Restraining Canine Drives: Capping and Neutrality, Part 1
by Jerry Bradshaw

How we understand dog behavior is based on a paradigm in the trainer's mind--a paradigm being a way of thinking or understanding something, otherwise called a scientific model. For working dogs, the prevalent paradigm of understanding their behavior is what we call the "Drive Model" of canine behavior. That is, we understand working dogs to have a set of inherent drives or instincts that are "hard wired" and which impel them to act as a result of being presented with certain stimuli. There is, for example, prey drive, which impels a dog to hunt for, chase, catch, and kill in order to eat; or defense drive, another inherent instinct which impels a dog to defend itself from threats to itself, its territory, or possessions. Depending on the dog in question, these drives can be very intense, or quite dull. When we get a dog that is very intense in how it expresses its drives, we sometimes have to teach the dog to compose itself in the presence of the stimulus that elicits the intense drive response.

As an example, if you have a dog with intense prey drive and tease it with a ball or a bite sleeve, its prey drive will elicit as the movement of the prey object is initiated. The dog will get excited and put all of its energy into trying to get the object. Over time just seeing the object, and later only the expectation of obtaining the prey item in a context where the dog normally will obtain the item, will cause the prey drive to come up. So as you walk onto your training field with the dog he pulls into his collar, choking himself almost to the point of falling out.

The dog can "know" obedience commands like sit and down, and perform them in many contexts out of drive, but then as soon as you initiate the expectation of the prey item being obtained (context, or the visible manifestation of the prey item), the dog's drive can override his ability to keep his composure and perform the commands. In order to regain control of the animal, we have to teach him how to compose himself in the face of the stimuli that cause him to get out of self-control. This process of teaching the dog to compose himself and restrain or internalize (not express) his drive temporarily is called drive capping. The process over time of teaching the dog not to become self-stimulated in the presence of stimuli or contexts that normally would cause the dog to express his drive is called drive neutrality.

Drive Capping

In physics you learn that energy can exist in two states-- kinetic energy and potential energy. Kinetic energy is the energy of motion, a projectile flying through the air, or in our paradigm, uncapped drive for the dog, e.g. pulling at the end of the leash barking and straining to get the sleeve or ball. (If you step out of the performance dog example and think of a low threshold defensive dog, the arousal of defense drive can come with the mere proximity of a stranger, causing a fear response and defensive aggressive reaction. This is expressing drive as well and something a pet trainer will want to be able to exert control over).

Potential energy, on the other hand, is energy that is stored in the object, and unexpressed until released. A stone on the edge of a cliff has potential gravitational energy; one slight push and now it expresses kinetic energy, but until it is pushed, the energy is stored. Think of the dog in a capped drive state, full of energy ready to be released.

Drive capping a high drive dog can seem at first a lot like trying to put the genie back in the bottle. In drive capping, the dog is taught that by doing the obedience command and internalizing his outward expression of drive he will receive the prey object as a reward. Metaphorically, our high prey dog is a pot of boiling water when it expects to receive the object (toy or sleeve) and our job is to take that energy and tamp it down like a coiled spring, suppress the boil temporarily, and allow that energy to go into the obedience command. The energized obedience command is much faster than the obedience command out of drive. We expect, however, that spring to uncoil and let out all that drive when we release the dog from the obedience command. If I tease my dog with a ball on a string, making him lunge at it and snatch it away a few times, peaking his outward expression of drive, and then tell him "down" he has to internalize all that energy and do his obedience command, but once performed it will be fast--as all that energy has to go somewhere! If the dog obeys and gives me the fast down, I release it into the toy, and the dog learns to down fast as a way to obtain the object. In capping, we can vary the duration of the restrained energy to ask the dog to hold its drive in for longer periods, but we must remember that underneath, the dog is boiling for release, so as we push the duration of the cap we can expect the dog to want to self-release to get what it wants.

Drive capping is a short term effect. During an obedience routine, or a training session, the dog is in and out of a capped state. Intensity climbs and then diminishes. Rewards given during the obedience routine can bleed off the drive by rewarding the behavior that the dog is capped in. Then, deprivation of the reward again increases the intensity of the drive level, and we cap again. Over time we want to be able to increase the intensity level at which the dog is capped. This should create faster exercises.

We first start teaching the dog to cap its drive at low intensities and work our way up to higher intensities systematically. This process is called successive approximation. We normally begin the dog's training in drive capping with food rewards rather than toys. Introducing a toy by itself with the intention to create a capped state initially can put the dog straight into conflict. Because the attraction of the prey is so strong, compulsion is used to get the result, and compulsion can create conflict. You will observe the dog is harder to the correction in the presence of the toy as a result of adrenaline. The dog can show conflict by "freezing" rather than doing the commanded action as the dog is caught between the attraction of the toy and the restraint of the compulsion. This is the definition of conflict. In order to avoid the conflict we must successively approximate the capping process with successively higher levels of drive intensity. If we don't start at lower intensities, then, we induce the dog to enter the state of conflict, where its drive is completely at odds with the behavior we have to have the dog perform. Conflict is also seen at later stages where the dog creeps in the stay, or just breaks the command altogether as you push the duration of the obedience command.

Drive capping is stressful. The dog must internalize its natural expression of prey behavior to conform to a behavior we teach it. The prey drive conflicts with the social drive and we create a state where the dog is neither clearly in prey drive nor being obedient, and thus the conflict. We will return to

a more long term model of how to restrain drive when we discuss drive neutrality.

Capped Drive, the Premack Principle, and Sequential Breaks

The Premack Principle states that preferred behaviors or behaviors with a higher level of intrinsic reinforcement (running, jumping, chasing to the prey motivated dog) can be used as rewards or positive reinforcements for less preferred behaviors (stationary behaviors for the prey motivated dog). For performance dogs, once the drive is capped we can let it bleed over into other obedience exercises that are more active in nature for the prey motivated dog (running as in a recall, or jumping, retrieving, or going through a tunnel which are inherently enjoyable) without just yet releasing the dog into his toy, but rather putting that restrained energy into an active state to make the exercise that follows more expressive. We can also be the victims of the Premack principle where a sequence of exercises for a performance dog is designed to have an exercise with high intrinsic value follow one with a lower intrinsic value. If the dog has to do a sequence of behaviors in a competition for example, such as hold a down before a recall, or hold a sit before being called over a jump sequence, the capped exercise (the stationary down or sit) becomes a little more unstable due to the conditioned experience of getting to let some of the drive out in the next exercise in the sequence. The "anticipation" we see is created by the dog's desire to be in a high prey state.

So if we teach the dog a sequence of behaviors where a capped state (holding a sit stay) always precedes an expressive state (running and diving in a pool as in dock diving which most dogs find intrinsically high value) the dog's drive may bleed out into creeping forward. I went to my first dock diving competition and virtually all the dogs creeped in the stay. As I watched training, virtually all the dogs were placed in a stay with no double handling or reward for the stay itself. The drive

is "mostly" capped but the dog knows it's about to get the opportunity to be released, so it self-releases in a restrained manner by creeping tiny amounts. Therefore, we can't always put a capped exercise before an expressive exercise. We need to interrupt the sequence, and reward the capped state not only with release into the next exercise where it can put that restrained drive into action, but by releasing it from the capped state itself. In fact this needs to be done disproportionately often. Another solution is to put pattern breaks into training so the dog expects to have to wait out the interruptions which further enhances the drive capping, but keeps the dog from bleeding drive into the next sequential exercise in the trial pattern.

One of my solutions for the dock diving example is to double handle the stay to enforce the capped state and show the dog the toy often comes back to him for rewards in place without the jump. I also suggested starting in the middle of the dock and as the handler approaches her position to make the throw to first teach the dog to go backwards as a pre-condition for release to run down the dock and jump, in effect "coiling the spring," and removing the need for a stay altogether so the dog creeps not toward the handler but on command backward to the far end of the dock.

Another example where we put in breaks in training a sequence is in a retrieve exercise with a dog that inherently enjoys retrieving. The exercise calls for a sit in basic position, and hold the sit as the object is tossed in front. The toss itself is highly exciting to prey drive. The dog's drive must be capped until sent on command. In training we can teach the dog to hold its stay through what I call "step outs," where the handler throws the retrieve item, then steps one step away from heel position to the right, and then back into heel. This is done a multiple and variable number of times before releasing the dog to retrieve so the connection between the capped state and the release to retrieve is delayed by design. In a competition the dog expects to wait to be sent thus reducing the likelihood of self-release. The interruption prolongs the capped state in training every time-- sometimes more, and sometimes less.

Next Issue: Drive Neutrality explained, and how to use both drive capping and neutrality for performance dogs as well as pet dogs

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Additional Reading

Bradshaw, Jerry. Environmental Challenges: Basic Systematic Desensitization for Police Dogs. K9 Cop Magazine. November/December 2013.

Bradshaw, Jerry. The Talented K9 Trainer: Becoming an Expert Handler or Trainer. The Journal. Winter, 2015.

The Protection Sports Association. www.psak9.org

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