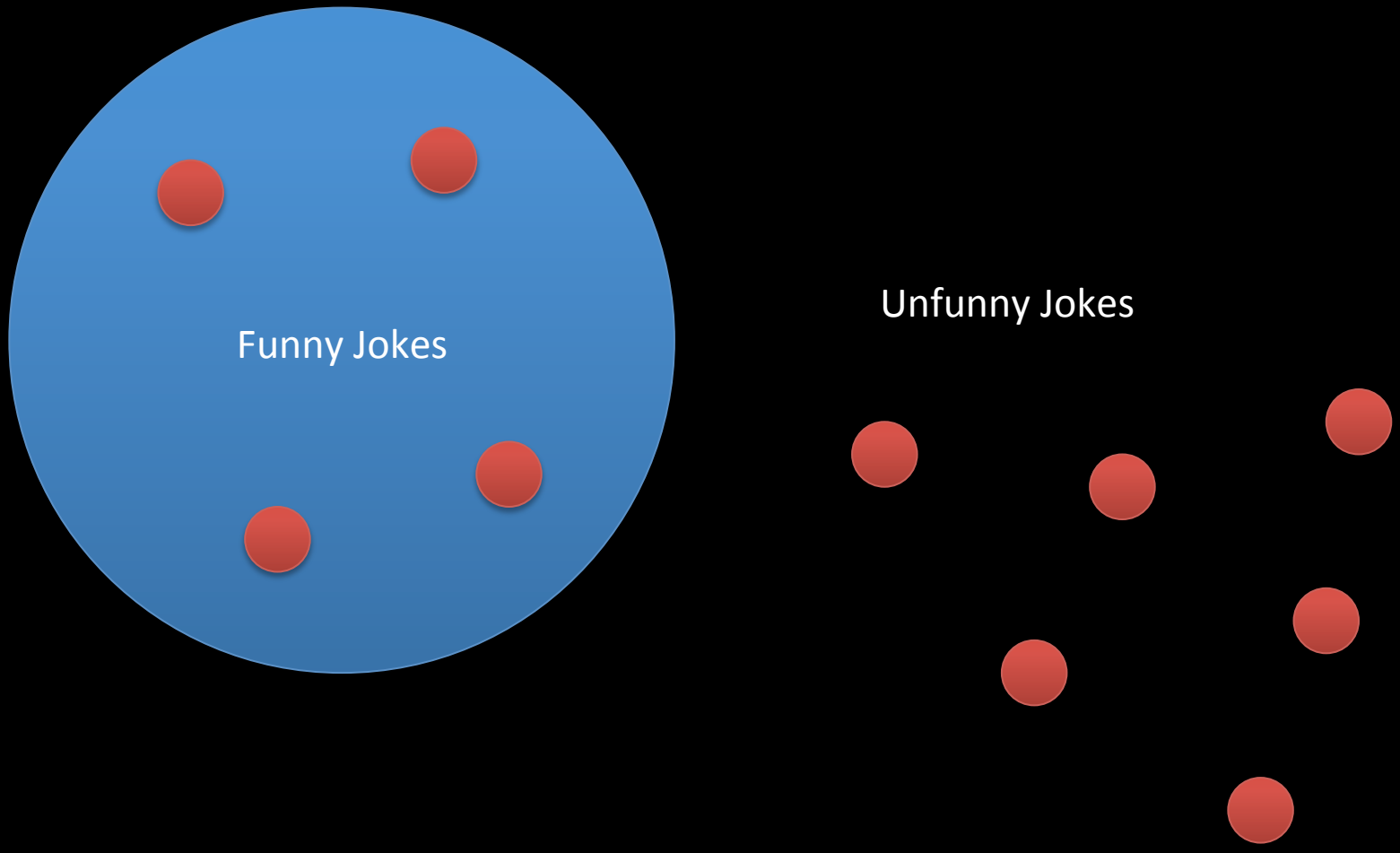
  All operants that produce similar consequences

  Each response class contains many B variations, though not all

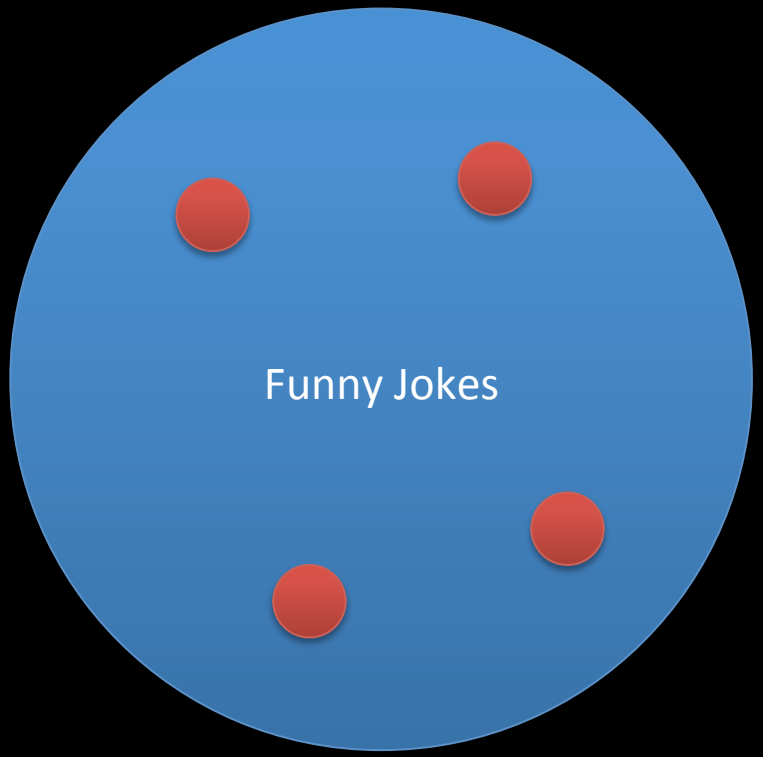
  Each response class is defined by its C

  Any B patterns that produce the same C = same response class

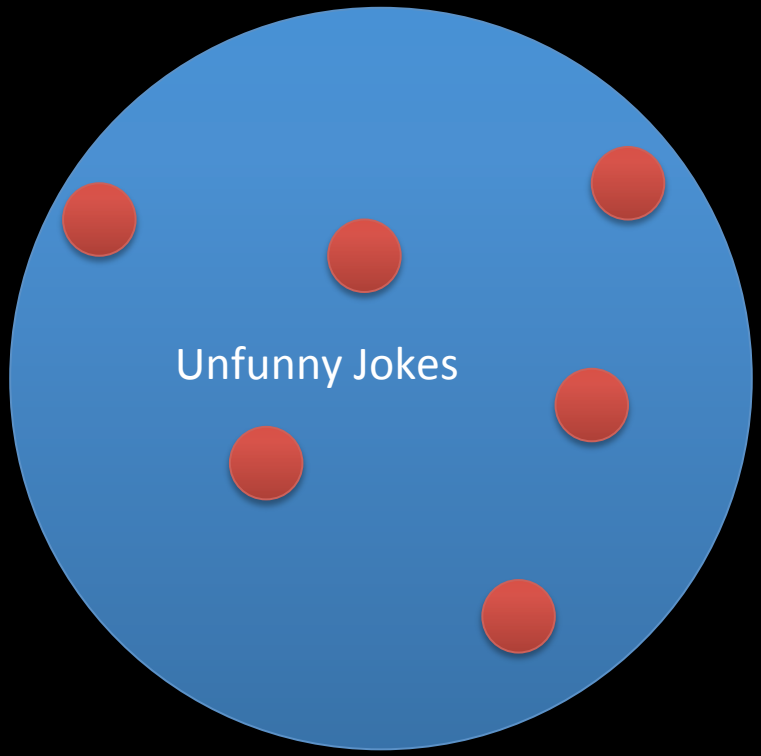
Operant Conditioning



Operant Conditioning



Any B patterns that produce the same C belong to the same response class



Operant Conditioning

Reinforcement

- A reinforcer that follows an operant INC the occurrence of the operant in the future
- Reinforcers will ALWAYS INC the operant
- Reward and Reinforcer are sometimes used interchangeably
  - Reward can be misleading – can be too narrow
  - Reinforce (reinf) is preferred
- Learning an operant B depends on:
  - Complexity of the operant
  - The person's present level of skills
  - The reinfs involved
  - Numerous other variables

Operant Conditioning

Cumulative Records

- Provides a way to measure the rate at which a person learns a B
- Convenient way of visualizing patterns of B by showing the total number of operants performed over a period of time
- Freshman journalism example
  - Constant rewarding for picking up the daily newspaper, does not need to gain new skills in order to progress
  - Working in the office → needing to gain additional skills and learns this more slowly; does not go into the office every single day

Operant Conditioning

Three Types of Stimuli

- Reinforcing stimulus (S^R)
  - Reinforcer
  - Come from inside and outside body
  - Athlete example – pushing your body and rewarded with thoughts
  - Reinfs both B and gives A stimulus special quality

Operant Conditioning

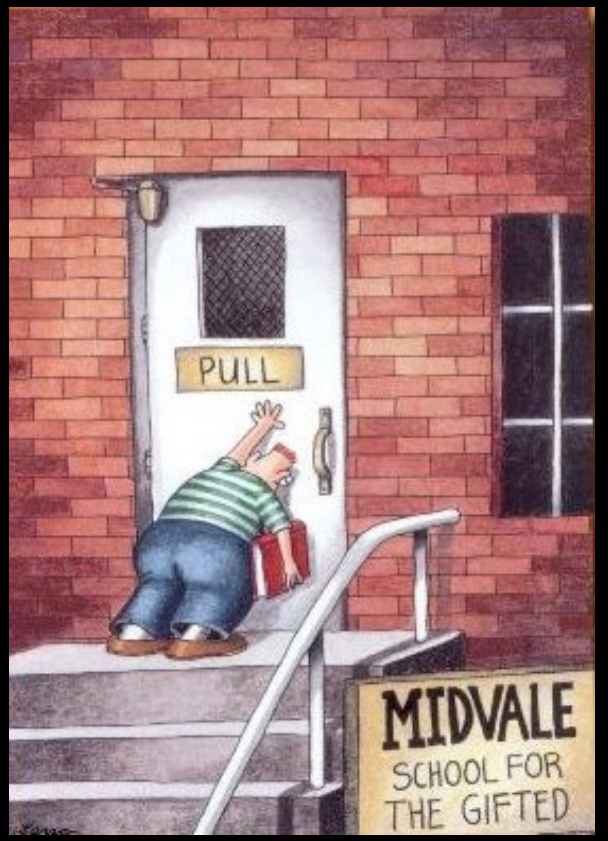
Three Types of Stimuli

- Discriminative stimulus (S^D)
  - Occurs when a S^R is present
  - Turns A into a S^D
  - Can change from context to context
  - Stimuli that best predict to reinf B → S^D

Operant Conditioning

Three Types of Stimuli

- Inhibitive discrim stimulus (S^{Δ})
  - Inhibits responding
  - Occurs when reinf does not follow B
  - Sometimes the S^{D} for one B may be S^{Δ} that inhibit another



Operant Conditioning

Information about S^Ds and S^Δs

- Neither have the power to cause or prevent B
- They merely set the occasion for the operants to occur
- They do not guarantee that the B will be performed or will never be performed
- A rewarding experience may be a S^Δ if a more rewarding S^D is present
- Learning can take place quickly or slowly

  Generally easy to discriminate between reinf and none, but becomes difficult between varying reinf amounts

Primary Reinforcers and Punishers

Sensory Stimulation

- Total amount of stimulation coming to use from all parts of the stimulus collage (inside and outside body)
- Can be both a reinf and a punisher (Pun)
  - Depends on quantity
- Normal conditions → low and high = primary Pun
- Between extremes exists an intermediate reinf
  - Boredom → extreme low, wanting to avoid
  - Anxious/Overwhelmed → extreme high, wanting to avoid

Primary Reinforcers and Punishers

Fixed but Flexible

- The ability of one source of stimuli to function as a reinf or a pun → influenced by other stimuli present
  - Exercising alone → can be boring
  - Watching tv alone → can be boring
  - Exercising + friends → exciting!
  - Watching tv + friends → exciting!
  - Finals + overtime at work + relationship troubles → stressed!

Primary Reinforcers and Punishers

Fixed but Flexible

- Novel stimuli provide MORE sensory stimulation than familiar stimuli
  - Repeated experience with any given stimulus causes it to "lose its novelty"
  - Habituation → a stimulus losing its novelty, slowest when:
    - complex, variable, different
  - Playing in a band at a show → exciting, but novel
  - Playing in a band at a show when a naked man starts dancing in front of you → novel!

Primary Reinforcers and Punishers

Fixed but Flexible

- After habituation, the stimulus can regain some novelty after a period of time with no encounter with the stimulus (recovery)
  - Ever go back to play a video game or a cd you haven't in a while and realize you love it?
  - Then shortly after you realize that you are bored of it again?
  - B that is reinforced by novelty sometimes appears in repeated cycles of habituation and recovery

Primary Reinforcers and Punishers

Fixed but Flexible

- There are individual differences in people's preferred types of SS
  - Some children grow up around lots of activity and noise; others prefer absolute quiet
- People's personal preferences for different types of stimulation often influence their social interactions
  - Two active people are more likely to get along well than an active person and a quiet person

Primary Reinforcers and Punishers

Fixed but Flexible

- There are individual differences in people's "taste" for different types of SS
  - People love different types of music, different volumes of music, different television shows, etc.
  - We all need SS, but we have very different ways in which we get it
  - Even risky B – speeding, sky diving – act as high levels of SS for people who enjoy it

Primary Reinforcers and Punishers

Fixed but Flexible

- Daily cycles of sleep and wakefulness alter the height of the optimal stimulation zone
  - We often seek out a dark, quiet room when we are sleepy because we want low levels of SS
  - Biological regulatory systems automatically adjust our optimal zone throughout our wake-sleep cycle
  - Attempting to go to sleep before you are tired → attempting to sleep with a high optimal zone

Primary Reinforcers and Punishers

Fixed but Flexible

- There are brain mechanisms that depress the zone of optimal SS when we are sick or fatigued
  - Feel like you don't have that much energy while sick?
  - We want to find the quiet, dark places when we are exhausted because we want to rest, a biological adaptive response to survival
  - If we strain ourselves while sick or fatigued, our survival drops, lowering the chance to pass on our genes

Thanks!

Thanks for coming; hopefully it helped you

If you have any questions, please feel free to ask

Good luck with the studying!