Shaping New Behaviors

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A behavior can't be reinforced until it occurs, which could present a problem when one needs to teach a new behavior to a parrot. Waiting for the behavior to occur by happenstance and capturing it with reinforcement might be an option but some behaviors occur too infrequently or not at all. The solution to this problem is known as shaping, technically called differential reinforcement of successive approximations. Shaping is the procedure of reinforcing a graduated sequence of subtle changes toward the final behavior, starting with the closest response the bird already does. Below are two examples of shaping plans, one for teaching independent toy play and the other, bathing. The reinforcers listed in each plan and the specific approximations are just examples and need to be customized according to the preferences and comfort level of each individual bird. Shaping, as with all behavior change programs, is a study of one.

Shaping Plan 1 Playing with Toys

1. Final Behavior: Independent toy play.
2. Closest behavior bird already does: Looks at toy.

3. Reinforcer for each approximation that meets the criterion: Safflower seeds and praise.
4. Tentative approximations:
    a. Look at toy
    b. Move toward toy
    c. Touch beak to toy
    d. Pick up toy with beak
    e. Touch foot to toy
    f. Hold toy with foot while manipulated with beak
    g. Repeat previous approximation for longer durations

Shaping Plan 2 Triggering the Bathing Response

1. Final behavior: Step into shallow water dish.
2. Initial behavior: Looks at water dish.
3. Reinforcers for each approximation that meets criterion: Applause and praise.
4. Tentative steps:
    a. Look at dish
    b. Face dish
    c. Take a step toward dish
    d. Take two steps toward dish
    e. Walk up to dish
    f. Look at water in dish

g. Lift foot next to dish

h. Touch water in dish with foot

i. Step into dish with one foot

j. Step into dish with both feet

k. Walk around in dish

How Shaping Works

Implementing a shaping procedure requires noticing the subtle, natural variation in the way behaviors are performed within a response class (called an operant class). For example, a parrot naturally lifts its foot a little differently every time (left or right; high or low; fast or slow, with toe movement or without, etc.). Typically this variation is unimportant and it is simply classified as one behavior, or operant class, called “lifting a foot”. However, this subtle variation is exactly what allows us to shape a parrot to wave with the final criterion being a foot lifted fast, held high and toes opened and closed.

Shaping starts by reinforcing the first approximation every time it is offered, until it is performed without hesitation. Next, an even closer approximation is reinforced, at which time reinforcement for the first approximation is withheld. Once the second approximation is performed without hesitation, an even closer approximation

is reinforced while withholding reinforcement for all previous approximations. In this way, the criterion for reinforcement is gradually shifted, incrementally closer and closer to the target behavior. Finally, every instance of the target behavior is reinforced.

If the learner experiences difficulty at any criterion, the trainer back ups and repeats the previous successful step, or the trainer can reinforce even smaller approximations. Once an approximation is performed without hesitation, more variability can be generated from which to select the next approximation by switching from reinforcing every response to withholding reinforcement which will produce a super effort, or burst of behavior, to earn reinforcement. Ultimately, it is the parrot who determines the exact sequence and pace of the shaping plan. This is where sensitivity and experience is required on the part of the trainer to observe the nuances of behavior.

Adding the Cue

With shaping toy play and bathing, the toys and water dish are the antecedents that set the occasion for the respective behaviors. For other behaviors, a cue from the trainer (also called a discriminative stimulus or $S^{D,}$ pronounced ess-dee) can be added to signal the behavior. To add a cue, start by introducing it while the behavior is

occurring. Next, gradually deliver the cue earlier and earlier until it is signaled *before* the behavior. Last, reinforce only cued instances of the behavior and ignore all others. This will establish the relationship between the cue and behavior, called stimulus control. When a behavior is said to be under stimulus control, it is emitted after the cue and rarely or not at all when the cue is absent.

Shaping Touch-to-Target

Regarding cats, Catherine Crawmer (2001) describes the technique known as targeting this way:

> "If we could get a cat to touch his nose to a stick on cue what could we do with that behavior? The answer is a question: What couldn't we do with it?" (p. 57)

Targeting is the behavior of touching a body part (e.g. beak, wing, or foot) to a designated object or mark and it is taught easily to parrots with shaping. By teaching birds how to target the end of a wooden dowel with their beaks, caretakers can predict and control the bird's movements. For example, an untamed bird can be taught to target a stick while inside its cage, enabling the caretaker to safely increase interaction with the bird, deliver positive reinforcement and establish two-way communication. A bird that refuses to come off the top of his cage can be

targeted to a perch inside it; a wary bird can be targeted into a travel crate for veterinary visits; and an aggressive bird can be quickly redirected to the target to distract it from biting. Also, enrichment behaviors can be taught with targeting such as turning in a circle, climbing up and down ladders, and ringing a bell. Target training is an important basic skill for all companion parrots as it opens the door to all sorts of positive reinforcement and management opportunities.

The Sky's the Limit

With shaping we can theoretically train any behavior within the biological constraints of the learner. Husbandry, medical and enrichment behaviors can be shaped to reduce stress and increase physical and mental stimulation. Birds can learn such behaviors as raising each foot for nail trims, going in and out of crates, staying calm wrapped in towels, flying to designated perches, and playing basketball. Shaping can also be used to change different dimensions of existing behaviors such as duration, rate, intensity, topography, and response time.

Not surprisingly, problem behaviors are often unwittingly shaped as well. We inadvertently teach our birds to bite harder, scream louder and chase faster through the subtle mechanisms of shaping. For better and

for worse then, shaping is endlessly applicable to teaching captive parrots, making it the sharpest of all training tools. Its uses are limited only by one’s imagination and commitment to learning how to use it well.