Effect of Conditioned Reinforcer Type on Acquisition of Targeting Behavior in Canis familiaris: Clicking versus Vocalizing

Kristine A. Funk, Jessica L. Pernsteiner, & Daniel D. Holt
Psychology Department, University of Wisconsin-Eau Claire

Introduction
The earliest shaping and modification of animal behavior possibly occurred nearly 135,000 years ago (Udell & Wynne, 2008; Lindsay, 2001). Since then, the ancient Egyptians, Greeks, Romans and Chinese developed training methods that crudely employed reinforcement and punishment to train animals to hunt, herd and perform various behaviors (Lindsay, 2001).

In the 20th century B.F. Skinner converted haphazard animal training into a scientifically based process called operant conditioning (Peterson, 2004). Skinner also discovered that delivering a reinforcer to animals at the exact moment a desired behavior was performed was critical. To solve the problem created by delays in delivery of reinforcers Skinner proposed using a stimulus that could be “conditioned” as a reinforcer (CR) to signal to an animal that a food reinforcer was coming. In animal training the CR has become widely accepted as an indispensable tool for shaping behaviors (Pryor, 1999; Spector, 1999). Static sounds have traditionally been used, yet only anecdotal evidence exists to support using a static sound over a verbal CR (Pryor, 1999; Pryor, 2005).

The current study tested the hypothesis that dogs will learn faster when a “Click” CR is used than when a verbal word, “Good”, CR is used in training dogs to touch and follow a target. Figure 4

Method

Dogs
8 mix-breed dogs, between the ages of 4 months and 2 years old participated in this study. Dogs were selected on a rolling basis and assigned to a predetermined condition.

Setting & Materials
• Sessions were conducted at a local humane association.
• Hotdogs were used as primary reinforcers.
• A target pole and standard clicker were also used in sessions.

Establishing Conditioned Reinforcers
• Stimuli established as CRs were either a click or the word “Good”.
• To establish the CR, dogs experienced 2 sessions of 25 pairings with the assigned stimulus and a primary reinforcer (hotdog).

Training Sessions
• For the first 10 trials only, the trainer touched each dog’s nose with the target and delivered the assigned CR, then primary reinforcer (Figure 1).
• Dogs were then trained to touch and follow the target using shaping procedures and three defined approximations (Figures 2, 3, & 4).
• Approximations completed successfully within 3 seconds were recorded as correct.
• Percent correct for each trial and number of trials required for each dog to obtain 80 percent correct or higher were measured for each approximation.

Approximation: 1
Dog moves 3-6 inches to touch target.

Approximation: 2
Dog moves ~1 ft. to touch target.

Approximation: 3
Dog moves 1 ft. to touch and follow target 2 ft.

Results
• 4 dogs were trained using “Good” as a CR and 4 dogs were trained using “Click” as a CR. Only 2 dogs from each condition completed all approximations.

• The proposed hypothesis that dogs will learn faster when a “Click” CR is used than when a verbal word, “Good”, CR is used in training dogs to touch and follow a target was not supported.

• Visual analysis indicates there was no difference in the pattern or rate of acquisition of targeting behavior between dogs in the “Good” CR condition and dogs in the “Click” CR condition.

• The mean number of trials taken for all dogs to complete an approximation was calculated for 16 percent of sessions with 99 percent agreement.

Figure 4. Number of trials taken to achieve 80 percent correct or higher in each approximation of targeting and following behavior for dogs trained using either a “Click” or “Good” as a CR. The mean number of trials taken for all dogs to complete each approximation is indicated above each group of bars.

Discussion

Implications
• Results indicate that a verbal CR may be equally effective in training basic behaviors as a static CR.
• These data would suggest that rate of acquisition and pattern of correct responses in dogs learning targeting behavior will be the same regardless of CR type used in shaping.

Limitations
• Limited information about subject history, age, and breed.
• Training setting presented uncontrollable distractions and between session events (e.g., other dogs and potential adopters).

Future Research
• Include a condition that uses no CR to shape targeting behavior.
• Investigate for differences in effectiveness of CR type when shaping more complex behaviors.
• Investigate in trainer timing accuracy when using different CR types to shape behaviors.


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