

Animal Behavior Management Alliance (ABMA) Training and Enrichment Talks

Topic: Training Terminology

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Question:

There's no doubt about it, there are lots of training terms out there. Learning them can be quite overwhelming for someone new to the field or even an experienced trainer trying to learn terms in order to communicate consistently with the rest of the team. The four terms of positive/negative reinforcement and positive/negative punishment are often some of the most confusing to distinguish. What are some examples of each of the terms and is there an easy way to remember the differences?

Answer:

You're right; there is certainly an abundance of jargon used in training. Although they might be confusing at first, it is important to try and gain a basic understanding of the most commonly used terms. Since behavior is created, changed or extinguished by what comes after the response, the consequences, it is extremely important to understand the concepts of *positive reinforcement*, *negative reinforcement*, *positive punishment* and *negative punishment*.

First, let's look at the root words of these terms, *reinforcement* and *punishment*. These terms define the type of event or consequence that follows a behavioral response and, more importantly, the effect it will have on the behavior. As consequences (events that immediately follow a behavior), reinforcement *increases* the frequency of behavior and punishment *decreases* the frequency of behavior. Another way to look at this is to analyze the behavior that interests us. If the response is *increasing* in frequency, we can assume that the response is being *reinforced*. Conversely, if a behavior is *decreasing* in frequency, we can assume the response is being punished. This is an important exercise because these terms are defined by their function NOT by what we expect them to do.

Next, let's look at what I'll call consequence qualifiers- *negative* and *positive*. These qualifiers typically precede the root words reinforcement or punishment and further define the type of consequence that is occurring. These qualifiers are usually the cause of much confusion because trainers incorrectly think *positive* and *negative* mean "good" and "bad". The best way to understand *positive* and *negative* is to think of them mathematically. *Positive* is an ADDITION to the animal's environment while *negative* is a SUBTRACTION from the environment. When you put the qualifier together with the root consequence you get the full meaning:

- *Positive Reinforcement*- an ADDITION of something (stimulus) to the animal's environment following a response that INCREASES the frequency of that response. Example: of this would be a bird flying to a magician's arm. The bird responds correctly (flies to his arm) and the magician gives the bird a grape. The grape is the addition to the environment and because this treat is a desirable stimulus, the response is likely to increase in frequency or, it has been *reinforced*.

- *Negative Punishment*- a SUBTRACTION of something from the animal's environment that DECREASES the frequency of that response. Example: While on the magician's arm, the bird begins to misbehave by squawking loudly. The magician stops feeding the bird and ignores the bird during this behavior. The behavior (squawking) is likely to *decrease* in frequency because the food and attention, which are desirable stimuli, are removed as a consequence for the squawking response.
- *Positive Punishment*- an ADDITION of something (stimulus) to the animal's environment following a response that DECREASES the frequency of that response. Example: A magician is working with a tiger that displays an aggressive response (growling). The magician then strikes the tiger on the nose. Because the strike to the nose is an undesirable stimuli, if the response (growling) decreases in frequency then the response has been *punished*.
- *Negative Reinforcement*- a SUBTRACTION of something from the animal's environment that INCREASES the frequency of that response. After the magician strikes the growling tiger on the nose. The tiger then jumps on the magician knocking him down. The response (knocking the magician down) is likely to *increase* or has been *reinforced* because it stops (removes) the undesirable stimulus (pain from the strike to the nose).

For the visual learners, the matrix below graphically demonstrates the four categories of consequences that were defined above:

		Rate of Behavior	
		Increases	Decreases
Consequence	Something is Added	Positive Reinforcement	Negative Reinforcement
	Something is Removed	Negative Reinforcement	Negative Punishment

Many trainers get confused about the difference between *Positive Punishment* and *Negative Reinforcement*. The confusion stems from the fact that both of these two consequences occur once an aversive stimulus is applied/occurs. Once an aversive stimulus is applied, *Positive Punishment* and *Negative Reinforcement* will occur sequentially and in that order. The difference lies in the role of the aversive stimuli.

Remembering that a behavioral event can be broken down into three distinct parts, *Antecedent* (cue), *Behavior* and *Consequence* (ABC), the shared aversive stimuli plays

two different roles. In *Positive Punishment*, the aversive stimulus is a consequence to behavior, THEN, this same stimulus becomes an antecedent (cue) for the next response by the animal, which is typically a behavior that avoids or escapes the undesirable stimulus. Once the animal succeeds, this response is *Negatively Reinforced*. An example of this is the classic leash correction used for the dogs. The dog begins to forge ahead of its handler (undesirable behavior), the handler jerks on the leash/collar (aversive stimulus) which *Positively Punishes* this behavior, the dog then falls back to heel position which stops the leash correction used for dogs. The dog begins to forge ahead of its handler (undesirable behavior), the handler jerks on the leash/collar (aversive stimulus) which *Positively Punishes* this behavior, the dog then falls back to heel position which stops the leash correction (escapes the aversive stimulus) and this response is *Negatively Reinforced*.

In summary, any time an aversive stimulus is experienced by an animal, the behavior occurring at that moment in time will be positively punished. The subsequent behavior can be negatively reinforced if it allows the animal to escape/avoid this undesirable stimulus.

Behavior is occurring all the time and an experienced trainer can quickly determine the type of consequence that follows it. It is beneficial to practice identifying consequences in the world around you. Malls, restaurants and dog parks are great places to hone your skills. By watching people interact with each other or with animals, you can quickly learn that:

- Consequences are defined by their function- not what the trainer intends, but by what actually happens to the behavior
- Consequences are relative not absolute-the effects of reinforcing or aversive stimuli are different for each species and for each individual. Fish may be a great reinforcer for a dolphin but not for a horse.
- The effect of consequences are dynamic-Little Jimmy will behave for ice cream but not after he's eaten a gallon!

Knowing the definitions of operant terms and using them correctly is important because it allows trainers to communicate effectively with each other. It is important to actually understand these concepts and to apply them correctly for the benefit of the animals in your care. Happy training!

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