Unleashing Humane Training and Enrichment Education through a Virtual Companion Animal Behavior Clinic

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Background and Objectives

- Previous literature explains the significance of lab experience with live animals. With the supplementation of note-taking, lectures, and reading material, learning labs have proven to be successful in mastering course concepts (Branch & Malagodi, 1981).
- Animal labs can offer students of behavior analysis a unique, hands-on learning experiences. However, COVID-19 restrictions - while put in place to protect both human and animal health - have presented challenges to traditional brick-and-mortar lab classes.
- During the Fall 2020 semester, the Human-Animal Wellness Collaboratory (HAWC) conducted a pilot study to evaluate the use of a virtual Applied Animal Behavior Research Clinic as a method to teach undergraduate students humane training and education techniques based on behavior analytic principles with companion animal dogs and cats remotely. Training sessions included instruction, modeling, and rehearsal for modules on habituation, Pavlovian conditioning, preference assessments and reinforcer assessments, matching law, shaping, and environmental enrichment techniques.
- We evaluated whether having students work with companion dogs and cats were feasible pedagogical tools for demonstrating psychological principles and concepts in a 300-level psychology of learning course. The use of live animals has the potential to create a unique, hands-on educational experience for undergraduate psychology students.

Participants, Subjects & Setting

A total of 7 dogs and 4 cats of various breeds served as subjects throughout the semester-long course. All subjects went through the procedures in a series of weekly 30 min virtual mini-labs with their owners, who were also students in the Psychology of Learning course during the Fall 2020 semester. All procedures were conducted in a familiar area of the subjects' homes with a supervising professor present throughout the mini-labs.

*Figure 1*a –k. Dog and cat subjects volunteered by their owners for the Applied Animal Behavior Research Clinic during the Fall 2020 Psychology of Learning course. From top left, a) Coal, b) Bonnie, c) Clyde, d) Chloe, e) Dakota, f) Riley, g) Ben, h) Tucker, i) Tucker, j) Gerdi, and k) Rylee.

Specific Method and Results

Labs 1 & 2. Species Knowledge Assessment & Observing Naturalistic Behaviors, Operational Definitions, and Acclimation

100% of students passed (80% or above) the dog and cat background research assessments, successfully acclimated their dogs and cats to the training context, and operationally defined species-typical behaviors based on direct observations.

Lab 3 &4. The Basics of Pavlovian Conditioning and Habituation & Counterconditioning

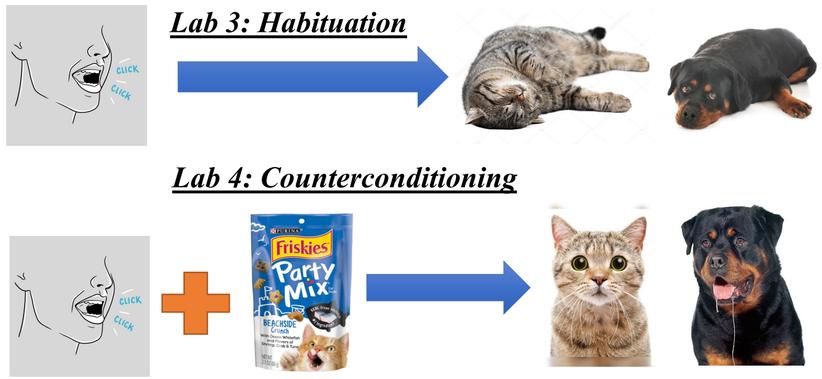


Figure 2a and b. General procedure for habituation and counterconditioning labs. Habituation involved presenting the startle stimulus (tongue pop) 10 trials with 30 s inter-trial intervals until it did not elicit a startle response. Counterconditioning involved presenting the neutral stimulus with an unconditioned stimulus (food) for a maximum of 20 trials with 30 s inter-trial intervals. All subjects reached criterion for habituation and counterconditioning within a single 30 min session.

Lab 5 & 6. Assessing Choice, Preference & Reinforcer Efficacy

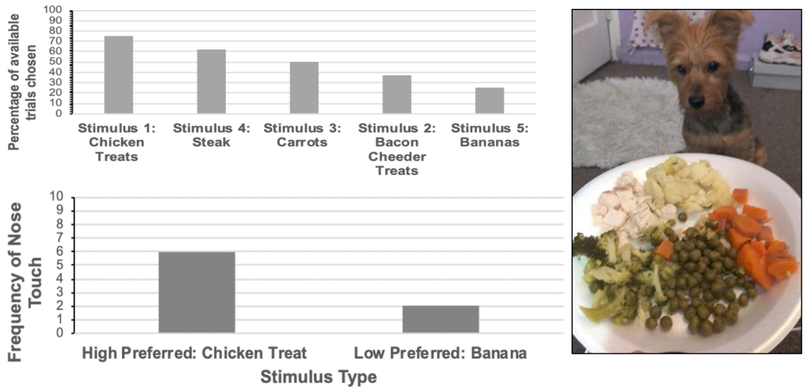


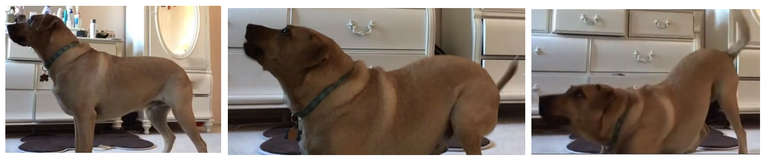
Figure 3 a) Individual results for preference assessment with all food stimuli for dog subject Tucker. *Figure 3 b)* Reinforcer assessment results with high-preferred and low-preferred food items for Tucker. *Figure 4. Example of food stimuli used for dog subject, Gerdi during preference and reinforcer assessments.*

Labs 7-10. Shaping Plan: Measuring and Evaluating Approximations to a Target Behavior

The final four labs of the semester were focused on the students developing, implementing, and evaluating a shaping plan for their dog or cat. Shaping plans were necessarily readjusted based on the performance of the animal during each session. Students were also instructed to monitor their animal's behavior to observe for any indicators of stress or poor welfare. Overall, 4/4 cats achieved their target behavior and 6/7 dogs achieved their target behavior within the four shaping labs (within 2 hours total over 4 weeks).

Example of Shaping Plan & Behavior Approximations for Bowing

1. Stand in a fixed place
2. Look down at floor
3. Look down at floor with head in line with shoulders
4. Lower head with nose within 6 inches of ground
5. Shoulders angle backward with back legs fully tucked
7. Front portion of body beginning to lower with front legs simultaneously stretching outward
8. Legs fully stretched out with elbows touching ground



A (Approximation 1) **B (Approximation 5)** **C (Approximation 10)**

Figure 5a-c. Progression of Tucker's Shaping Plan for bowing on cue.

Discussion

- Overall, the use of companion dogs and cats via a virtual animal lab were successful in demonstrating Pavlovian and operant conditioning concepts to students in a 300-level Psychology of Learning course. Student self-reports indicated that they found the experience of training animals educational and enjoyable.
- In addition, working with companion animals that are more accessible in our society allows for students to learn and participate directly about science-based training and care practices for improved animal welfare and human-animal interactions.
- Future directions to evaluate the efficacy of the virtual clinic on additional student learning outcomes as well as generalization and maintenance of skill acquisition are needed.

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Please direct all feedback to: Dr. Lindsay Mehrkam, Monmouth University; lmehrkam@monmouth.edu