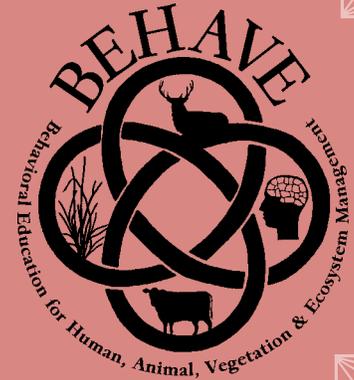


Behavior Depends on Consequences



Every time you let your dog out of the house, it's the same scenario. He stays by your side for a few minutes, until you get busy working. The next thing you know he's down the street. When you yell at him to come home, he runs the other way. Finally, you track him down, give him a couple of swats, and throw him in the kennel. On your way back to the house, you notice your neighbor's dog. He rarely leaves the yard. When his dog strays, a quick whistle and he's back, greeted with praise. What a great dog, you think to yourself. How did I get such a worthless mutt?

Your dog probably isn't worthless but your training methods may be. All animals behave as they do based on the consequences of their behavior. Every behavior has a consequence, and the likelihood of a behavior continuing depends on the consequences of that behavior. Consequences fall into one of two categories - reinforcement or punishment. Understanding how consequences influence behavior is the key to changing behavior.

Reinforcement. Consequences that increase the likelihood of a specific behavior reoccurring are called reinforcement. They can be either positive or negative. Creatures seek positive reinforcers. When a hungry animal searches for a nutritious food, or a thirsty animal walks to water, or a hot animal seeks shade, they do so because food, water, and shade are positive reinforcers - they are things the animal wants and needs. Conversely, animals avoid negative reinforcers. When a hungry animal searches for a nutritious food, or a thirsty animal walks to water, or a hot animal seeks shade, they do so to get relief from aversive stimuli - hunger, thirst, heat. The difference between positive

and negative reinforcers is the difference between "want to" and "have to" and that distinction is huge in both animal and human systems. All creatures perform best when they want to rather than when they have to.

Punishment. Consequences that decrease the likelihood of a behavior reoccurring are called punishment, and they also can be positive or negative. Positive punishment is the presentation of an aversive stimulus. When livestock get shocked for touching an electric fence, they stop touching the fence. When employees are harassed for making suggestions, they stop proposing new ways to do business. Negative punishment is the removal of a positive reinforcer. When a goat eats a plant that was once nutritious but is no longer, or when a ewe walks away each time her lamb attempts to nurse during weaning, both the goat and the lamb decrease rates of responding (eating the plant, nursing) because a positive reinforcer (nutrients, milk) has been removed. Punishment - positive or negative - decreases rates of responding.

Negative can be counter-productive. There is a growing movement away from reliance on punishment and negative reinforcement. Both arouse anger and fear in animals. If strongly aversive stimuli are used, these emotions slow learning and may lead to results opposite those intended. A submissive dog may attack its owner if beaten. A child may become unduly shy and nervous if parental punishment is too severe. Punishment by withdrawing a positive reinforcer produces characteristic forms of

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emotional reaction - disappointment or depression - in people. Withdrawal of strong reinforcers may produce serious emotional reactions, the most obvious example being the death of a loved one. People who are close to us provide many positive reinforcers. When they die, those reinforcers are suddenly withdrawn. The same is true when animals are moved from familiar to unfamiliar environments. All the positive reinforcers they have come to know are suddenly removed. No wonder they wander for miles, become malnourished and ill, and don't reproduce. Performance is poor, and stress is high, because all the familiar positive reinforcers have been removed.

Positive is better. Behavior is better shaped by positive reinforcement than by negative reinforcement and punishment. While coercion can quickly change behavior, its long-term negative consequences - stress and the desire to escape the circumstance and avoid anything remotely related - far outweigh its short-term benefits. People who work for a boss who continually threatens to fire them unless they shape up (negative reinforcement) are much less productive than people who work for someone who appreciates their efforts (positive reinforcement). Coercion causes stress, which reduces performance and profits. Livestock can be forced to move through chutes and in feedlots with hotshots, but it may cause other unwanted behaviors like jumping and kicking. Livestock move readily in properly designed systems when they are worked gently and rewarded, for instance with grain, for moving through chutes and in feedlots. It is less stressful on animals and on people.

Combination is best. A combination of positive reinforcement and punishment or negative reinforcement may be the most effective way to change animal behavior. For example, when moving cattle out of riparian areas, it is ineffective for a rider on horseback to simply scatter cattle out of the bottoms (negative reinforcement) because they will quickly return. If, however, the rider moves the cows as a social group to a new area with water and palatable forage (positive reinforcers), they are more likely to stay. The trick to moving is to keep something interesting in front of them, making sure each step is toward the destination, and letting cattle move because they want to go, never aware they are being driven. Through punishment, animals

can be trained to avoid a palatable plants like trees with high agronomic value or poisonous plants if the first few times they eat the plant they are given a dose of a toxin (positive punishment) that makes them sick. Nevertheless, the aversion will not persist unless animals have access to other nutritious foods (positive reinforcement). For training to be most effective, it's not enough to simply discourage unwanted behavior. Animals need to be encouraged to replace unwanted behaviors with desirable behaviors.

Upshot. So why does your dog run off but your neighbor's dog stays home? You don't pay attention to your dog (negative punishment), until he runs away. Then, when he returns or is captured, you beat him (positive punishment). No wonder he doesn't want to be around you. Your neighbor understands that dogs are social animals, so he spends time petting, playing, and interacting with his dog (positive reinforcement). Your neighbor uses positive reinforcement when training his dog and rarely has to correct his dog's behavior. When he does, punishment is immediate, consistent and leaves no doubt with the dog that the behavior should not be repeated. Your neighbor understands that behavior depends on its consequences.

Additional Readings

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