BEHAVIOR MODIFICATION FOR CATS IN SHELTERS AND FOSTER HOMES

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

Outline

- 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

- 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

- 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

**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

---

### Classical Conditioning

**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**

- 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

**Classical Conditioning**

- 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**

- 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
Behavior Modification for Cats in Shelters and Foster Homes

Law of Effect

- **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

- **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

Operant Conditioning:
Important Definitions

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reinforcement</strong></td>
<td></td>
</tr>
<tr>
<td>Food presented</td>
<td>Threat retreats</td>
</tr>
<tr>
<td><strong>Punishment</strong></td>
<td></td>
</tr>
<tr>
<td>Shout or throw</td>
<td>Attention withdrawn</td>
</tr>
</tbody>
</table>

A.U. Luescher
Definitions

Positive Punishment ≠ Negative Reinforcement ≠ Negative Punishment

Need to know difference between these!

Aversive Conditioning

- 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

- Positive Punishment
- Requirements for correct use:
  - Motivation strength
  - Contingency
  - Intensity
  - Timing
  - Alternative
Aversive Conditioning

- 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

- 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

- 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

- 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

Shaping

- 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?

- Toys
- Treats
- Petting, brushing
- Preference testing
Behavior Modification for Cats in Shelters and Foster Homes

Reward Preference Testing

Outline

- 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

- Behavior modification, the basics:
  - (Classical) Counter Conditioning
  - Response Substitution
  - Systematic Desensitization
Behavior Modification for Cats in Shelters and Foster Homes

(classical) Counter Conditioning

- 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

- 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

Other Applications - (classical) Counter Conditioning

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

- 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

- 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

Charging the Clicker
Other Applications - Response Substitution, Operant Conditioning

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

Systematic Desensitization and Counter Conditioning (DS/CC)

- 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

- 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

- 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

- 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
**Behavior Modification for Cats in Shelters and Foster Homes**

**October 23, 2014**

---

### (DS/CC) Handling Feet Example

---

### (DS/CC) Trimming Nails Example

---

### Other Applications - Systematic Desensitization

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

---

Walgreens.com
vroduskytalks.blogspot.com
www.providencejournal.com
Outline

- 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

Putting it All Together

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

Management

- 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

- 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

Relationship Building

- 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

- 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

- 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

- 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
- 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!

- 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