Exotic Animal Training: The Constructional Approach to Addressing Extreme Fear Responses and Aggressive Behavior

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Abstract

In zoological settings we are training everything from snarling big cats to flighty herds of antelopes. Traditionally our first step has involved delivering preferred food items. But some animals present such extreme fear responses or aggressive behavior in the presence of humans, that food holds little value. Trying to use systematic desensitization and keeping animals below threshold can be challenging to apply due to enclosure design. And results are often slowly realized in these cases, if at all. The constructional approach empowers animals to replace fear or aggressive behavior with desired responses. Usually within one or two sessions, the animal is approaching to accept desired items or experiences. When applying the constructional approach in zoos, we have a number of different challenges to address such as enclosure design, limited visibility, needing to know the natural history of the species, and how to apply the protocol to a group of animals. This presentation will show video examples of how the constructional approach is helping a variety of species of animals commonly cared for in zoos.

A Closer Look At least Intrusive, Most Positive

It has been proposed that the least intrusive, most positive interventions for behavior problems are addressed systematically using a hierarchy of interventions. Starting first with addressing medical, nutritional and physical needs, followed by antecedent arrangement. The next intervention is to use positive reinforcement to train a desired behavior. If this is unsuccessful the trainer is directed to using differential reinforcement of incompatible behaviors and/or alternative behaviors. If these interventions are unsuccessful the next recommendation on this proposed hierarchy is to consider extinction, negative reinforcement, and negative punishment. The final component of the hierarchy is to consider positive punishment. 1 From a very simplistic view this may help a novice trainer compartmentalize principles that influence behavior into categories from benign to coercive.

However, in real life application this is an oversimplification of how these principles work and can influence behavior in a potentially least intrusive, most positive manner. In addition, there
are many more procedures we consider when addressing extreme fear responses and aggressive behavior. These can include habituation, systematic desensitization, pairing procedures, and counter conditioning. Practitioners in an applied setting are often using a combination of these strategies to address behavior problems. Many times, unsuccessfully due to the inability to access the animal below threshold to begin associating desired items or experiences with the trainer.

For this reason, it is important to also recognize that within each principle or procedure there exists the potential for coercive or benign application. This can be dependent on a variety of factors. For example, positive reinforcement can be coercive when the animal has no other option but to present a single behavior in order to gain reinforcement (zero degrees of freedom.) If this behavior is attached to a critical consequence, such as presenting the behavior is the only option for acquiring food, it is also considered coercive. Animals may also experience excessive deprivation so that motivating operations make positive reinforcement more effective. The question becomes is the procedure relief from hunger or the desire to gain food? These questions of coerciveness can be addressed by giving animals more options (behaviors) with equal reinforcement histories to choose from, many ways to acquire food so that true choice exists and considering how and when you use food to train.

With this broadening of the understanding of the intrusiveness of principles it becomes evident that negative reinforcement is also not always coercive. On the coercive end of the spectrum animals are presented with an aversive stimulus and may present fear responses, aggressive behavior and escape responses. However there is an opposite end that is worth examining as it can be one of the least intrusive most positive tools in a training repertoire and a first step that will then allow the use of other principles such as systematic desensitization, pairing procedures and open the door to positive reinforcement. Often all these can be applied in one to two sessions.

**The Constructional Approach**

Constructional means building or constructing new behaviors that work better than what they are currently doing. The Constructional Approach was developed by Dr Jesus Rosales Ruiz and graduate student Kellie Snider as a procedure to replace undesired aggressive behavior primarily seen in dogs. It was known as C.A.T for short, the A standing for aggressive behavior (Constructional Aggression Treatment.) The Constructional Approach has since been used to address fear responses and other challenging behavior and gone through a number of name revisions. The acronym C.A.T still remains although the A no longer represents only aggressive behavior.

Dr Jesus Rosales Ruiz and the students from O.R.C.A. while not the first to ever use this approach, were the first to really start applying this broadly to help address dog to dog aggressive behavior and dog to human aggressive behavior in 2007. They also saw the value and lectured frequently to the dog community helping to bring more attention to this practical application procedure. Over the years they have refined the technique and continue to refine.
**Application of C.A.T**

C.A.T is based in negative reinforcement. However, what makes it successful is that negative reinforcement is used to construct a new behavior to replace fear or aggressive responses. The trainer teaches the animal it has the power to make a stimulus go away by presenting calm body language. However, this is done using the smallest reaction to the stimulus and it some cases no observable reaction. It requires excellent sensitivity to animal body language, knowledge of the species, good timing, etc. just as one would need when applying other training principles and shaping procedures.

To address an animal that has history of presenting an extreme fear or aggressive response to the presence of the trainer, the following steps would be applied:

1. Start far enough away that the animal is aware of the person but shows calm and relaxed body language.
2. Approach so that the animal can see the person until the slightest body language (or none) is observed and so that the animal acknowledges the person has moved. When this happens stop moving.
3. Wait until the animal presents any behavior that is acceptable that would be considered calm (looks away, scratches, rests its head, eats, closes eyes, etc.) then walk away.
4. Repeat this and raise criteria (move closer)
5. Continue this process until the animal is only presenting calm body language in the presence of the trainer.
6. At this stage several things may happen. Some animals may begin to approach the trainer, which can be negatively reinforced by walking away. Others may be very relaxed and willing to be close. Either way this is a signal to try to introduce desired items such as food.
7. Trainers may need to use systematic desensitization to slowly introduce offering food or may need to toss food closer and closer to encourage animals to approach.
8. This step is called the switchover and can happen fast. The training strategy can now focus on positive reinforcement for desired behaviors.

**Challenges in Zoological Settings**

C.A.T can be challenging to apply properly because it does require sensitivity to animal body language. It is important animals have the opportunity to be far enough away that they can be relaxed and comfortable. Animals also need time to relax and reach hormonal homeostasis in between repetitions. (Stress hormones return to baseline) It is possible to flood an animal if it cannot escape the approaching stimulus. An indicator this may have happened is if the animal gives little to no behavior to reinforce.

In zoological parks it can be difficult to get far enough away and still have line of sight due to enclosure design. There can be pressure to apply procedures in a timely manner. There are challenges with visibility with animals in areas that are dark, and it is difficult to see the animal’s
body language. Of greater challenge is working with herds and flock animals. For these animals it is important to not push for a reaction at all. Approach and retreat before any observable reaction is noticed. Tipping one animal into a fear response can cause the entire group to alert and the process must begin again.

Success Stories

Despite these challenges, the author (and clientele) have had excellent success utilizing CAT to address extreme fear and aggressive behavior with the species listed below:

Fear Responses:

- Kudu – herd captured from the wild
- Gemsbok - herd captured from the wild
- Springbok -herd captured from the wild
- Blesbok – herd captured from the wild
- Red Fox
- Somalian Wild Asses
- Grey Wolves
- Grant’s Zebra
- Bald Eagle

Aggressive Behavior:

- Sumatran Tiger
- Proboscis Monkey
- Western Lowland Gorilla
- Tahr
- Wildebeest (wild caught male)
- Ocelot
- Spectacled Owl
- Rhinoceros Iguana

Many of these examples involved single session transformations in which animals went from displaying fear responses or aggressive behavior to switching over to accepting food while presenting calm body language within one 20-40-minute training session.

Conclusion

Many animal trainers have been taught that negative reinforcement is inherently coercive. A closer look within the principle and other factors influencing the effectiveness of principles and procedures can reveal more information about the level of intrusiveness a strategy actually presents compared to the options available. Asking an animal to overcome an extreme fear
response or discomfort with a stimulus (such as people) to accept food or going to extremes to potentiate desired items may be a more intrusive approach and ultimately not very effective. The constructional approach offers a highly effective, more positive strategy in which the animal is empowered to present a new behavior to control its environment without being pushed over threshold. It can be used to introduce new people, objects, and when used in reverse can even help address animals who are uncomfortable being separated from conspecifics. It often produces results relatively quickly.

While there are challenges in applying it in the zoo environment, it is without doubt a procedure that can greatly help caregivers quickly connect with the animals once thought impossible to train, thus opening the door to many more opportunities to improve animal welfare with science based training technology.

References:

1. Friedman, S.G What’s wrong with this picture? Effectiveness is not enough. APDT Journal. March/April 2010
The differences between fear aggression and dominance aggression can be subtle, and they rely heavily on you being able to read your dog's body language. Dogsaholic and The Balanced Canine both have excellent infographics to help you decipher your dog's body language. Generally speaking, dogs who are fear aggressive will have more of a cowering, retreating posture than those who are dominant aggressive. Give everybody ample warning about how to approach your dog. Having a fear aggressive dog can be challenging, and working with them to address their fears can be an arduous task. However, there is hope for fear aggressive dogs and you shouldn't just dump them because you're afraid to put in the hard work required for them to have a happy, safe life. Fear-related aggression most frequently appears between the ages of eight to 18 months, as a young dog reaches maturity. This may be because increased boldness tends to come with maturity. But it's also likely because, over time, aggressive responses are reinforced; the scary stimulus (most often a human, when we're talking about aggression issues) backs off. Initially, a fearful pup generally tries to hide from scary humans by moving away, perhaps crawling under a chair. Many types of aggressive behavior in dogs are rooted in fear. The good news: You can reduce your dog's fear and the aggressive behavior. By Pat Miller, CBCC-KA, CPDT-KA. Dogs with fear aggression might retreat if someone approaches them but can then turn and nip at the person as they walk away. Fearful dogs often inflict shallow, rapid bites designed to remove the threat rather than doing serious physical harm. Can I cure my fear aggressive dog? Less rehearsal of aggressive behavior means there is more of a chance the behavior begins to decline. Try and make your environment as predictable as possible. Fear aggressive dogs do not like surprises so keep your dog's surroundings as calm as possible until she is more confident and able to deal with novelty. Manage Fear Aggression With 'Rituals of Behavior' Set up activities that help your dog feel more secure. Constructional Aggression Treatment, also known as CAT, applies the Constructional Approach to the treatment of fearful and aggressive dogs. Emotions and emotional behavior: a constructional approach to understanding some social benefits of aggression. Emotions are treated not as a cause of behavior, but as caused by behavior.