

# **Behavior Modification: The Geekiness Behind it All**

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# The Plan

- Part I (Geekiness)
  - Discuss terminology and the learning foundation behind the techniques
  - The science
- Part II (Getting it Right)
  - Discuss and demonstrate common behavior modification techniques used at Purdue University
- Part III (Faux Pas)
  - View cases with discussion



# Behaviorist Clarification

- The Psychiatrist
  - Veterinarian Specialist
  - Diplomat of the College of Veterinary Animal Behavior
  - Can rule out health issues and prescribe medications
  - Diagnosis and prescribes treatment plan
- The Psychologist
  - Doesn't have to be a veterinarian
  - Usually a Phd
  - Certified by the Animal Behavior Society
  - Can not rule out health issues or prescribe medications
- Veterinary Technician Specialist- Animal Behavior (not yet available)
  - Nurse to the “psychiatrist or psychologist”
  - Assists in follow up and treatment application
  - Can not diagnose or create the treatment plan
- Dog Trainers
  - CPDT



Learning is *ALWAYS* going on!

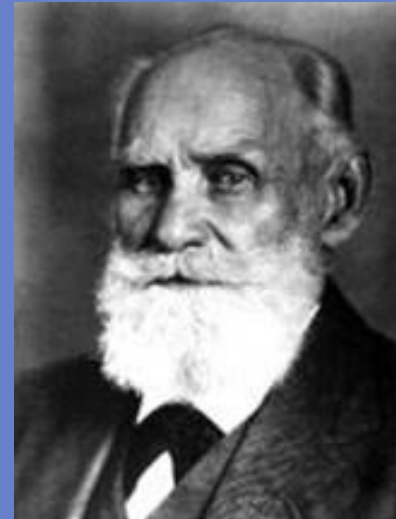
# Classical Conditioning





# Ivan Pavlov - 1889

- Russian physiologist studying digestion
- Observed research dogs would salivate when his assistant entered with food
- Tested the theory by ringing a bell just before presenting meat powder
- Respondent conditioning, pavlovian conditioning, classical conditioning



# John B. Watson - 1930

- Emphasized getting away from thoughts and emotions and concentrate on the scientific study of behavior
- Classically Conditioned a Fear Response
  - 11-month old “Little Albert” was allowed to play with a white rabbit. A loud noise was added every time Albert reached out to touch the rabbit. Albert began to cry when the rabbit was presented. He then generalized the fear to a Santa Claus mask and white dog.





# Classical Conditioning Defined

- Forming Associations Between Stimuli
- Pairing of Something Which has No Meaning with Something that has Inherent Meaning so That They Become Associated
  - Sound of food bag = meal time
  - Owner picks up lease = walk
  - Big dog = fear
  - Click = treat
- The animal doesn't have TO DO anything





# Applied Classical Conditioning

- Man puts a pot on the stove causing the smoke alarm to go off frightening the dog
  - Man begins to cook dinner, dog runs outside
- Pick up the dog the ear cleaning solution, the dog runs away
- Pick up the leash, the dog runs to you
- Often causes an conditioned emotional response



# Habituation

- The ability to stop reacting a meaningless stimulus
- Usually a weak, non-emotionally provoking stimulus

# Operant Conditioning





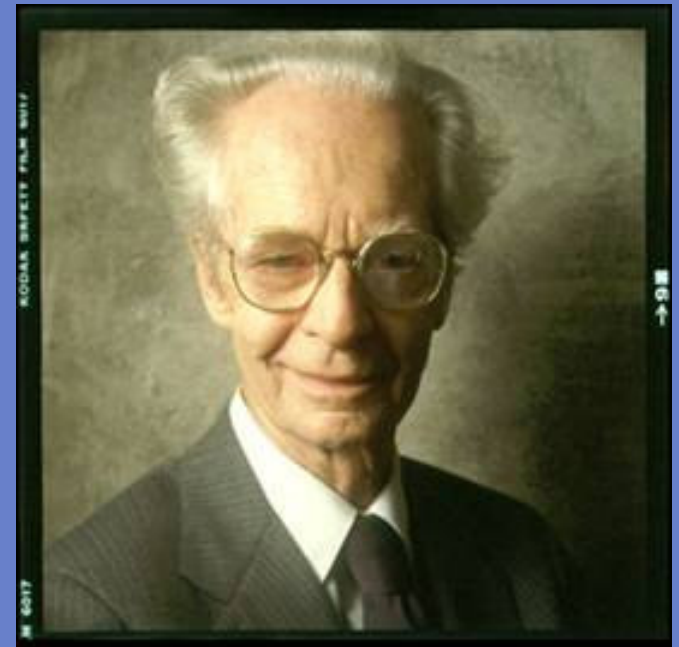
# Edward Lee Thorndike - 1930

- Puzzle Box – Thorndike placed a cat in a box with a barrier. He placed food outside of the box. He discovered the cat would get out the box faster with each trial.
- The Law of Effect - responses that are made just prior to a pleasant event is more likely to be repeated, while responses that are made just prior to unpleasant events are more likely to diminish.



# B.F. Skinner - 1938

- Publicized Operant Conditioning
- First to Use Conditioned Reinforcers – Clickers
- Developed the Skinner box
  - An animal placed inside the box is rewarded with a small bit of food each time it makes the desired response, such as pressing a lever or pecking a key. A device outside the box records the animal's responses.



# Marian and Keller Breland - 1943



- Skinner Students
- Began Animal Behavior Enterprises (ABE) and took Operant Conditioning Commercially
- 1965 Began Work with Bob Bailey Training Navy Dolphins
  - “Chicken Camp”

# Karen Pryor - 1984

- Dolphin Trainer
- Publishes “Don’t Shoot the Dog” and brings Operant Conditioning to the Dog Training World.





# My Behavior Has Consequences

- I have choices and I can make things happen in my environment depending on what I choose to do.
- Empowering!







# Reinforcement

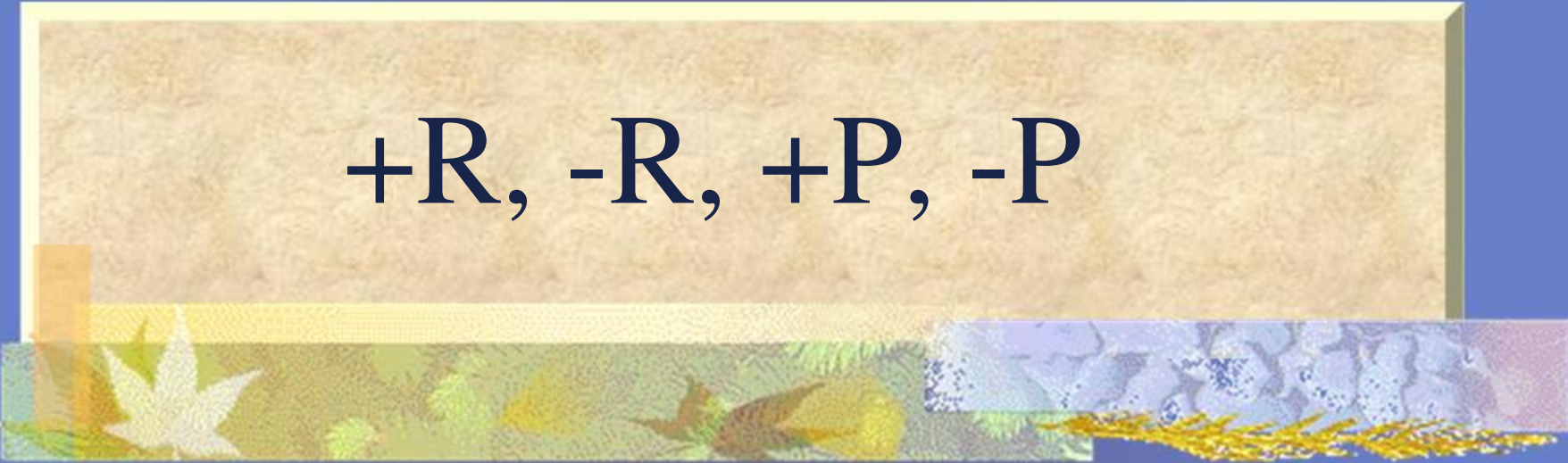
- Causes a behavior to become more likely

# Punishment

- Causes a behavior to become less likely



Duffy's shoestrings



+R, -R, +P, -P

“Creating Complexity is Easy,  
Creating Simplicity is Hard”



# Positive Reinforcement (+R)

- Adding something the subject wants to increase a behavior
  - Treats
  - Play
  - Attention
  - Sex
  - Take the kids to the mall when they don't nag about going to the mall



# Negative Reinforcement (-R)

- Removing something the subject doesn't want to increase a behavior.
  - Shock
  - Ear pinching
  - Kids Whining
  - Kids nagging me while I'm on the phone, I put down the phone and talk to them



# Conditioning with $-R$


## How it Works:

- Escape Conditioning
  - Performing a behavior can terminate an aversive stimuli
  - Kids nag relentlessly to go to the mall, I take them to the mall
- Avoidance Conditioning
  - Learning to avoid an aversive stimuli
  - The kids mention the mall and I hide



# Avoidance Conditioning

- If a Behavior Can Prevent a Negative Stimulus (or what the subject **thinks** may be a negative stimulus) From Occurring The Behavior will Increase in Frequency
  - To avoid a leash pop stay in the heel position
  - To avoid an ear pinch pick up the dumbbell
  - **To avoid contact with scary UPS driver growl**
- Behaviors are very resistant to extinction



# For Negative Reinforcement to be Effective:

- The Behavior Should First Be Taught Through Conventional Methods
- Proper Intensity or Will Cause Fear/Aggression
- Timing Must Be Precise for Administering and Removing Aversive
- Person Shouldn't Be Associated
- Conditioned Marker
- Can be Considered Cruel
- **Only Used in Dire Situations by a Veterinary Animal Behaviorist**





# Positive Punishment (+P)

- Adding something the subject doesn't want to decrease a behavior
  - Leash jerk
  - Kneeing a dog that jumps up
  - Spray bottle
  - Shaker can
  - Spank the kids when they start nagging to go to the mall

# Negative Punishment (-P)

- Removing something the subject wants to decrease a behavior
  - **Remove attention**
  - Remove toy
  - Put treats away
  - Go to the mall myself when the kids start to nag
  - Be creative!



# Effective Punishment

- Motivation Strength
  - Motivation is not reduced by punishment and creates a conflict
    - Chasing the cat
  - Any behavior naturally induced by an aversive stimuli cannot be reduced with positive punishment
    - Dog is attacked by another dog and attempts to run away on later dog encounters. +P will not reduce desire to run away but will increase anxiety



# Effective Punishment

- Contingency
  - Punishment must be consequence of behavior
  - Behavior must be punished, not dog
  - Punishment must follow the behavior every time
  - Punishment must never occur with out the behavior
  - Should not be related to trainer/owner



# Emotion

- Address the underlying emotion first
- Punishing the behavior and not addressing the emotion is in-humane
- Once the emotion is addressed, then address the behavior





# Effective Punishment

- Intensity
  - Punishment must interrupt behavior
  - Risk desensitization to punishment
  - Intensity not so high as to cause severe pain
- Timing
  - Within 0.5 second of beginning of behavior
  - Any delay makes punishment ineffective
- Alternative
  - Allowing an alternative behavior will funnel the motivation in the right direction



# Side Effects of Punishment

- **Inhibits Learning**
- **Increases Anxiety**
- **Causes Motivational Conflict**
- **May Cause High Stress**
- **Does Not Teach Appropriate Behavior**
- **Does Not Address the Negative Emotional State (usually worsens)**
- **Inhibits All Behavior**

Screen Media Films  
National Geographic Channel  
Dog Whisperer with Cesar Millan  
The Complete First Season

Disc 1: Episode 5  
"Brooks"

CM brooks mpg





# Extinction of an Operant Response

- Animal Learns the Response is No Longer Rewarded
- Rate of Extinction Depends on:
  - How well the response has been taught (overlearning)
  - Reinforcement schedule
  - Behaviors learned through Avoidance Conditioning are difficult to extinguish
  - Self-reinforcing behaviors can not be extinguished

# Extinction Burst (Frustration Effect)

- Behavior Becomes More Intense
- Behavior Becomes More Variable
  - Comes and goes for shorter durations
  - Intensity decreases





# Common Behavior Modification Techniques Defined

- Counter Conditioning
- Response Substitution
- Systematic Desensitization
- Flooding
- Combination



# Counter-Conditioning



- Taking a stimulus which has been associated with a fear/aggression provoking situation and changing the association to one signaling a pleasant situation





# Counter-Conditioning

- Changing the Negative Conditioned Emotional Response to a Positive Conditioned Emotional Response
- Beginning with CC can make response substitution and desensitization go more smoothly
- Once reactivity has decreased switch to Response Substitution

# Response Substitution

- Teaching an alternate, more acceptable behavior
- “Telling them what to do ‘instead’”
- “Helping them to make better choices or develop better ‘coping’ skills”



# Systematic Desensitization

- Gradual and systematic desensitization of currently fear provoking stimulus





# Nail Trims

- Counter-Conditioning
  - Touch the foot, give a treat
  - Put the foot down, remove the treat
  - Peanut butter syringe “Kong”
- Desensitization
  - Touch the shoulder, give a treat
  - Touch the elbow, give a treat
  - Touch his foot, give a treat
- Response Substitution
  - Teach “Shake” and then DS





# Clicker Training



# Clicker Training in Behavior Modification

- Counter-Conditioning
  - Changes a previously conditioned emotional response
- Desensitization
  - Accurately marks steps in the desensitization process
- Response Substitution
  - Hands off
  - “drop it”



# The “Clicker Cushion”

- The dog **MUST** have a positive and significant clicker history before using the clicker in the application of behavior modification.





# When to Use the Clicker

- When the animal isn't too stressed
  - Use treats to determine the dog's "stress barometer"
  - "Snatching treats" is OK, not taking treats is not
- Dog is too distracted
  - Decrease distractions
- Stimulus is at the proper intensity to learn
  - Decrease distance, decrease sound, etc.
- Click for performing an alternate behavior
- OR for not being aggressive/fearful (change the emotional response)



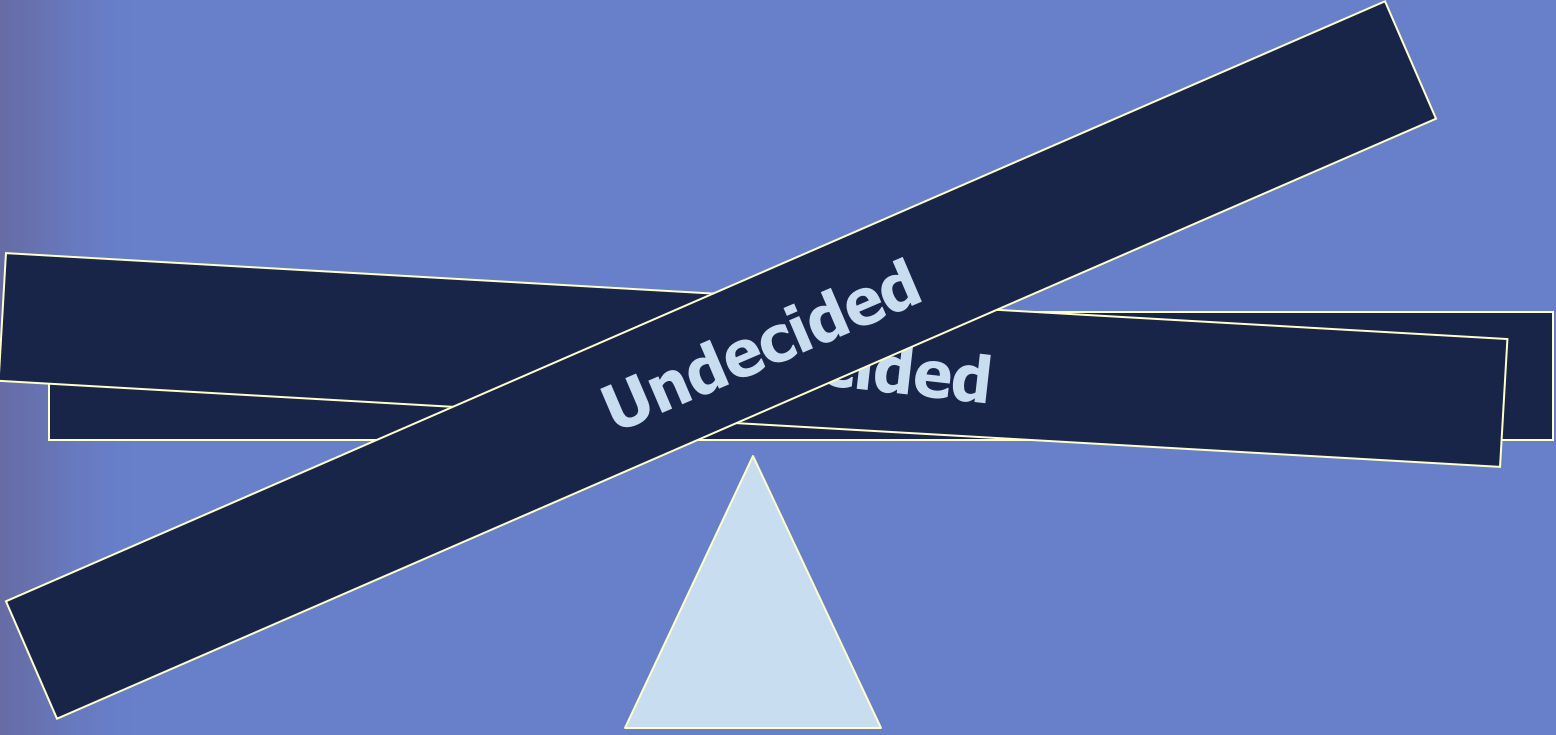


**Aggressive**

**Undecided**

**Decided**

**Neutral**





**PURDUE**  
UNIVERSITY

e

Too stressed to use clicker

The logo for Purdue University, featuring the word "PURDUE" in a large, bold, black serif font, underlined with a thin gold line. Below the underline, the word "UNIVERSITY" is written in a smaller, gold, all-caps serif font.

# PURDUE

UNIVERSITY

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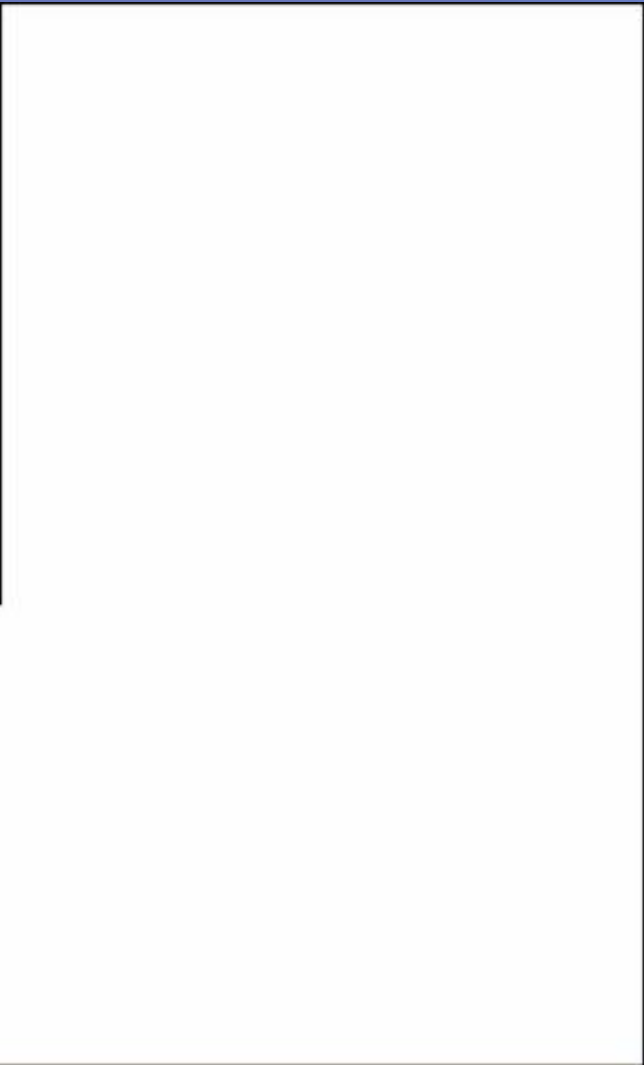
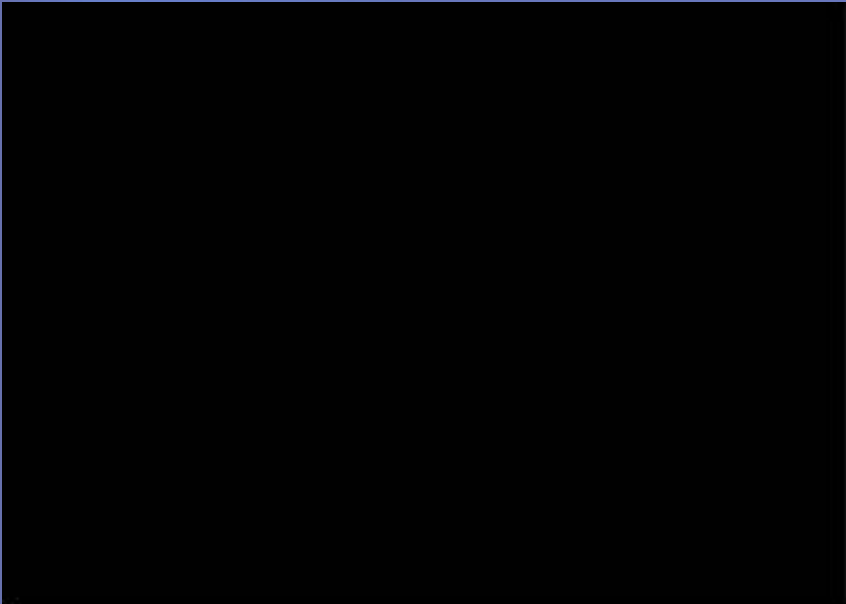



# Flooding

- Continuous exposure to a fear provoking stimulus from which it can't escape
- Inhumane unless used for very mild fear reactions
- Will worsen the behavior dramatically if not applied correctly
- Can cause physical and psychological damage
- Should rarely be used



Abby - Aggressive puppy at the veterinary hospital





Screen Media Films  
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Disc 1: Episode 3  
"Rana"

CM rana toaster mpg