

Applied Behavior Analysis: Reinforcement

By Marty Bennett - Camelid Instructor Bend, Oregon

In the previous column on Applied Behavior Analysis I wrote that my early experience with a scientific approach to animal behavior was unappealing in that I thought it limited a rich emotional connection with animals in favor of numbers, statistics and a dry clinical approach. In fact adopting an appropriately detached approach to behavior with a more scientific mind set can deepen your understanding of what makes animals do what they do and results in a more genuine connection. Understanding the science is freeing—there is no need to invent an agenda or back-story that explains behavior, you can simply observe it and shape it.

Last time I introduced some important terminology and principles from the course, “Living and Learning with Animals” taught by Dr. Susan Friedman* these included the scientific definition of learning, how to operationalize behavior, how labels get in the way of really understanding behavior and the scientific A-B-C’s of behavior (antecedent-behavior-consequence). In this article I will discuss the science that supports our human efforts to influence and shape behavior. Learning is defined as a behavior change due to experience. When it comes to the way our animals behave around us or *for* us understanding how your animals “experience” you and your behavior couldn’t be more important.

One hundred years of research on behavior has resulted in a set of general laws called “Fundamental Principles of Behavior.” Key to the understanding of these principles is a unifying rule called “the law of effect” which states, “In any given situation, the likelihood of a behavior occurring is related to the consequences that behavior has produced in the past. Simply put... behavior is a function of its consequences. More than that... behavior is a tool to PRODUCE consequences.

You can choose not to take a scientific approach to animal handling and training but the fact is that, just like gravity, these laws are in effect and govern how your animals respond to you. Science has permeated the way we think about animals, our speech is peppered with scientific jargon that most of us don’t use correctly and more importantly don’t really understand. We generally use the word *consequence* with a negative connotation, “Don’t fasten your seatbelt and you will suffer the consequences!” From a scientific standpoint the definition of consequence is defined as



The female on the right has just given birth the young female on the left is the daughter from the previous year learning the ropes.

an event that influences the future strength of the behavior it immediately follows. An alpaca learns from the consequences of his/her behavior, if the behavior is useful, it is worth repeating. This feedback comes from all aspects of the environment... other animals, inanimate objects and of course the HIC’s (humans in charge).

We egocentric humans inappropriately reserve “real” learning for ourselves. We assume that animals are creatures of instinct and that most of their behavior

is innate and hardwired. This basic assumption is off the mark, it turns out instinct plays a part (with animal AND human behavior) but behavior is very fluid and subject to modification based on the effects of consequence. In fact the vast majority of behavior is learned and the more scientists study behavior the more dynamic it proves to be. For example birds are born knowing how to build a nest but they improve their technique over time such that the second or third or fifth nest they build is much different and better than the first one. Anyone who has watched a seasoned mother alpaca tend to her baby knows how invaluable her previous experience is. For the most part, first



This alpaca baby is learning that WHEN you are in the wrong spot IF you nurse THEN you don't get milk!

time mothers figure out how to both deliver and care for a new baby—human intervention may or more often may *not* improve upon the process or outcome. Herd management practices that separate animals by age for human convenience eliminate a young female’s opportunity to observe a birth and to interact with experienced mothers and new babies. This practice may not be the best way to manage alpacas. Routinely assisting with a birth and “helping” a baby to stand and nurse may teach your alpacas to rely on your assistance—what happens if you aren’t there?

Learning from experience involves a good deal of **when-if-then** reasoning. **When** there is a speed trap on your way home and **if** you speed **then** you get a ticket. Your alpacas watch you closely for all kinds of clues about what your behavior means for them. **When** you come out of the house wear-

ing your muck boots and you head in the direction of the feed room **if** the alpacas come running **then** they get fed. Walk out the same door with a dress on or even the wrong shoes and you get no reaction. **When** a trailer pulls into the driveway and **if** the stud male waits by the breeding pen **then** he may get lucky—trailers become VERY interesting! The meter reader gets no greeting at all! Most of us notice these “when- if— then” contingencies and enjoy telling other breeders about them

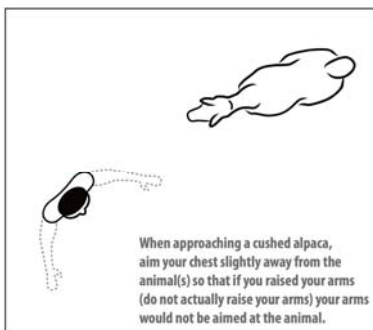
over dinner but understanding the effect of consequence is a much more potent tool. Provided the consequences are reasonably consistent animals learn in a very short time and the “when-if-then” relationship can be used to shape behavior very deliberately.

As we discussed earlier consequences are not all bad -- they aren't always good either. Simply, consequences either increase or decrease the likelihood that a behavior will be repeated. Reinforcement is the process by which a consequence increases the strength of the behavior it follows. The word reinforcement is often used interchangeably with the term reward. In some contexts the two things coincide. Using the word “reward” however, introduces an element of judgment, which muddies the water. If your dog barks and you yell at him to stop and he barks louder then you have reinforced the barking by yelling even though you surely didn't mean to reward it. Using the scientific definition will help you see more clearly how your behavior affects an animal.

You cannot understand reinforcement without really and truly understanding that the animal makes the decision that something is reinforcing not the human. Whether or not the behavior increases or decreases in strength is the yardstick that determines if our strategy for altering behavior is reinforcing to the animal. As in the example I just used—yelling at the dog to stop barking—if your dog continues to bark or escalates the barking when you yell, the yelling is in fact reinforcing to the behavior even though that is not your intention. In the case of camelids most of us want our alpacas to feel comfortable being near us. We want the alpacas to approach, linger and visit standing closely to us. I have observed to the chagrin of many of my students that hugging or even reaching out to an alpaca makes a no-man's-land of the area around us.

We humans might enjoy physical contact—but if you understand the body language of alpacas and observe the effect of hugging an alpaca you will see quite clearly that this very human behavior is uncomfortable for camelids. Reaching out to or

hugging an alpaca when they come close will reinforce the alpaca to halt his approach and get no closer to you than your arms-length probably further. The same logic applies to the way that many people catch an alpaca. Use the common corner-grab-hold approach or grab any alpaca that gets close enough and “when-if-then” becomes **when I see a human—if I get up and run away—then I cannot be caught**. Hardly the message we want to send to our animals. Use a catch pen for catching and keep your hands to yourself when moving



Learning to be a non-threatening presence means that you get to be closer to your animals.

amongst your animals and they will come closer and stay longer.

Because behavior is always happening in a continual stream, learning to be a close observer of the alpaca's behavior and honing your ability to deliver reinforcement with impeccable timing is crucial. The trick is to reinforce the behavior you want not the one before or the one after. If you are late or early in your delivery of reinforcement then you may be encouraging a completely different behavior than the one you intend. Using the same example of teaching alpacas that it is safe to hang around and stand closely to humans, try this exercise. When you enter the pasture or barn and your animals are cushed, (lying down) see if you can reinforce the tendency of the alpaca to remain cushed instead of provoking movement. You can also experiment with various ways of moving around your animals to see what reinforces stillness over moving. As preparation for this exercise, spend some time observing your animals as they get up from a cushed position. Observe what they do first before they arise. If it reach forward with their head and neck, then you will be looking for any forward movement of the head as the early indicator that the alpaca is preparing to get up. This behavior would be an indicator that you are coming too close or otherwise behaving in a way that would cause movement. Watch closely and you may be able to observe even earlier indications of an alpacas intent to get up. For example if the alpaca is chewing a cud, he or she may stop and swallow it in preparation to get up. Close observation will tell you what action certain behaviors will signal.

The other half of the equation is your behavior and this will require some experimenting as well. It is my experience that the best non-threatening barn behavior is one in which *you*

- ◆ do not look directly into the animals eyes
- ◆ carry your body with a relaxed posture, shoulders down, arms loosely by your sides
- ◆ breathe regularly and deeply
- ◆ move in a “consciously casual” fashion that is not too slow and not too fast
- ◆ aim your chest slightly away from the animal(s) so that if you raised your arms (do not actually raise your arms) your arms would not be aimed at the animal (see drawing).

It is fun to experiment with how your body position and demeanor affect an alpaca's willingness to remain cushed when you are near him. Once you look at your animals through this new lens you will realize how rich and intricate the relationship can be. Your alpacas will surprise you with their intelligence, creatively and their insights into *your* behavior.

Happy Handling.

For more information about Applied Behavioral Analysis Visit: *Dr. Susan Friedman
www.behaviorwork.org