

How Parrots Learn to Behave

Phoebe Greene Linden, SBBF, California

S.G. Friedman, Ph.D., Utah State University

Published in Bird Talk, May 2003

“Please, come look at our bird! He does the funniest things before he comes out of his cage. We need to know if all conures act like Marty.” The two young girls, Marty’s caretakers, were particularly keen to have us see Marty’s antics. So we watch the bright little blue-crowned conure (*Aratinga acuticaudata*) as he scampered around his large cage. When Marty reached the top of his cage, the girls began an accurate recitation of his actions.

“Watch, watch,” they told us, but our eyes are already fixed on the active bird which paused momentarily to make sure his audience was attentive. “First,” the girls told us, “he climbs onto his swing, see? Then he swings over and grabs the cage bars, then he slides down to his water bowl.” True to their words, Marty did exactly that. Once at the water bowl, he dunked his head, shook it, and the girls squealed with glee. “Yes, yes, that’s what he does, he splashes us! Now watch, he goes to his bell and rings it,” Marty yanked the bell, “then he sticks his foot out for us to touch.” Out came the little guy’s foot, which they softly touched before he pulled it back in. Then he headed quickly to the door of his cage.

“Now he wants out,” they explain, and the little guy hopped onto an offered hand. “Do all conures do this?” they ask. “Is he normal?” “What is he doing?” Their questions tumbled out. “Why do you think Marty acts this way?”

Marty’s Behavior

While Marty preened his pretty tail, we assure them, no, not all conures act this way, but Marty certainly did. Not all conures perform as Marty like this because Marty’s actions are not related to innate behavior common to all members of his species. His behaviors are the result of learning, which results from his individual experiences living with his girls.

We told them his actions are “normal” for a very smart little parrot with some very enthusiastic teachers. “But we didn’t train him to do any of this,” they protested. The training has been mutual, we explained: *Marty* has trained *them* to react enthusiastically to his sequence of behaviors and *their* positive reinforcement of *his* actions has trained *him* to repeat these actions. Marty has learned that, after all this fun in his cage, he then receives the best reward of all – valued time outside his cage.

Marty’s training is beneficial and fun. After all, why get out of the cage like a boring “regular” bird does when you can splash your caregivers and make them squeal with delight by spicing up the routine? The science of behavior, called behavior analysis, tells

us Marty acts this way because the girls' responses are following each of his behaviors are reinforcing to him. As is often the case, the girls taught Marty to behave in complex ways without even realizing it. Many parrot behaviors are inadvertently taught to them.

Unfortunately, this is also true with many unwanted behaviors, as well. Even small reactions after a behavior, such as hand-wringing, muttering and expressions of concern, can reinforce the behaviors, without any awareness on our part at all. The more we realize how our responses influence our birds' behavior, the more we can reinforce those things we want them to do more and ignore those things we want them to do less.

What is reinforcement, Really?

When we travel around the country to speak to parrot caregivers, we talk a lot about positive reinforcement and negative reinforcement and we've seen how easily the terms are misunderstood. After all, the words "positive" and reinforcement say the same thing twice, and don't the words "negative" and reinforcement have exactly the opposite meanings? Well, we can't argue with that logic, but these are scientific words with very particular meaning. If you know the meanings of these terms well, you will use them more deliberately and effectively.

A reinforcer is anything that immediately follows a behavior that serves to increase the frequency of the behavior in the future. Reinforcement is the process of delivering reinforcers.

As you can see, a reinforcer has two characteristics:

- First, it is something that immediately follows a behavior. Therefore, reinforcers are a special type of feedback or consequence.
- Second, reinforcers increase the probability that the behavior they follow will be repeated in the future.

Parrots learn from feedback in the form of consequence in the form of consequences, just like humans. They experience consequences of their behavior and decide whether to repeat it or modify it in the future. Just like us, parrots strive to make their behavior "work" according to their own perception of what "works" means. The girls' squeals of delight and gentle touches followed each of Marty's free-spirited antics, and the fact that he repeats these behaviors daily tells us that these consequences function as reinforcers for Marty's behavior.

When you think about it, reinforcers can either be added (+) to a situation immediately following a behavior or taken away (-). For example, when Marty pushes his little toes through his cage bars, the girls added a gentle touch. This addition to Marty's experience, their touch, is a positive (+) reinforcer. We know that because he continues to offer his foot to them, and their touch is an immediate consequence. Although positive reinforcers tend to be things individuals want to get, the word positive means a consequence was added.

An example of negative (-) reinforcement is when a bird steps up to get away from a towel. The bird steps up, and the towel is taken away.

The probability that the behaviors will be performed again in the future was increased in both cases by positive (something added following the behavior) or negative reinforcement (something taken away after the behavior).

What other examples of positive and negative reinforcement can you think of? When you answer your bird's call, that's positive reinforcement: Something is added (your call) after the behavior (the bird's call), which increases the frequency of the behavior (the bird's call) in the future. When you add a special treat to the cage bowl after your bird goes into its cage, that positive reinforcement too.

Alternatively, when your bird steps onto your hand to avoid being pushed by your finger, that's negative reinforcement: Something is taken away (your pushing finger) after the behavior (stepping up), which increases the frequency of the behavior (stepping up) in the future.

When your bird bites more to avoid being petted, that's negative reinforcement too. The solution is not to force your bird to be petted in order to show it its bites don't matter. Rather, use positive reinforcement to teach it that your touch is a reinforcer by pairing your touch with other things it already finds reinforcing, such as kind words or a treat food. When you learn to use positive reinforcement effectively, force needn't be used to teach any behavior.

Three Fundamental Behavior Principles

All behaviors produce consequences of one kind or another. When we behave, the environment always "answers" with some feedback to inform us that the behavior worked toward some desired end, or that the behavior needs to be eliminated or modified in the future. This is how we use experience to learn, and this process works similarly for all animals, including our companion parrots.

As parrot caregivers, we control many aspects of the environment that provide feedback to our birds. Behavior analysis has identified three basic laws of behavior that relate to understanding how to arrange our birds' environments, including our reactions to them, to help them behave in successful ways.

1. Behavior has function.

It was Charles Darwin (1859) who first theorized natural selection as the process by which evolution produces genetic changes over generations. These changes function to improve a species' survival in the long run.

Burrhus Frederic Skinner (1938) took that theory further when he demonstrated in his laboratory that learned behaviors have function too. Since those early experiments, many psychologists (behavior analysts) and biologists (ethologists) have demonstrated that

learning is the process by which each individual changes his/her behavior to meet life's ever-changing circumstances.

The ability to learn functional behavior by experiencing consequences improves our survival during the short-run of an individual's lifetime. This is true for all animals, including our parrots. They are biologically prepared to learn.

One key to solving behavior problems then is to consider the function of any problem behavior. Of what value to the bird is the behavior? What consequence does performing the behavior produce? How can that function be preserved but with a more desirable behavior?

In Marty's case, swinging, sliding, splashing, bell ringing, and foot wiggling all function to get lots of high-energy attention from the girls and freedom from his cage. From charming behaviors like Marty's to exasperating behaviors like chronic screaming, the function of any behavior can be found in the consequence that performing the behavior produces. Understanding that behavior has function (and does not just pop out of our birds willy-nilly, with neither rhyme nor reason) will greatly improve the way we interact with our birds.

2. Future behavior is related to past consequences.

Not all parrots would find soprano squeals or having their toes touched reinforcing the way Marty does. Reinforcers are a highly individual matter, and it is the future behavior of our bird that tells us what is reinforcing.

The best prediction of future behavior is past consequences. If a behavior continues to be repeated, something in the environment is reinforced if the last time it was displayed, including "bootleg" reinforcers from other birds or pets, children, or nature's natural reinforcers (like scratching an itch).

Regardless of what we think about the value of any particular behavior or the consequences we provide, the function the behavior has to the bird dictates whether or not the behavior will be performed again in the same way in the future. That is equally true for behavior caregivers consider wanted and unwanted.

For example, a bird will scream or talk in quiet tones depending entirely on the consequence the behavior produced the last time it screamed or stayed quiet. Too often, playing quietly yields nothing, but screaming gets everyone running. The behavior that produces the greatest reinforcement will be the behavior the bird chooses to display more in the future. With a clear understanding that past consequences predict future behavior, you can reduce screaming by reinforcing talking; reduce biting by heeding flashing eyes of warning; replace lunging by reinforcing perching.

3. To change behavior, change the environment.

Behavior is what an animal *does*, not what an animal *is*. Labels like "*is aggressive*," "*is spoiled*" and "*is well-behaved*" do not tell us the bird is lunging, refusing to go into its

cage or willingly goes to strangers. We can't directly change aggression, spoiledness, or maintain good behavior because those labels have no tangible for,; however, we can change specific behaviors. Also, "is" labels can be detrimental when trying to understand our parrots, because they imply that the source of the behavior is inside the bird rather than the relationship between the bird's behavior and the environment.

Yes, the relationship between behavior and the environment is very clear in our daily lives. When we slam the door and the window breaks, we close the door more gently from then on. While behavior is primarily a function of its consequences, the events that occur before a behavior is emitted, called antecedents, also influence how animals behave.

For example, rain facilitates breeding behaviors in birds whose young depend upon fresh foods; sunset facilitates roosting behaviors; and a squawk or raised foot facilitates the intruder bird's retreat. In our homes, the antecedents we provide influence behavior too. An open hand facilitates stepping up; a dish of water facilitates bathing; the phone ringing facilitates a quirky "Ellooo!"

We caregivers should carefully examine the environments we provide for our parrots to make sure that our homes stimulate behaviors conducive to companionship. Whenever these adaptive behaviors are displayed, we must be quick to reinforce them.

When we carefully examine the environment our birds inhabit, it's easy to see that we are not the only factor that influences our parrots' behaviors. Nor does every behavior need modification.

For instance, one of Linden's aviary birds yells out every time a hawk crosses the sky. Once the first bird starts, many follow. We can modify that noise to the degree that we can modify the environment. Sometimes they quiet down when we go outside and show the birds that we see what they see. Other times, we just wait it out – when the hawk soars away, the birds quiet down. Either way, understanding that the source of the behavior is in the environment (including our own bodies) helps empower us to make wiser choices to work with a behavior or accept it as it is and change our expectations instead.

In this way, we are all part of one another's environment. No parrot caretaker is an island: Our birds have the power to influence our behavior too. The way in which our birds influence us should be examined in the same way we examine our influence on them.

However, as the designator trustee of materials and education, humans are responsible for the outcomes. Food, lighting, showers, sleep and household activity levels all influence behavior. And the more adept we are at managing the environments our parrots inhabit, the more effectively we can protect and teach them.

Marty's Future Behavior

A few months after our visit, we called to check on Marty and received a glowing report. Marty has improved his cage exit routine by doing even more behaviors that win adoring

praise. He has an expanded chain of behaviors that he does when his is outside of his cage, too: He climbs a ladder, chases a ball, rolls over and scampers onto the handle of his favorite table-top basket when he is ready for a treat.

For Marty, these behaviors function to get him several valued reinforcers, including enthusiastic attention, physical exercise and mental stimulation, both inside and outside of his cage. The girls' attentive behavior is reinforced by Marty's clever, energetic friendship, as well. Perhaps some other caretaker would describe Marty as demanding, spoiled or manipulative. Focus on the things he does in order to really know Marty and appreciate the relationship he and his girls have developed with positive reinforcement.

When we arrange the environment to reinforce desirable, adaptive behaviors, we rightly change our teaching emphasis from overpowering to empowering and from force to facilitation. This is accomplished best by understanding that behavior is a function of its consequences and its antecedents, many of which can be controlled by us, the caregivers. Given the longevity of human and parrot relationships, the learning path before us is wonderfully winding and long. We make the best use of that path by realizing that between our birds and ourselves, we are all teachers and learners with every interaction.

Ten Ways to Promote Adaptive Behavior

- 1) Describe what your bird does, not what your bird is.
- 2) Identify what you want your bird "to do," instead of "not do."
- 3) Arrange the environment to stimulate activity and mental stimulation with enrichment items.
- 4) Identify what your birds' reinforcers are by observing what it chooses to do.
- 5) Catch you bird being good more time each day than you can count.
- 6) Reinforce behavior you want to see more often
- 7) Ignore behaviors you want to see less often.
- 8) Change what *you* do to change what your bird does.
- 9) Replace force with facilitation – give your bird a reason (consequence) to do what you need it to do.
- 10) Empower – don't overpower – your bird – healthy animals need to be able to affect their environments too.

Words To Know

BEHAVIOR ANALYSIS – The scientific study of learning and behavior.

REINFORCER – Anything that immediately follows a behavior that serves to increase the frequency of that behavior in the future.

REINFORCEMENT – The process of delivering reinforcers.

POSITIVE REINFORCEMENT – When something is added following a behavior to increase it.

NEGATIVE REINFORCEMENT – When something is taken away after a behavior to increase it.

LEARNING – The process by which each individual changes his/her behavior to meet life's ever-changing circumstances.