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Let Me Teach You A Thing Or Two!
The Unwanted Teachings Of Negative Reinforcement

Part 2 of 2

Part one discussed punishment:
Punishment is the process in which a behavior is followed by the presentation or withdrawal of some event and results in a decrease in the rate of the behavior.

This issue discusses negative reinforcement:
Negative reinforcement is the process of ending or avoiding an aversive event by performing a behavior and results in an increase in or maintenance of that behavior.

Negative reinforcement is one of the more difficult behavioral principles to understand. In behavior analysis, negative and positive have "math meanings". Negative means that something is subtracted from the situation. Positive means that something is added to the situation. Reinforcement occurs when an event follows a behavior *and* results in an *increase* in the rate of that behavior. Punishment occurs when an event follows a behavior and results in a *decrease* in the rate of that behavior1[1].

Let's pretend you have a neighbor named Mr. Stodgepot who always comes out to talk to you when you're working in the yard. Unfortunately Mr. Stodgepot is rude. He tells you how badly your house needs painting, how crookedly you edged the grass, how overdue your trees are for trimming. He can always find something wrong with your lawn. It's a real drag to talk with him.

The first couple of times this happens you may suddenly remember a pot you've left boiling on the stove. You go inside the house to terminate his rude comments to you. You go inside, not to turn off the stove, but to turn off the aversive stimulus that is your neighbor. In the future you become more and more likely to go inside when you see this neighbor come outside before you have a chance to experience his aversive comments.

When you see people or animals avoiding something, it's reasonable to start thinking about how negative reinforcement may be at play. The teenager who avoids his parents, the dog who runs under the porch when he sees the training gear come out, the husband who stays out late more and more often with the boys. They're all avoiding something unpleasant. And it's not worthwhile to think about whether they "should" be trying to avoid these things or not. The fact is, they *are* avoiding them, and all you can do is try to change the contingencies2[2].

When we come into contact with aversive events, we try to set up our worlds to avoid that contact in the future. This applies with humans as well as non-human animals. When you pull back your hand from a hot burner on the stove what is actually happening is negative reinforcement. You feel the heat and pull your hand back to stop feeling it, and you're more likely to pull back your hand the next time it feels heat. In the future you avoid coming into contact with the heat by being sure not to put your hand on it when it's turned on. Termination of aversive stimuli, and avoidance of aversive stimuli are the two hallmarks of negative reinforcement.

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Traditional training techniques, whether for people or animals, often rely largely on negative reinforcement. You want your dog to sit so you pull up on his leash and push down on his butt until he caves to relieve the pressure. You want your horse to turn so you yank on a rein attached to a bit in his mouth so he turns his head to relieve the pressure on the tender flesh in his mouth. Quite a few trainers have given up training because their dogs started hiding when it was time to start work. Others have either just provided more pressure, or even just gotten rid of the dogs.

Many breeders have opted not to breed dogs that fall apart under that kind of pressure. The result is that certain breeds have been created that are willing and able to tolerate forceful teaching techniques. Laborador Retrievers fit in this category. Many of them can endure a whole lot of pain and not fall apart. This is only a gift to the dog if he has no alternative but to be born and endure aversive training. But even these dogs can learn with positive reinforcement and you won't end up with the kinds of problems associated with aversive training techniques.

One clicker trainer told me she'd heard of a traditional style trainer turning a dog she herself bred as an agility dog over to a shelter because the dog was too "soft" and wasn't going to win any competitions. The clicker trainer adopted the dog, and with positive reinforcement turned it into a winning competitor… even out-performing the original owner's dogs. This dog wasn't a poor competitor, she just wasn't able to work under the threat of force. It's that way with cats, too. People used to say you can't train cats. You can train cats beautifully with positive reinforcement. My cat is every bit as excited about clicker training as one of my dogs. But if I tried to force him to do certain things, I'd surely end up with a shredded arm or two!

In the last article, I discussed how one big problem with punishment is that it does not teach a learner a preferred behavior to replace the unwanted behavior. Negative reinforcement does teach the animal something to do, but even if you're getting a dog to sit by pulling his collar up, you're also teaching your dog to do things to avoid. And you're conditioning yourself as an entity to be avoided. When you scold your child until he finally mows the lawn, you're getting a chore done, but it's getting done because it gets you off his back.

How much better might it be to set up a system of reinforcement so that lawn mowing becomes a worthwhile task? You mow the lawn and you'll earn an allowance. You do the dishes and you can use the car tonight. You clean your room and I'll rent you and your friends a couple of movies. Manipulation? Only to the degree your boss giving your paycheck is manipulation. We all do things because they are worthwhile to us. Better to create worthwhile conditions where the most worthwhile thing about it is not just getting away from you!

So what do we do instead? Set up situations that make it easy to cooperate, and *positively* reinforce like crazy. Positive reinforcement means something is *added* to the environment following a behavior that makes it more likely that the behavior will recur in the future. That is the gold standard.

Kellie Snider
Editor

3[1] Often people use "negative reinforcement" and "punishment" as interchangeable terms. They are often used to refer to any aversive change in the environment. In Behavior Logic EZine, I'll use them as specific and separate terms as defined in the text of this article. *Editor*
4[2] Contingency is a term used in behavior analysis to indicate a consistent relationship between behavior and an antecedent (and/or) a consequence. For example, in order to be effect, a consequence (e.g. punisher or reinforcer) must happen *if and only if* the behavior occurs.