The Top 10 Behaviors of Expert Animal Trainers
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Abstract
Think of a trainer you recognize as an expert. Now, think of the characteristics that inspire you to call that person an expert. Is it the person's knowledge, skills, charisma, confidence, reputation or ... something else? This presentation will operationalize some of the most important characteristics that expert animal trainers exhibit, from my point of view.

Introduction
We all know great trainers in our lives, people we look up to, admire, talk about favorably with others. But, how does a person earn that reputation as a great trainer? And, what separates a great trainer from an average trainer? To answer these questions, we need to start by operationalizing the construct "training skill." What does a trainer do to earn a reputation and label of "Expert?"

"Expert" Operationalized
Curators, managers, supervisors, veterinarians, directors and more would benefit from a description of the observable training skills of their staff. Since everyone's training these days, how does a leader with no experience in training judge the skills of their staff? Because a person has read Don't Shoot the Dog (a great resource by the way), has a whistle around their neck or a clicker in their hand, and uses jargon that confuses non-trainers, does not mean a person is a highly-skilled trainer. When a vet, curator or director watches a training session how are they to know skillful training when they see it? When the trainer tells them the animal is acting up, distracted by their presence, or messing with their minds, how does the director know the real problem isn't the trainer encroaching on the animal's personal space, unclear criteria, low rate of reinforcement, poor antecedent arrangement, or one of many other common training mistakes? For that matter, how does the trainer know?

Good training involves the artful application of scientific principles. As in other art forms, skill is a product of learning combined with practice. Where some people have developed their skill mostly by learning from their mistakes, others have benefitted from the guidance of knowledgeable and skilled mentors. As the training profession advances, there are increased opportunities to learn from mentors and other experts in the field through conferences and direct contact. However, animal training is still a relatively young field in need of more experts and artists to serve as mentors and model training behavior for others to follow.

Here are my top 10 indicators of an expert animal trainer:

1. Commits to using the most positive, least intrusive training methods

Positive reinforcement is now the standard procedure for the majority of training in the zoological world. However, negative reinforcement and punishment are still tools used in animal management today. No one is a purely positive trainer, or "Force-free. There are rare times in animal management and training that negative reinforcement and punishment are the right tools to keep animals safe and healthy, e.g., restraining an animal for important medical procedures and putting a leash on a dog to keep it from running across the road.

One outstanding tool to help tell the difference between an average trainer and an expert trainer is Dr. Susan Friedman's Hierarchy of Behavior Change Procedures (Friedman, 2014) where procedures are organized from least to most intrusive. In describing the hierarchy, Dr. Friedman wrote:

> "Intrusiveness refers to the degree to which the learner has counter control. The goal is to use the procedure that is the least intrusive, effective alternative. The hierarchy is a cautionary tool to reduce both dogmatic rule following and practice by familiarity or convenience. It offers an ethical checkpoint for trainers to carefully consider the process by which effective outcomes can be most humanely achieved on a case-by-case basis. Rationale like, "It worked with the last case!" is not enough. The evaluation and behavior change program of every animal should be a study of the individual (i.e., individual animal, setting, caregiver, etc.). Changing behavior is best understood as a study of one."

The hierarchy of behavior change procedures is arranged as follows, from least to most intrusive. It is intended as a general guideline, not a map per se:
1. Medical, Nutritional, Physical
2. Antecedent Arrangement
3. Positive Reinforcement
4. Differential Reinforcement of Alternative Behavior
5. Extinction, Negative Reinforcement, Negative Punishment (in no particular order)
6. Positive Punishment

Expert trainers approach each animal with the understanding of, what Friedman calls, a study of one, i.e., that particular animal in the current conditions which include the trainer and all of the other antecedent conditions at that moment in time. Yesterday's behavior and other past experiences are important but they do not perfectly predict what the animal will do in these current conditions.

Expert trainers know they have a long list of behavior-change principles to employ in their animal-training activities. However, they also know to start with the most positive, least intrusive methods as they move through the hierarchy while providing the best welfare for the animals they train.

2. Empowers animals with control

Control is a primary reinforcer for behavior (Friedman, 2014), just like food, water, shelter, etc. An animal does not have to learn that control is a reinforcer; control is inherently a behavior strengthening consequence. As trainers, it is our responsibility then to provide and protect it as a component of animal health and welfare (Friedman, 2016). Trainers and keepers can give animals control in their environment in a wide variety of ways. Opening a door when a rhino moves toward it gives the animal control of the door with its body language and often leads to the animal shifting more reliably in the future. Teaching an animal to lean in and put pressure on the syringe with no needle gives an animal control of the pressure as it learns increasing pressure is criterion for reinforcement. Working an animal in a restraint device with the doors open gives the animal the power to leave whenever it wants. When an animal is closed in a restraint device many animals lose their motivation participate in training. When an animal can leave, it is more likely to stay.

It is too often the case that trainers try to maintain control over an animal, even in protected contact environments. Their loud voice and stern body language is reminiscent of forcing an animal to comply with commands. They might speak in terms like, "Make sure he knows who's boss," "He knows better than that," or "Don't let him get away with that." This trainer-control attitude is common in many training programs but often at the detriment of progress. By giving animals control we form partnerships based on positive reinforcement principles where an animal learns its behavior can produce desirable outcomes provided by the trainer. An expert trainer has calm body language as she offers the cue to signal an opportunity for reinforcement, and then waits patiently for the animal's response through its body language. When the animal does not respond in the desired manner an expert looks for ways she can change her behavior, antecedent conditions, and training strategies rather than blaming the animal and trying to punish poor performance.

3. Constantly adjusts what they do in response to what the animal does

From the moment an expert trainer enters an animal's area, he is evaluating the entire space and the animal's body language for information about how to proceed, or to not proceed at all. Whether the training is happening in a holding area or in a large exhibit, the expert trainer automatically evaluates the antecedent arrangement including such potential learning obstacles as the direction of soft breeze, the other animals in the area, and items that will need to be moved. The animal's tiniest body language can tell the trainer if he should move forward, stay still or leave. An artist will not invade an animal's person space until he is invited in by the animal's body language.

Too often trainers blunder into the training environment with the blind confidence inspired by the training session the day before. Just because an animal was comfortable with the trainer sitting in front of it in a previous session, does not necessarily mean the animal will be comfortable in a current session. An expert trainer

enters every training session with the same caution and observation skills utilized in the first session. Additionally, every action an animal makes is an opportunity for a sensitive trainer to make adjustments in his body language. The tiny movement of a trainer's hand can bring an animal's attention back to the trainer, moving back just a few inches can bring comfortable body language to a nervous animal and keep an animal's spit in its mouth instead of on a trainer's face. Adjusting a prompt by just an inch can take an animal's eyes from the target to the trainer's cue, pulling back the hand prompt just an inch can get an animal's tongue back in its mouth, its foot on the ground or its shoulder against the mesh. Experts realize small adjustments can have a huge impact on clear communication between the animal and the trainer.

4. Builds a big trust account

Every trainer has a trust account at their bank of relationships with each animal they work with. When a trainer does something the animal likes, or provides something the animal will work to gain, the trainer makes a deposit in their trust account. When a trainer does something an animal dislikes or will work to escape or avoid, the trainer takes a withdrawal from the trust account. When a trainer makes more withdrawals than deposits it can bankrupt the account, which behaviorally looks like, for example, the animal no longer approaching the trainer, not participating in training sessions, and showing aggression. When this happens, too many trainers blame the animal instead of searching for tangible causes of the problem behavior in the interaction or the environment, or working to build back lost trust.

Building trust is accomplished through such things as positive reinforcement training strategies, giving animals control in their environment, and adjusting your body language in response to the body language of the animal. When an animal walks through a door to a holding area and the door is closed behind it, there is a chance for a withdrawal from the trust account the animal has with that trainer in that door-closing condition. However, if the trainer delivers a high value reinforcer and then opens the door for the animal to pass back through, there is a likelihood of a deposit into the trust account with that trainer in that door closing/opening condition, and an increase in fluency of the shifting behavior.

No trainer can say he is a pure positive reinforcement trainer. We all find ourselves in positions where we need to use a bit of aversive stimulus, usually to keep an animal safe or healthy. However, we can generally minimize the aversive experiences with an abundance of appetitive experiences. Trainers wonder if they should be in the room when the veterinarian comes to dart their animal to anesthetize it for an examination. The answer to this question usually involves an evaluation of the trust account the trainer has with the animal. With a high trust account, some animals might find comfort in being near a trainer as it goes to sleep after being darted. On the other hand, with a dubious trust account a trainer may need only be heard down the hall when the animal is darted to have their trust account go bankrupt.

Trainers have endless opportunities to make deposits and withdrawals into their trust accounts with animals. Expert trainers search for every opportunity to make deposits, no matter how small, into their trust accounts, and avoid even the slightest withdrawal unless it is absolutely necessary.

5. Minimizes the use of Time Out

Time Out from Positive Reinforcement is a punishment strategy that persists in some training programs but is rarely used by experts. Time Out generally happens in response to an undesirable behavior an animal exhibits, such as charging, loud vocalizations, or spitting in a trainer's face. When the trainer delivers the time out by, for example, picking up the food and walking away, the animal is left to consider the situation on its own, which often leads to confusion, frustration and aggressive behavior. Since punishment is a consequence procedure, the animal can't wind back the clock and undo the behavior to avoid the punishment, and, like with other punishment strategies, the procedure carries no information about what the animal should do instead to earn reinforcement.

Time Out is often associated with unclear communication, lack of sensitivity to an animal's body language, low rates of reinforcement and other poor training strategies. Some trainers blame the animal for unwanted behavior and get a feeling of "justice served" by taking the food away. Expert trainers point the finger at themselves and ask how they missed the precursors for the undesirable behavior, how they contributed to create the problem behavior, and how to avoid putting the animal in that situation in the future through better antecedent arrangement.

Expert trainers avoid using Time Out by using clear, two-way communication, high rates of reinforcement and training strategies that keep the animal engaged in the training dialog. If an animal gets distracted or loses attention, or the trainer notices motivation beginning to decline, an expert trainer will raise the rate, type or quantity of reinforcement and proceed to finish the session while keeping the animal engaged.

6. Accepts responsibility for their animals' behavior

Expert trainers understand the behavior of an animal is a reflection of their ability to train it. Often you can tell an expert trainer from an average trainer by the way he or she responds when a training session goes poorly. Where many trainers are quick to blame the animal for the mistakes, an expert trainer accepts responsibility for their part in problem behavior. Blaming the animal is often manifested with labels such as stubborn, distracted, messing with my mind and more. These labels are meant to justify the blame and relieve the trainer of responsibility, but they do nothing to solve problems or build a path toward more successful training sessions. When a trainer accepts responsibility for the animal's poor behavior he or she is empowered to look inside their training strategies for ways they could have avoided the problems and kept the training moving forward in a productive manner.

7. Demonstrates flexibility

No matter how long it took you to write the training plan and how many weeks it took for supervisors to approve your training plan, when you go into that first training session, you have only half the information. The animal brings the other half of the information. How many trainers have stuck to their training plan when it simply wasn't working? Or worse, stuck to the plan when the animal was offering an alternative that was equally acceptable, like offering the right leg instead of the left leg. Expert trainers understand that training plans are not recipes, they are an educated guess based on past experience, and when they guess wrong, it is not a sign of failure, it's an opportunity to start again with more information. Changing the plan in response to the information the animal brings is simply good training. For this to work well, a trainer should be in a system that embraces mistakes for the lessons they teach us and responds quickly to requests to make changes to training plans. Training is a dynamic partnership between co-influencers.

8. Practices two-way communication

The best training occurs when there is a clear exchange of information, both from the trainer to the animal and from the animal to the trainer. An expert trainer gives an animal a voice through its body language and behavioral choices. She responds to even the subtlest "tells" that the animal is uncomfortable or confused, and dynamically makes appropriate adjustments in the training.

An expert trainer offers a cue (S^D) at the precise moment the animal looks to the trainer for information then sounds the bridge the instant the animal performs the behavioral criterion. Offering a cue when an animal is eating, looking away, or otherwise distracted reduces the likelihood the animal will respond with the correct behavior. This lowers the overall rate of reinforcement in the training session, weakens the strength of the cue to predict reinforcement (contingent on behavior), and can lead to a pattern of repeated cues. Expert trainers deliver cues when animals are ready to receive them, using a short window of response opportunity to foster quick responding (short latency), which is a strategy called limited hold (Pierce & Cheney, 2013).

An expert trainer knows when and how to use a prompt to add more information when shaping a behavior. A highly skilled trainer moves hand prompts back just an inch or two to increase an animal's focus on the antecedent conditions instead of being focused only on the hand. Moving prompts away from the wire mesh, out of the animal's cross-eyed vision, is a crux move by expert trainers that promotes clear communication and improves learning behavioral criteria for reinforcement. Expert trainers recognize the extensive and often subtle body language prompts they bring to a training environment, both intentionally and unintentionally, and how to use these prompts to promote learning.

An extremely important aspect of using prompts is to know when and how to fade them. Because prompts influence behavior so effectively, it is common for the trainer's use of

prompts to be reinforced and continue long past their effectiveness to teach an animal criteria for behavior. Expert trainers fade prompts as soon as the behavior allows, e.g., when an animal performs a behavior without hesitation an expert trainer fades the prompt for that behavior. Experts know overuse of a prompt results in the animal learning to rely on the prompts as a cue for the behavior.

9. Backs up every use of the bridge with a well-established reinforcer

Some people believe they should not follow a bridging stimulus with another reinforcer each time they use the bridge. This is generally not best training practice. In fact, it can be confusing to an animal and lead to frustration and aggression. Some people bridge multiple times without a back-up reinforcer (i.e., primary or well-established secondary reinforcer), and mistakenly call this procedure a variable schedule of reinforcement. However, if the bridge is effective, it is indeed a secondary reinforcer and the trainer is using a continuous reinforcement schedule.

When a trainer does not back up the bridge with a reinforcer he weakens the ability for the bridge to predict a reinforcer is coming, which is actually a respondent extinction trial. Think of Pavlov's experiments with the dog. The metronome sound predicted the meat powder in much the same way a clicker or whistle predicts food, or another well-established reinforcer. Each time food is not provided after the click, the bridging stimulus loses some of its ability to predict food will be available. Fail to back up a bridge too many times and the conditioned stimulus will go back to neutral.

Bridging without backing up with a high value reinforcer is rather like if you made a living painting and selling keychains for $5. If each person that passes by said "Beautiful work" and bought a keychain, the words "Beautiful work" would be associated with the money. But if all of a sudden people started passing by saying "Beautiful work" but did not buy the keychain those words would begin to lose their meaning. After some time, you would probably stop listening to the words and only react when the person reached into their pocket to get the $5. This is the same thing that happens with trainers who do not reliably back up the bridge with another reinforcer. The animal stops listening to the bridge, but to the novice's eye it continues to look like it is responding to the bridge when actually it is responding to the trainer reaching for the food. Reaching for the food becomes the bridge. Many, if not most, animals trained in a system where the bridge is not reliably backed up with a well-established reinforcer, respond to the movement of the trainer's hand to the pouch or to present the food, as a visual bridging stimulus.

Event Markers (bridging stimuli) work because they predict the backup reinforcer. When you don't back up the marker it loses its strength to predict the backup reinforcer. The problem is, many or most trainers fail to track the effect on behavior when they decide to not back up the bridge and often miss important information like latency in response, below criteria performance, low motivation, aggression, or just giving up. When these things occur, it is often the case that a trainer will blame the animal for poor performance instead of realizing the cause was in the reinforcement strategy.

Experienced trainers understand when there is a need to do multiple behaviors without providing primary reinforcers, such as in water-work with a dolphin, they can use a cue as a secondary reinforcer to back up a bridging stimulus. However, they also know the cue needs to be a super strong predictor of food, contingent on behavior. This level of training can take months, even years for an animal to master.

Another way to accomplish multiple behaviors in a sequence without a primary reinforcer is to cue multiple behaviors and only sound the bridging stimulus after the final behavior in the sequence. In this way, the cue for each behavior is a secondary reinforcer for the previous behavior, and the bridge retains its strength in predicting primary reinforcement.

Clickers and whistles are common bridging stimuli in the animal training world. However, there are other bridging stimuli that are equally effect at communicating precise movement and approximations. Some trainers seem to get wed to the clicker or whistle and fail to recognize they may not be the best event marker for the situation. I have seen trainers continue to use clickers even when the sound frightens the animal, and when a clicker was extremely inconvenient to hold in the hand during the session. Clickers and whistles are great bridging stimuli in many situations, but not all situations. In over 40 years of training animals, it is extremely rare for me to use a clicker or a whistle if I am working eye-to-eye with an animal. I use the verbal bridge, "Good" in most all training situations. If I am going to work with a marine mammal underwater, or when working animals at a distance, I might use a whistle or clicker. But, when training up close, I use a verbal bridge the majority of the time. Some people have said to me that they can't use a verbal marker because they need to have multiple trainers working with the animals and they want constancy in the sound of their bridging stimulus. What they may be missing is that no two people can blow the whistle or click the clicker exactly the same because there will always be subtle variations in the sound. Plus, these are not robots we are working with, they are adaptable learners fully capable of recognizing the difference in the way each person delivers a verbal or other bridging stimulus. Experts know there is no magic in the clicker, the magic is in the communication and there are many was to communicate a bridging stimulus.

Clear communication is a cornerstone of good training. When the bridging stimulus is paired with a well-established backup reinforcer the communication is clear and the bridge retains its strength to predict reinforcement. When the bridging stimulus is not paired with a backup reinforcer animals are uncertain if reinforcement is available as a result of their behavior and criteria and contingencies for behavior are unclear.

There is a long list of expert trainers who support backing up each bridging stimulus with another reinforcer. These experts include but are certainly not limited to; Dr. Susan Friedman, Ken Ramirez, Karen Pryor, and Bob Bailey to name a few. They recognize the value of clear communication and how backing up every bridge with some form of reinforcement promotes good training. With this support, and an understanding of the

scientific principles of behavior change, especially variable reinforcement schedules, it is a wonder why people would choose to withhold a reinforcer after a bridge. When you have an opportunity to reinforce behavior, why would you not? Give it a try!

10. Demonstrates a commitment to welfare

There are countless pressures put on keepers and trainers in the zoological world these days. There are pressures to get animal enclosures cleaned and animals out on exhibit; pressures to get animals to crate, transport and perform for educational programs; and pressures to participate in a wide variety of husbandry and medical procedures. These daunting pressures can compromise a person's good judgement and motivate people to act without considering the welfare of the animals in their care.

Expert trainers keep welfare at the top of their plans when working with animals. They also understand how to accomplish institutional goals while promoting good animal welfare at the same time. Through good training practices and a keen eye for welfare concerns, expert trainers promote the most positive, least intrusive training methods to keep animals safe, healthy and enriched in their environments.

Conclusion

Expert trainers are more than reputation, charisma and purveyors of training equipment and jargon. Expert trainers earn their title through their actions. We all know experts in our field who excel at animal training to a point that we might call them an artist and even describe them as, "The Michael Jordan of Animal Training" or another famous athlete, musician or artist of some kind. Earning the labels "Expert" or "Artist" takes years of practice combined with knowledge, skill, and talent. But, unlike other art forms, the animal training field has yet to establish criteria for these high levels of reputation and performance. However, as the animal training community grows and evolves, and continues to share best practices through conferences of organizations like ABMA, IAATE and AZA, we will see more expert trainers, and better welfare for animals in our care.

Perhaps the most important and impressive characteristic of an expert is their commitment to ongoing learning, even when it means they have to change their mind about a strongly held belief or abandon traditional strategies. Experts are always trolling for better understanding and new procedures because they understand even professions grow and improve. And, when they stop learning and growing is when we should take away their expert card.

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