

Classical Conditioning

Simple "treat-slinging"? Look again; there's a powerful force at work here.

BY MARDI RICHMOND

When Maggie, a young Australian Cattle Dog-mix, first walked into our agility training yard, she was obviously scared. As I crouched near her, hand outstretched with a treat, she slunk away. When another dog moved on the opposite side of the yard, she jumped. When her handler led her gently past a tunnel, she tried to escape and run away. When a truck drove by on the street nearby, she cowered.

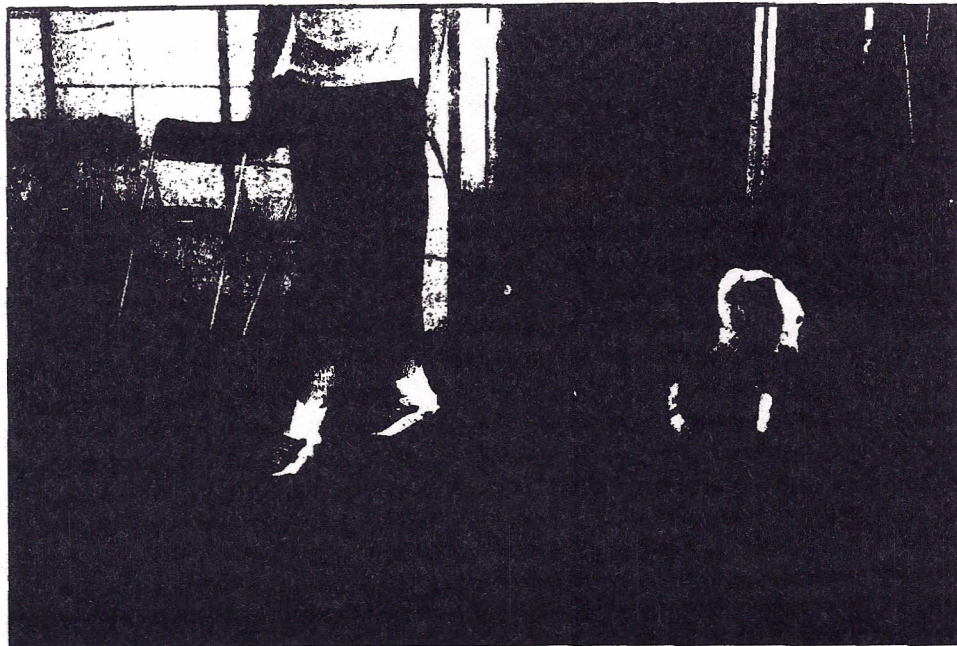
Maggie was, quite literally, afraid of everyone and everything. I'm sure that if the sun had been out that day, she would have been afraid of her own shadow.

Yet this morning, less than a year later, Maggie confidently marched into the same training yard. She approached another dog, tail wagging. She excitedly ran up to each person in the class (including a couple of people she did not know) asking for attention and treats. Then, at her handler's direction, Maggie leaped through the tire jump, raced over the A-frame, ran through the tunnel, jumped three jumps, pushed through the chute, and banged down the teeter. And she did all of this while cars and trucks noisily passed on a nearby street.

How did Maggie overcome her fears and learn to confidently approach strangers, interact with other dogs, and charge through an agility course all the while tuning out loud rumbling trucks? The key was a powerful learning experience called classical conditioning.

Positive associations

Classical conditioning, quite simply, is learning by association. It is when a person or animal associates one stimulus with something that was not previously associated. For example, if you ran an electric can opener in front of a dog who had never eaten anything out of a can before, he may not respond to the sound in any way. But if you begin feeding the same dog canned food, he'll soon learn to associate the sound of the electric opener with the advent of his dinner, and begin to display great excitement



Whenever the electric can opener runs. When using classical conditioning to change how a dog "feels" about certain stimuli, we simply pour on the treats, no matter what the dog is doing; his behavior doesn't influence our flow of treats. Eventually, he'll begin to associate good things with the formerly angst-producing stimuli. Petey, a former shelter dog, is a great candidate for the method. He becomes highly anxious when brought into a training facility.

whenever the electric can opener runs.

Classical conditioning happens everywhere, all the time, with or without our help or knowledge. Most of us have dogs that get excited when they hear the jingle of keys. A set of keys, by itself, has no special meaning for dogs. But when those keys are linked with walks or car rides, they can trigger as much excitement as the walks or car rides themselves.

While classical conditioning occurs naturally, we can also consciously use it as part of training and socialization. Classical conditioning is one of the most powerful (and often underutilized!) training tools available.

Shifting emotions

Classical conditioning differs from other types of training; in fact, it's not training, per se, although it can play an important role in the training process. The goal of training is to get the dog to exhibit certain behaviors

— or cease to exhibit certain undesired behaviors — on cue. For example, you want the dog to sit when you use a verbal cue, or you want to teach the dog not to jump up on you. Most training is accomplished through the use of *operant conditioning*, the use of rewards and/or punishment to encourage or discourage the dog from displaying certain behaviors. Praise, petting, or feeding a dog treats when he is sitting increases the likelihood of his sitting behavior; punishment such as ignoring the dog and turning your back on him will decrease his jumping behavior.

With classical conditioning, on the other hand, changing the dog's behavior is not your immediate goal, but rather, a "backdoor" sort of result of changing his feelings about a given stimulus. Your immediate focus is how the dog *feels*; you use classical conditioning to make the dog unconsciously *react* a certain way. This is

called a conditioned reflex. The power of classical conditioning comes from its ability to help shift the emotional reactions that drive his behavior.

To use Maggie as an example, we used classical conditioning to help her relax and enjoy being in the training yard. The process was simple: her handler showered her with great treats each time she came into the training yard. Within a few weeks, Maggie's fears started to subside; strange people, new dogs, spooky obstacles, and noisy trucks no longer triggered a fear response – these things now meant treats! She quickly began relaxing while in the agility yard and anticipating the treats she would receive there. Soon, we were able to start teaching her agility.

As I said, even though classical conditioning does not train a dog to perform behaviors on cue, it can play a powerful role in a behavior modification program.

Conditioning training tools

One of the most common ways to use classical conditioning in a positive training program is in the initial steps of clicker

training. The clicker, at first, has no special meaning to the dog. But as soon as the Click! of the clicker is repeatedly paired with great treats – also known as “charging” the clicker – it becomes a powerful tool in training. The “charged” clicker elicits the same emotional response in the dog as the treat itself.

Classical conditioning can also be used to help dogs learn to accept training tools that they don't like at first, such as head halters, muzzles, or crates. Take head halters as an example. Many dogs will, without conditioning, resist or even actively dislike wearing a halter. But through associating pleasant things with the halter, most dogs can actually learn to love wearing one. At first, you might give your dog treats when you take out the halter. Next, you give your dog treats, praise, and other enjoyable attention while you hold the halter near the dog, and eventually, you lavish this enjoyable treatment on the dog while he wears the halter. Once the dog can wear the halter without any signs of distress, you can reinforce the conditioning by always having the halter signal the start of fun activities: walks, ball play, training, and other adventures.

Becoming a social animal

Behaviorist and author Jean Donaldson, who directs the behavior and training department at the San Francisco SPCA, calls the use of classical conditioning in conjunction with early socialization “a puppy insurance policy.” Each time you pair the presence of children with treats, for example, you are paying into an insurance policy that will protect you and your dog from behavior problems around children later in life. The more you put into the insurance policy, the bigger your protection! Here's how it works:

By introducing a puppy or young dog to kids of all different ages, he will be more likely to accept kids. When you provide classical conditioning through feeding treats in the presence of children, the dog will not only learn to accept kids, but also will learn that when he is around kids, good things happen. If you also have the children actually feed your puppy treats or play his favorite game, he will learn that children not only equal good things, but also are the source of good things!

If you incorporate classical conditioning in all of your socialization efforts, you are

Behavioral Science History and Definitions

Classical conditioning, also called Pavlovian conditioning or associative learning, was first identified by a Russian physiologist, **Ivan Pavlov**, in the late 1800s. Pavlov was studying dogs' salivary reflexes.

While conducting other experiments, he unintentionally discovered that while hungry dogs naturally salivate when food is put in front of them (what came to be called an “unconditioned stimulus,” something that would happen naturally), they would also start to salivate when *other* stimuli told them the food was coming. Pavlov noticed that the dogs would begin salivating when they were brought into the area where the experiments were conducted, and that they salivated even more when the person who fed them came into the room. The dogs had learned to associate the experiment area and person with the food itself.

Pavlov then conducted some experiments with bells, as well as other sounds, sights, and even tactile stimuli. He found that any of the stimuli, when consistently presented a few seconds before the food, soon caused the dogs

to salivate. He called this a “conditioned reflex.”

When classical conditioning is defined today, Pavlov's experiment is almost always described. It is conditioning in which a stimulus (such as the sound of a bell) is paired with an unconditioned stimulus (such as the sight of food, which naturally and automatically elicits a certain response from the dog, in this case, salivation) until the original stimulus alone (in this case, the bell) is sufficient to

elicit the response (salivation) usually made to the unconditioned stimulus (sight of food) alone.

Teaching theory

Most dog training today is based on the concepts of “operant conditioning,” a term coined by American psychologist B. F. Skinner in the 1940s.

In operant conditioning, the desired behavior (or increasingly closer approximations to it) are followed by a rewarding or reinforcing stimulus. When consistently reinforced with a pleasurable reward, the subject increasingly exhibits the desired behavior.

Unconditioned stimulus (UCS) is something that naturally and automatically elicits a response in the dog. Food is an obvious unconditioned stimulus.

Unconditioned response or reflex (UCR) is something the dog does or feels without having to think about it, like salivating or drooling over food.

Conditioned stimulus (CS) is the thing that reliably predicts the unconditioned response. Pavlov used a bell as a CS to signal food was coming. Many trainers who employ positive reinforcement training use a clicker as a conditioned stimulus.

Conditioned response (CR) is what happens when the dog responds to the conditioned stimulus in the same way as he responds naturally to the unconditioned stimulus.

Putting Classical Conditioning to Work

Here are the steps to using classical conditioning with your dog. This process can help your dog form a positive association with something he has never experienced before. It can also help your dog overcome fears associated with other animals, people, or things. For brevity, I'll refer to the object, animal, or person you want your dog to like as the "scary thing."

1. Identify the scary thing. That is, determine exactly what it is that you would like to "condition." For example, a dog who exhibits fear of people may be afraid of all people, or just some people. If he is afraid of *some* people, figure out which people trigger his fear – it could be tall people, people with hats, children, men, women, or people with umbrellas.

2. Pick something special to use for your conditioning "treat." It can be anything your dog is crazy about – the more he likes it, the better. Food is a great choice. But if your dog loves balls or other toys, they can work, too. Ideally it will be something that is extra-special to your dog (like chicken chunks or roast beef) rather than pieces of his everyday kibble.

3. Each time the scary thing appears, give your dog the special treat. Here is the order:

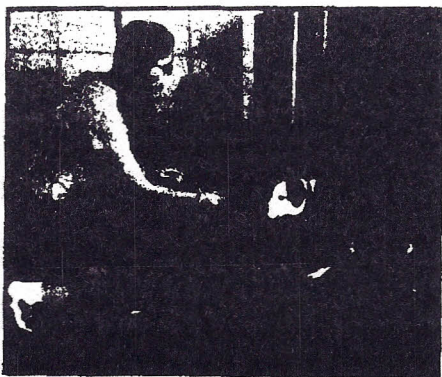
Scary thing appears; you give your dog the special treats.

Scary thing goes away, the treats stop.

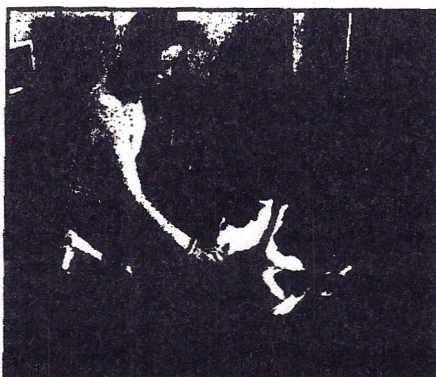
This is important. The scary thing must signal the beginning of the treats and the scary thing going away must end the treats.

4. Give lots of the special treats in the presence of the scary thing. You want the dog to be saturated with good things!

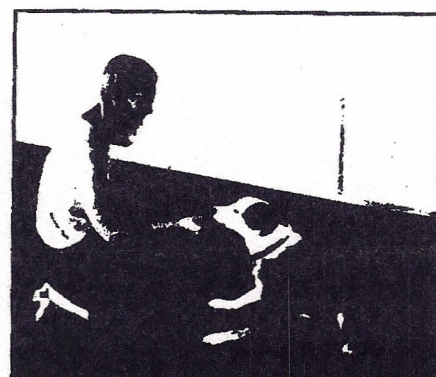
5. Ideally, your dog should get this extra special treat *only* in the presence of the scary thing. This is especially true if you are working on a strongly ingrained fear. It's less important when conditioning your dog for general socialization or to condition something that is neutral to the dog.



Petey acted very frightened when first brought into the training room. Kirsten leaves the door open at first, reducing the intensity of the scary stimuli (the enclosed space). She doesn't ask Petey to do anything, but simply begins doling out a steady supply of delicious treats. Initially, Petey retreats to the end of the leash after he takes each treat.



Gradually, Petey stops retreating between treats, crouching in one place by Kirsten. Bit by bit, he stops glancing around nervously and begins to focus only on Kirsten's treat hand. His gains in confidence are enough to indicate that Kirsten can ever-so-slowly increase Petey's exposure to the scary stimuli by moving further into the room.



Great strides are being made! The longer he samples the goodies that Kirsten keeps offering, and the more confidence he gains in the scary room, the higher he gets off the floor!

Thanks to our model Kirsten Hrobosky of Sirtus Puppy Training (Berkeley, CA) and Citizen Canine (Oakland, CA) for use of their facility.

6. If possible, start with the scary thing at a distance or at a low intensity. Ideally, you want your dog to notice the scary thing without it triggering a strong reaction. For example, if you are working on a fear of people and your dog is okay with strangers at 20 feet but begins to show fear at 15 feet, start working with the people at a distance of 20 feet.

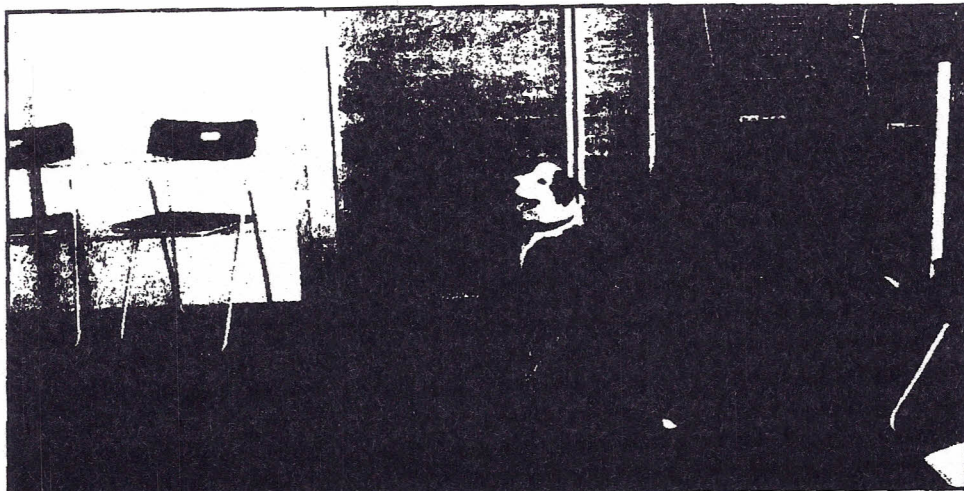
7. Take your time. Watch how your dog responds and use his reaction as the criteria for upping the ante. Look for this "break-through": when your dog notices the scary thing and then immediately, happily turns to you for the special treats. Depending on his level of fear, it may take a few repetitions or it may take many repetitions before your dog is happy about seeing the scary thing. *Be careful not to rush this part of the process.*

8. Don't worry about how your dog is behaving when you give the treats. With classical conditioning, your dog gets the treats just for the presence of the scary thing, not for his behavior. It doesn't matter if your dog is sitting, standing, or spinning in circles. Even if your dog is acting out, keep up the treats!

9. Set up lots of opportunities to shower your dog with special treats around the scary thing. The more you can do it, the better and faster it will work. Conversely, try to make sure your dog is not exposed to the scary thing when you are without treats to give him.

10. Be patient! When you use classical conditioning to create a positive association to something neutral – such as a clicker – your dog will make the association very fast. But if you are trying to create new, positive associations to something the dog already has a bad association with, it may take many repetitions before you see progress.

NOTE: If your dog's fears manifest in aggressive behavior, enlist the help of a knowledgeable behaviorist to guide you through the classical conditioning process.



Petey still wants to leave the training room. No problem! He has improved in just one session. His expression is much brighter and his posture is more confident. It would be ideal, however, if Petey's owner could repeat this exercise several times before taking a class here, to give Petey more time to realize that this is a GOOD place.

more likely to have a dog who not only likes the things he's already encountered, but may also learn to simply enjoy new experiences.

Dispelling fears

Classical conditioning is a good tool for helping the dog to overcome most types of fears, including fear of people, noises, and new places. One of the great advantages of using classical conditioning to overcome a dog's fears is that you don't have to know *why* the dog is afraid. You just need to figure out what she is afraid of and then condition her to "like" that thing.

For example, a dog that is afraid of umbrellas may be afraid because she hasn't seen many umbrellas, because an umbrella bopped her on the head when she was a pup, or maybe because a person carrying an umbrella looks like a big, bad monster. You may not know what caused the fear, and truthfully, you don't *need* to know in order to help your dog overcome her fear of umbrellas. (See "Putting Classical Conditioning to Work," left, for step-by-step instructions for using classical conditioning to dispel your dog's fears.)

Decreasing aggression

Fear and aggression are usually considered flip sides of the same problem. Dogs that respond to stressful situations with "flight" are considered fearful. Dogs that respond to stressful situations with "fight" are considered aggressive. But the underlying stress reaction may be similar.

I became intrigued with classical conditioning because of my own dog's problems. Jesse has displayed fear-based dog-to-dog aggression on numerous occasions. I consulted another trainer for this problem, and

together we worked on helping Jesse overcome her aggression through remedial socialization, teaching incompatible behaviors, and management.

After years of work, and lots of help from the trainer, Jesse could walk down the street past another dog without acting out, she could perform in dog classes, and she even learned to safely negotiate with other dogs in off-leash play areas. Still, while Jesse was under good control and had improved social skills, she was never relaxed or confident when other dogs were present. And, if her stress level shot too high, the aggressive behavior would resurface.

About a year ago, we began to incorporate large doses of classical conditioning into our work with Jesse. Each time she saw another dog – *no matter what she was doing* – we showered Jesse with treats. Within six months, her stress response around dogs was noticeably lower. Last week, for perhaps the first time in her life, she stood in the center of a small group of dogs, tail wagging, relaxed, and confident. I would in no way consider her "fixed" at this point, but she is farther along than I would have thought possible just a year ago.

Watching a dog (or cat, or person, or any animal for that matter) overcome a strong fear is a magical experience. So is seeing our dogs becoming calmer and more confident in everyday and especially in strange, new environments. When a dog can learn to relax or even enjoy things that used to be scary, life becomes easier. Quality of life for both of you will dramatically improve. ♡

Mardi Richmond lives in Santa Cruz, California, where she teaches Agility for Fun classes and writes about dogs.

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