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BEHAVIOR MODIFICATION FOR CATS IN SHELTERS AND FOSTER HOMES

Sara L. Bennett, DVM, MS, DACVB
VCA Chicago Behavior Service
VCA Berwyn Animal Hospital

Maddie's Fund

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Outline

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- ☐ **Types of learning**
  - ◘ Habituation, classical conditioning, operant conditioning
  - ◘ Quadrants of operant conditioning
    - ▪ Requirements for effective use
    - ▪ Welfare implications
- ☐ Behavior modification
  - ◘ Counter conditioning
  - ◘ Response substitution
  - ◘ Systematic desensitization
- ☐ How to put together a behavior modification plan

Fallacies of Learning

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- ☐ Animals do not reason
  - ◘ Can form simple abstract concepts
- ☐ Do not act out of spite
- ☐ Animals do not feel guilt or remorse
- ☐ Are not jealous
  - ◘ Competitive for attention
- ☐ Animals do not get bored
  - ◘ Frustration: motivated to do something without the appropriate releasing stimulus

Types of Learning

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- □ Habituation
  - ◘ Modify response to stimuli
- □ Classical Conditioning
  - ◘ Form associations between stimuli
    - ■ Pavlov
    - ■ Associative Learning
- □ Operant Conditioning
  - ◘ Form associations between stimuli and responses
    - ■ Skinner
    - ■ Trial and Error

Habituation

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- □ Definition:
  - ◘ Animal's response to a novel, neutral stimulus weakens after repeated exposure to stimulus
    - ■ Neutral: non harmful and non threatening
  - ◘ Animal learns stimulus has no consequence
    - ■ Doesn't mean or predict anything
  - ◘ Active learning process
    - ■ Not just forgetting
- □ Occurs in:
  - ◘ Systematic desensitization
  - ◘ Flooding

A.U. Luescher

Classical Conditioning

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- □ Definition:
  - ◘ Previously neutral stimulus attains meaning/ becomes a predictor (now a conditioned stimulus) for something after it was paired with an inherently meaningful (unconditioned) stimulus
  - ◘ Making association between two unrelated stimuli
- □ Involves involuntary visceral responses
  - ◘ Emotional responses
  - ◘ Blood pressure, heart rate, salivation
  - ◘ Excitement, fear responses

Classical Conditioning

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- ☐ Learning fastest if:
    - ◘ The two stimuli are always paired together, and never not together
- ☐ The neutral stimulus becomes a perfect predictor
    - ◘ Cat carrier is inherently neutral
    - ◘ Only time cat put in carrier is to go to vet
        - ▪ Trip to vet is frightening
    - ◘ Cat carrier predicts trip to vet
        - ▪ Cat carrier elicits fear

Chzlolcats.wordpress.com

Classical Conditioning

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- ☐ ALWAYS OCCURRING! Whether the handler intends it or not
- ☐ Animal will associate a situation with the experience they had (vet office)
- ☐ Sometimes, only takes one exposure to the paired stimuli
- ☐ Classical conditioning can interfere with operant conditioning

Operant Conditioning

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- ☐ Operant Conditioning
    - ◘ B.F. Skinner
    - ◘ Trial and Error
        - ▪ Form associations between stimuli and responses
        - ▪ Learning that a particular behavior has a particular consequence
        - ▪ Associate responses with stimuli that are not naturally associated with each other
        - ▪ Create behaviors that are not naturally occurring

Law of Effect

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- □ **Behavior** resulting in pleasant consequence **strengthened**/ Increases in frequency

- □ **Behavior** resulting in **no consequence** is weakened/ decreases in frequency

- □ **Behavior** resulting in **unpleasant consequence** weakened/ decreases in frequency more quickly*

- □ *Interpretation of consequence based on **cat's** perception, not ours!*

Operant Conditioning:
Important Definitions

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- □ Reinforcement
  - ▪ Anything that **increases** the probability of the behavior occurring
- □ Punishment
  - ▪ Anything that **decreases** the probability of the behavior occurring
- □ Positive
  - ▪ **Add** something to situation
- □ Negative
  - ▪ **Take** something away from situation

Cool. I just sold the cats on EBAY.

Operant Conditioning:
Important Definitions

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	Positive	Negative
Reinforcement	Food presented	Threat retreats
Punishment	Shout or throw something	Attention withdrawn

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Definitions

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Positive Punishment

≠

Negative Reinforcement

≠

Negative Punishment

Need to know difference between these!

Aversive Conditioning

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- ☐ Negative reinforcement
  - ◻ Creates very strong behaviors
  - ◻ Cruel method of training new behavior
  - ◻ Escape conditioning
    - ▪ Learning that a behavior can terminate an aversive stimulus
  - ◻ Avoidance conditioning
    - ▪ Learning to avoid an aversive stimulus

Aversive Conditioning

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- ☐ Positive Punishment
- ☐ Requirements for correct use:
  - ◻ Motivation strength
  - ◻ Contingency
  - ◻ Intensity
  - ◻ Timing
  - ◻ Alternative

Anyone seen the

BAD CAT

"BAD HUMAN" bottle?

ICANHASCHEEZBURGER.COM

Aversive Conditioning

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- □ Positive punishment
- □ Basic facts
  - ◻ Complex technique that is difficult to use and therefore often ineffective in practice
  - ◻ Poorly understood and overused
  - ◻ If effective, will work within 3-4 times
  - ◻ If taking longer than that, NOT WORKING
    - ▪ Probably being applied incorrectly
    - ▪ So let's try something else ☺

Aversive Conditioning

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- □ Side effects
- □ Inhibits learning, no longer offers behaviors
- □ Exacerbates many behavior problems
  - ◻ Fear
  - ◻ Aggression- Dangerous!
  - ◻ Conflict and anxiety related problems
- □ Unintended classically conditioned associations made
- □ Makes handler focus on bad behavior
  - ◻ Doesn't teach appropriate behavior
- □ Damages human- animal bond

Operant Conditioning

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- □ Steps for success with positive reinforcement:
  - ◻ Prompting and fading (free-shaping) or capturing (rewarding spontaneous behavior)
  - ◻ Shaping (successive approximation)
  - ◻ Continuous reinforcement (fast learning)
  - ◻ Discrimination training (put on cue/ command)
  - ◻ Over-learning (practice)
  - ◻ Intermittent reinforcement (persistent behavior)

Capturing

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- ☐ Rewarding spontaneous behavior
  - ☐ Wait for a behavior that resembles the target behavior and reward it!
  - ☐ Clicker training well suited for this
  - ☐ Great option for aggressive or fearful animals
    - ■ Hands off training

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Shaping

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- ☐ Training by rewarding successive approximations of the target behavior
  - ☐ Break it down into steps
  - ☐ Takes advantage of variability of behavior
  - ☐ Gradually become more discriminating in what you reward (increase criteria)
    - ■ Small steps
    - ■ If animal isn't performing the desired behavior, go back a step and proceed with more smaller steps
  - ☐ Reward only the best (most accurate) behavior
- ☐ Need a training plan

But How Do You Reward A Cat?

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- ☐ Toys
- ☐ Treats
- ☐ Petting, brushing
- ☐ Preference testing

Reward Preference Testing

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Outline

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- ☐ Types of learning
  - ☐ Habituation, classical conditioning, operant conditioning
  - ☐ Quadrants of operant conditioning
    - ■ Requirements for effective use
    - ■ Welfare implications
- ☐ **Behavior modification**
  - ☐ Counter conditioning
  - ☐ Response substitution
  - ☐ Systematic desensitization
- ☐ How to put together a behavior modification plan

3 Behavior Modification Techniques

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- ☐ **Behavior modification, the basics:**
  - ☐ **(Classical) Counter Conditioning**
  - ☐ **Response Substitution**
  - ☐ **Systematic Desensitization**

(Classical) Counter Conditioning

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- □ Use classical conditioning to change the meaning of a previously conditioned stimulus
- □ Pair previously fear evoking (but harmless) stimulus with:
  - ▫ Food, play, relaxation
- □ Handling
  - ▫ You're not scary, you're the treat person!!!
    - ▪ Touch leg, treat
    - ▪ Touch ear, treat
    - ▪ Touch tail, treat
    - ▪ Open mouth, treat
    - ▪ Gentle hug, treat
      - ▪ Treats are cheap ☺

Izzy and Steve

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- □ Fear of a person
  - ▫ Steve is "the treat guy"
    - ▪ Steve tosses treats each time he enters the room
    - ▪ Steve prepares meals and feeds Izzy
    - ▪ Steve offers food stuffed toys
  - ▫ Izzy's response
    - ▪ Izzy no longer hisses and swats at him as he enters
    - ▪ Izzy actually will sit near him
    - ▪ Izzy beginning to offer eye contact on cue

Pxleyes.com

Other Applications- (Classical) Counter Conditioning

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- □ Frightening noises
- □ Fear- vet care, handling, people
- □ Introductions to other animals
  - ▫ New housemates
  - ▫ Group housing

why don't they talk to me!!!
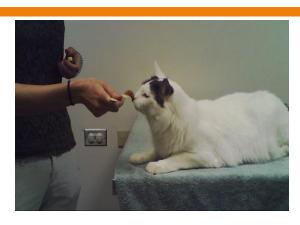
Response Substitution

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- ☐ Ask for a behavior that is incompatible with the undesired behavior and reward that instead
- ☐ Also referred to as:
  - ☐ Operant counter conditioning
  - ☐ Differential reinforcement of alternate/ incompatible/ other behavior (DRA, DRI, DRO)
- ☐ Example:
  - ☐ Cat likely to attack your leg as you approach
  - ☐ Ask cat to fetch toy
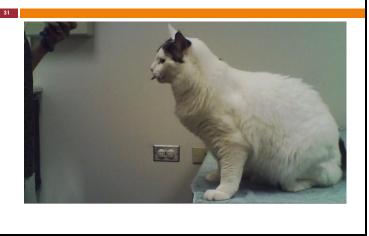 - ☐ Cat is rewarded for chasing toy instead

Law of Effect in Shelters

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- ☐ Frustration
  - ☐ Motivated to perform a behavior without an appropriate outlet
  - ☐ Results in
    - ■ High arousal, lack of impulse control
    - ■ Swatting, biting while playing
    - ■ Acute conflict behaviors
      - ■ Vocalization
    - ■ Aggression
      - ■ Especially with opening cage door, putting away
  - ☐ Very difficult to ignore some of these unwanted behaviors
    - ■ Easily inadvertently reinforced
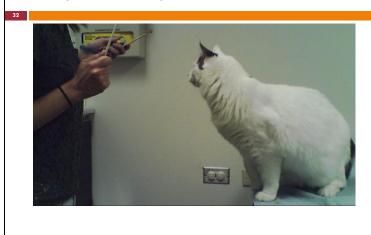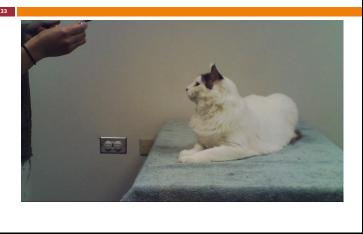
Rosalindgardner.com

Charging the Clicker

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Target Training- Capturing

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Target Training on Cue

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Target Training Nail Clippers

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Other Applications- Response Substitution, Operant Conditioning

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- ☐ Go to place/ carrier
- ☐ Sit
- ☐ Eye contact
- ☐ Cute tricks
  - ☐ Give Paw
  - ☐ Fetch
  - ☐ Wave
  - ☐ Spin
- ☐ Excellent form of enrichment

www.happycatshaven.org

To Carrier on Cue

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Systematic Desensitization and Counter Conditioning (DS/CC)

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- ☐ Controlled and gradual exposure to a situation/ trigger in incrementally increasing levels of intensity while cat remains *relaxed*
  - ☐ Not just non-reactive
- ☐ Paired often with a reward for remaining relaxed
  - ☐ Classical counter conditioning
- ☐ Paired often with another previously learned cue
  - ☐ Operant counter conditioning

Systematic Desensitization

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- □ Requirements:
  - ◘ Must be able to identify stimulus/ stimuli
  - ◘ Be able to reproduce stimulus
  - ◘ Control stimulus intensity
  - ◘ Determine a low enough intensity (starting point) where animal not fearful/ minimal fear
  - ◘ Be able to avoid exposure to naturally occurring stimulus while working on SD

Flooding

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- □ Definition:
  - ◘ Prolonged exposure to full intensity fear evoking but harmless stimulus
  - ◘ Animal prevented from leaving/ escaping
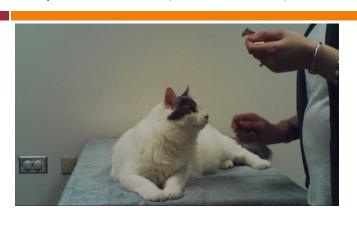 - ◘ Only when animal is relaxed is stimulus removed

Flooding

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- □ Risky
  - ◘ Not reacting does not = relaxed!!!
  - ◘ Time consuming
  - ◘ Remove stimulus too early
    - ▪ Reward fear response
  - ◘ Inhumane
    - ▪ Strong physical and psychological response
- □ Only appropriate for mild fear response to harmless stimuli

(DS/CC) Handling Feet Example

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(DS/CC) Trimming Nails Example

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Other Applications- Systematic Desensitization

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- Towels- teach towels aren't scary, then can use them during restraint
  - Much lower stress
- Carrier training
- Brushing
- Ear cleaning

Weheartit.com
vrccluckytalks.blogspot.com
www.providencejournal.com

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    - ■ Requirements for effective use
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- ☐ **How to put together a behavior modification plan**

Putting it All Together

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- ☐ Management
  - ☐ Safety
  - ☐ Prevent practicing wrong behavior
- ☐ Relationship building
- ☐ Tools, foundation cues
- ☐ Behavior modification exercise

Management

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- ☐ Safety
  - ☐ Manage environment
    - ■ Hiding spots
    - ■ Strategic housing
    - ■ High frustration might do better in a lower human traffic area
    - ■ Fearful cats best in quiet area
      - ■ No dogs barking, low traffic, away from other stressed cats (if possible)
    - ■ Foster?

Management

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- ☐ Prevent practicing wrong behavior
- ☐ Avoid known triggers
  - ☐ Don't pet for long periods
  - ☐ Avoid play with hands
  - ☐ Give cat something to occupy/ distract when plan to put back in housing/ walk away
  - ☐ If frightened or showing aggression, leave cat alone
    - ■ Time to diffuse, settle, calm

"Don't blame me. You're the one who gave me all the yarn."
CutePicturesOfCats.com

Relationship Building

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- ☐ In shelter
  - ☐ Familiar person
  - ☐ Patient, non-threatening
  - ☐ Go slow
- ☐ No Punishment or Negative Reinforcement
- ☐ No Flooding
- ☐ Positive consistent interactions only
  - ☐ Helps to ask for cue, if respond, can reward and continue interaction
  - ☐ If no response, leave cat alone- remain neutral

Tools, Foundation Behaviors

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- ☐ Place
  - ☐ A mat, bed or other designated location for that pet to "go to..."
- ☐ Reward marker
  - ☐ Clicker
  - ☐ Unique word
- ☐ Target
  - ☐ Pencil
  - ☐ Chopstick
- ☐ "Touch", "Sit", "Go to place", "Come"

Conclusions

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- □ Cats can learn
  - ◘ Same types of learning as other species
- □ Cats can be trained
  - ◘ Positive reinforcement most humane and safe
- □ Behavior can be modified
  - ◘ Management to avoid unwanted behavior
  - ◘ Reinforce desired behavior
- □ Training and behavior modification not only help to address an unwanted behavior but also act as a source of enrichment and can increase adoption and success in a new home

References/ Resources

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- □ Rochlitz, I. The Welfare of Cats. Springer 2005
- □ Casey, R. Ch. 9 Management problems in cats. In: Horwitz, DF & Mills, DS, eds. BSAVA Manual of Canine and Feline Behavioural Medicine, 2nd ed. BSAVA 2002
- □ Training
  - ◘ http://www.clickertraining.com/cat-training?source=navbar
- □ Shelter Behavior
  - ◘ http://www.maddiesfund.org/Maddies_Institute/Articles/The_Behavioral_Implications_of_Long_Term.html
- □ CATalyst Council catalystcouncil.org
- □ Indoor Cat Initiative http://indoorpet.osu.edu/cats/

Thank You for Your Time!

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- □ Sara L. Bennett, DVM, MS, DACVB
  - ◘ VCA Behavior Service- Chicago, IL
    - ◘ vcabehavior@vca.com
    - ◘ Sara.Bennett@vca.com
  - ◘ VCA Berwyn Animal Hospital- Berwyn, IL
    - ◘ P: 708-749-4200 F: 708-749-4269