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"Every handler gets the dog he deserves."
        Motto: London Metropolitan Police Dog Section

S-I-A-B

Scent In A Bottle -- An Operant Approach to Tracking.

Here's a thumbnail view of the process:

The CR gives you one advantage that other systems don't. You can break one long track into a series of discrete components, each reinforced by an event-marker/end-of-behavior C/T (Click and Treat). This gives you some flexibility you don't get by dropping wiener pieces along the route. You can now mark an excellent behavior, reinforce it, and then restart. The end product is a dog that considers tracking to be an intrinsically reinforcing behavior, and whose tracking behaviors have been carefully selected to suit the handler's needs. If you need a tight footstep-for-footstep tracker, reinforce that behavior and allow other behaviors to extinguish.
 If you need a fast trailer, shape for that.

This is a big improvement over the way police dogs were taught to track years ago--follow the track and you get to fight a bad guy at the end. Those dogs concentrated on the end so much, they tended to forget about the means. They'd turn into bush-hunters. Many were unwilling to pass by any object large enough to hide a person without running behind it to check for their quarry. Unintentionally, we put bush-hunting on a Variable Schedule of Reinforcement (VSR)--the dog learned that if he kept checking bushes (pulling the lever) the bad guy
would be behind one (the slot machine would pay off). We had created gambling addicts of the worst sort. However, by carefully selecting what you reinforce, you can create a dog which gambles in the if-I-follow-this-scent-long-enough-I'll-find-the-guy mode. It may seem serendipitous to them, but by getting a few C/Ts along the way, we shape them into the sort of gamblers we want.

If you leave wiener bits along the route you don't have much control over what behavior is being reinforced because the dog gets the weenie regardless of what behavior he's doing at the time. Dildei's method is probably the best of the food drop approaches, but you have to be very diligent to get the dog past sight hunting once you get to surfaces you can't compress enough to hide the weenie--pavement, for example.

The CR and scent-in-a-bottle approach can have a steep initial learning curve, but once the dog gets the idea you'll make amazing progress at the more advanced levels.

The drawback to the old start on grass approach (which we used for the better part of two decades) is that some (read: many!) dogs never get over their reliance on vegetative surfaces. This wasn't a problem in the heyday of Glenn Johnson and L. Wilson Davis, but it sure is now with urban police work and AKC VST tracking being one of the new yardsticks.

Since none of have even the most remote possibility of processing scent the way a dog does, we can only guess at what's going on in the animal's head as we ask it to do a scent task. That being the case, we thought it would be best eliminate as many of the extraneous scents as possible and to tightly control the ones that we couldn't eliminate.

Crushed vegetation can produce a pungent odor, but it can vary dramatically in intensity and content. Intensity of the odor varies with the moisture content, wind, sun, heat, and other factors. Content varies with plant and soil type. It is more difficult than we think to control these variables in successive approximation plans for tracking.

On the other hand, a pavement parking lot has relatively uniform constituency. Also, surface disturbances caused by walking produce very\ little odor in and of themselves. Therefore, pavement provides a more "sterile" tracking surface. This has been the problem in the past. Dogs used to working on vegetation relied on it and had a difficult time following tracks on pavement. This is why variable surface tracking (VST) is considered a more difficult task than "novice" tracking (TD). Since our journey level work is roughly equivalent to VST, we needed a way to make dogs comfortable on pavement from the git-go.

But how do you start a novice dog on a surface as "difficult" as pavement? You add scent, of course. Then you fade the stimulus by gradually reducing, and then removing, the added scent.

The process was both simple and easy. We made SIAB--Scent In A Bottle.

We had our quarry bring in a grungy T-shirt, which he sloshed around in a bucket of distilled water. We do this so there is no chlorine to kill the bacterial component of the scent. Un-chlorinated well water will do. The quarry then swabbed his or her arms down with the soggy T-shirt as well and the wrung it out into the bucket. We then poured the scented water into a pump type garden sprayer and headed off to the local Costco parking lot (Remember, we work nights, so the lot is empty). You folks at home need to find other empty lots. Try office buildings on weekends, churches on weekdays, and covered parking garages in inclement weather.

Using the stall lines as "stakes" we mapped out short tracks (50-75 yards) and had the quarry spray the route with a tight stream of the scent in a bottle as he walked. By spraying the solution ahead of him as he walked the quarry did three things; 1) He directly his applied scent to the surface, 2) He provided an adhesive for his falling skin rafts, and 3) He provided a moisture for the skin rafts and bacteria.

A few minutes later the handler would bring the dog on a 6' lead to a point about 5' feet into the track. Then he just waited for the dog to investigate his surroundings and "notice" this new, intense scent. When he did, Click and Treat (C/T). From there it was a simple shaping program to extend interest, directional accuracy, track-tightness, and track-sureness. Once the dog was handling 100 yards or so with multiple turns we started fading the added scent.

Increase dilution first, eventually getting to pure water, then widen the spray pattern, then raise the widened spray pattern so that the tracklayer is virtually walking through a mist, then go intermittent misting, then misting just the corners or surface changes, and finally use the bottle to mist your geraniums, because you won't need it for tracking any more. One tip, use a pump-up garden sprayer rather than a trigger bottle. It makes for much more controllable delivery of scent solution, and your quarry's index finger will thank you.   Once the dog was solid on pavement we introduced other surfaces, starting with gravel, then dirt, and finally grass. Each time bringing the scent-in-a-bottle back to ensure the dog had a reasonable chance for success. Since then, I've found that you can get away with a light water misting when introducing new surfaces.

 One of the dogs in our last patrol class had been started on grass as a youngster. When we went to this system with him there was no real problem, although he did like to blitz through grass a bit more than I would have liked. He made the transition to off-lead trailing easily as well. His first successful street application was nine-blocks through Seattle's International District (FKA: Chinatown) past numerous passers-by, weaving through two innocents who spent a moment talking to the suspect as he passed by and indicating on evidence. It was virtually an all hard surface trail.

Once you dog is working reliably without SIAB, then start teaching your dog to look for the start by starting him a few feet off the track and letting him cast around to find it. Gradually increase this distance from the start point until you can cover whatever size area you anticipate you'll need to handle in real applications. Obviously, if you're in AKC or Schutzhund, you don't have to worry about this as much as SAR and police handlers do.

Remember, the part of the scent picture for which you've trained your dog--intentionally or not--is what he will prefer to work. When working with lush vegetative surfaces early in the process you run the risk of superstitiously training the dog to follow the odor fluids released from broken plants, and the subsequent putrefaction of the plants. This can be a very concentrated odor, exactly pairing with the footfalls. On the other hand, skin rafts come off the body at a rate of 40,000 per minute following a general upward air current which surrounds the body. They then fall wherever air currents carry them, generally more concentrated near the track and becoming sparser as you go downwind. The combination of ground disturbance and human scent is the entire scent picture, but since there can be so much variance in the components, their quantity, and intensity there is a pretty fair chance that the dog will associate the odor/scent most consistently presented.

To test your dog's orientation to the scent picture, try this. Start a track on lush grass and have it cross a parking lot and a patch of desert (Rio Rancho and the malls in that area come to mind as suitable places). Watch your dog's behavior as he makes the transition. We've found that many vegetation-oriented dogs have a rougher time with this "easy" to "hard" transition than with an all hard surface track. Then try the opposite. Believe it or not, some dogs have a rough time going from hard surface to lush vegetative ones. It's almost as if they are overwhelmed by the new intensity.

That's why we tried eliminating as many difficult to control environmental factors as we could. In narc dog jargon the problem is called "confounding." Very often the dog will form an association not with the dope, but some other recurring odor present with the dope, such as containers, cutting agents, or the trainer's scent. That's why you see some improperly trained narc dogs indicate on film canisters, shoe polish containers, baggies, backing soda, milk sugar, light switches operated by the trainers, etc..

If you want to see a classic example of the difference the training philosophy can make read "Training Dogs" by Konrad Most (an old German text), and "scent and the Scenting Dog" by William Syrotuck.

Based on experiments with dogs trained to be very tight to the track on vegetative surfaces Most concluded that a) there is no human component to a track, just ground disturbance, b) therefore dogs cannot discriminate between the tracks laid by two different people who create similar ground disturbance patterns, and c) a dog cannot differentiate between a track laid by a person and one laid by a machine which mimics the ground disturbance pattern of a person.

Syrotuck felt that this did not square with what he had seen with his air scenting search dogs which had been later taught to trail, so he duplicated the experiments. Shazzam, and surprise, surprise, surprise, Sergeant Carter, Syrotuck's dogs "passed" the tests Most's dogs "failed."

I submit to you that Most's dogs did not fail. They performed exactly AS TRAINED. Unfortunately, the dog's concept of the task and the handlers' were just different enough that in the handlers' minds the dogs failed.

In the early 70's the first dogs Seattle used were imported from Germany with Schutzhund titles. They were taught by essentially the same force (ear pinch) methods Most's were. They were often befuddled by surface changes. They would often fake a track for blocks (hoping to escape the ear pinch). With retraining they improved. Subsequent dogs were not force trained to track, but did show the same predilection for vegetative surfaces. The more recently trained dogs are far more track-sure, and find tracking to be an intrinsically reinforcing activity. Sometimes they have been so focused on the track that they have literally bumped into the bad guy before they realized they had found him (From an officer safety standpoint, this is the only drawback to developing such focus on the track).

All in all, I'm quite happy with the results.

Scent in a Bottle

1. Have your tracklayer wear a T- shirt while he works out, works around the house, or engages in some strenuous activity. He should not wear any cologne, deodorant, or use antibacterial soap.
2. In a clean bucket, have the tracklayer soak the above T- shirt in distilled water rather than tap water. Chlorination in tap water kills bacteria on the skin rafts, and thereby eliminates a major component of human scent.
3. Wring the shirt out and pour the resulting "scent" laden water into a spray bottle. To save time and effort, use a pump type pressurized garden sprayer, but a regular trigger spray bottle will do for short tracks. Whichever bottle you use, make sure it used for that purpose only, and has never had chemicals in it.
4. You can vary the concentration of the "scent" solution by raising the dilution of the mix. In the beginning one T-shirt to a gallon ought to do.
5. You can vary the concentration of the resulting spray by adjusting the sprayer from a tight stream to a fine mist, and by raising the height from which you spray. In the beginning start with a tight stream and the nozzle very close to the ground (six inches or so).

Application of Scent in a bottle (Operant Tracking)

1. Start tracking in a large paved parking lot when there are no other people (or cars) there. This will give you a couple of side benefits
   a. Your dog cannot become reliant on crushed vegetation as his primary scent source on a track/trail, and b) There will weak residual human scent in the area and early on your dog will be exposed to scent discrimination as necessary part of tracking/trailing.
2. Map out your tracks using painted stall lines as landmarks for legs and turns. Since you won't hide a person or object at the end of the track you might want to track into the wind during these early stages. Make your first tracks short with only one leg, maybe 20 yards long out in the middle of the parking lot.
3. Lay this first track by spraying a tight stream of "scent in a bottle" on the ground in front of you as you shuffle over the area you spray a foot or so in front of you. This way you'll not only get the benefit of the scent in the spray, but the moisture acts an adhesive for the normally occurring components of scent. Walk back to the start of the track in such a way that your scent does not blow back on to the SIAB track.
4. Harness and lead up the dog, and bring him to the start of the track and give him a few seconds to investigate the area and odor. **Do not give a track command.** Instead, give the dog the length of the lead and let him do his thing. Silently wait for the dog to offer any attention to the track. As soon as he does give your Conditioned Reinforcer followed by your Primary Reinforcer (hereafter CR/PR). You may have to shape just for attention to the area of the track if you've got a dog that seems oblivious to this new scent-rich puddle in his environment. However, most dogs want to follow the scent, if for no other reason than curiosity.

Advanced SIAB track:
Zero concentration
36″ from ground
Mist
This is the final step before you get rid of the water completely. Basically, you just walk through a little water mist. Once your dog is working dry tracks you're ready to introduce other surfaces. Relax old criteria by going back SIAB with a tighter, lower stream and asking for shorter periods of tracking on the new surface.

Experiments conducted at seminars with large groups of dogs working under the same conditions indicate that for many dogs the addition of scent to the water may be unnecessary. Distilled water alone may be enough. I don't know whether this is because water alone creates enough salience, or that it acts as a hydrator and adhesive for skin rafts. I suspect that it is a combination of factors. I have taken to using this approach with my own dogs, since the means there is one less variable to fade from the shaping. process.

Still others prefer to maximize salience by using hot dog juice instead of human components. More power to them, but I would stress that it should probably only be used for dogs which show absolutely zero interest in water enhanced or SIAB tracks. Otherwise, they run the risk of training a superstitious behavior and may have to contend with first order learning issues when the dog faces difficult tracks later in its career.

I any case, I urge you to experiment with SIAB and/or water enhanced tracks. Even if you choose not to use them as a tool for initial tracking shaping, they can be valuable remedial tools for operational dogs struggling with hard surfaces.

SIAB CHECKLIST

You'll need:

- Clean bucket and a clean garden sprayer
- Sweaty T-shirt
- Distilled water *No chlorine*
- Empty parking lot
- An **established** CR/PR pair
- Primary reinforcers *Things go faster with food, but you can use a toy if you prefer*
- 6' Lead with a collar or harness
- Tracklayer *You can lay your own, if you don't do it too often*

Tracklaying with SIAB

- Start with a strong concentration
- Start with a tight stream
- Shuffle directly over the sprayed area
- Fade dilution first
- Increase spray width
- Increase spray height
- Spray intermittently
- Touch up corners
- Change surface with added SIAB

Shaping tracking
- CR/PR for proximity
- CR/PR for attention to scent

- CR/PR for attention in the right direction
- CR/PR for movement in the right direction
- Withhold forward progress for errors
- CR/PR for ANY great behavior *Don't just wait 'til the end*
- Use all your senses *Listen for sniffing too*
- Use a "Keep Going" CR
- Jackpot liberally
- Add the cue much later