

Positive Reinforcement Training as an Enrichment Technique

Abstract:

Providing enrichment for an animal in one's care is an essential aspect in the management of that animal. Enrichment comes in a variety of forms, such as modifying the environment to stimulate the body, mind and senses, as well as introducing novel items, or other animals, into the environment. This paper will focus on another important enrichment technique: training. When done correctly, positive reinforcement training can increase physical activity and mental ability while giving the animal greater control over its environment. By carefully arranging the antecedents and consequences we communicate to an animal how and when to perform specific behaviors to earn reinforcers. When the animal chooses to participate in training, the activities can be even more mentally and physically stimulating than even the best enrichment devices traditionally used in enrichment programs.

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Dan Blair, CPBT-KA
Natural Encounters, Inc.

It is generally accepted in the training and zoological community that providing enrichment for animals is crucial to the well being of that animal. There is a plethora of unique and exciting ways to offer enrichment. One of these methods is the use of positive reinforcement training, a form of operant conditioning. Positive reinforcement empowers the animal to choose whether or not it wants to participate in training or interact with another form of enrichment. Providing enrichment combined with teaching the animal how and when to interact with this enrichment can be more mentally and physically stimulating than merely providing a different form of enrichment by itself.

Positive reinforcement is defined by Dictionary.com as: the offering of desirable effects or consequences for a behavior with the intention of increasing the chance of that behavior being repeated in the future, Ken Ramirez simplifies the meaning of training by using one word: "Teaching" (1999), and enrichment is stated in IAATE's Position Statement on Enrichment as "the provision of interactive opportunities that enhance the lives of animals," (2010). By fusing all these elements together, we arrive at this working definition: using desirable consequences to teach animals how to use interactive opportunities to enhance their own lives.

An Animal Enrichment article on the IAATE website provides five main categories of enrichment. These are sensory, novel objects/toys, food, environmental, and behavioral (Wright and Bogues). Each category can be heightened, in a sense, through positive reinforcement training.

Sensory: Triggering senses in new and unusual ways through olfactory, auditory, visual, or tactile senses such as taped sounds or vocalizations, novel smells, unique images (like looking in a mirror), and hot or cold objects (Wright and Bogues). An example of using training in this situation would be allowing the animal to choose the audio in their enclosure. Many caregivers like to play music for animals in their care, whether it is to keep them company when no one is around or to merely change the environment for the purpose of enriching. But what if the choice of music was theirs? A raven or a parrot could be taught to use a stick or small metal rod to push buttons on a radio directly outside the enclosure. This would give the bird multiple stations to choose from and even allow the bird to turn off the music if it wanted.

Novel Objects/Toys: Placing unusual objects into an animal's exhibit can cause the animal to display all kinds of natural behaviors ranging from play to aggression (Wright and Bogues). Sometimes, when a novel object is placed into the enclosure, the animal may become fearful of it or not know how to use the object, even if it is something the species should encounter in the wild. This is where training comes in. An animal can be taught to interact with an object and even use it in ways they may not have realized were possible. Using small approximations, the animal can be trained with positive reinforcement to move closer and closer to an object until eventually touching it. Once the animal realizes this item is safe to interact with, we may train the animal a variety of ways to use it. Let's take a simple item such as a rope. Helping a parrot to become comfortable with a rope in their enclosure could enable them to climb up and down this new item on their own. We can also use positive reinforcement to teach the parrot how to swing on the rope, a behavior that may not have happened naturally in this setting.

Food: Keepers can present food in a variety of ways such as in a simple puzzle feeder, box or other object, pieces hidden throughout the enclosure, scattered about the enclosure, or buried in a substrate. To get the food, the animal must use natural foraging behaviors and/or mentally solve the puzzle (Wright and Bogues). To train an enrichment behavior involving food, an animal could be given a puzzle with multiple parts. In order to obtain the reinforcement, the animal must solve each component, possibly in a specific sequence. Even though the animal had been trained on all aspects of the puzzle, it is ultimately up to them to figure out which order unlocks the novel food item inside.

Environmental: Exhibit design provides a variety of substrates, levels, and complexities to explore (Wright and Bogues). An animal in an exhibit with multiple rooms or doors that lead to other sections may need to be taught where to go or how to use these areas. For instance, a macaw in an enclosure with a large door that leads to an uncovered area meant for free flight, may need to be trained to go in and out that door. The same could be true for an exhibit in a zoo. Many animals are brought in at night and taught to shift either onto exhibit or into the night holding area everyday for a reward.

Behavioral: Positive reinforcement training between a keeper and an animal allows the trainee to choose its level of participation. Training with positive reinforcement is also useful in gaining the animal's trust, which may allow the keeper close, visual

observations of that animal (Wright and Bogues). I feel this category is the most important with regards to the subject of positive reinforcement as a training technique.

It is often seen that animals display excited behavior and tend to try to be close to those that have been working with them with positive reinforcement. And, for some, interacting with another animal is enriching in itself. Having the ability to choose to behave during these interactions enhances the quality of life. As shown by the phenomenon of contra-freeloading, animals frequently choose to behave to gain rewards, even when the same reward is freely accessible without performing a behavior. Positive reinforcement training provides that opportunity to behave. Essentially, the animal is being enriched during training while, at the same time, learning how and when to use an enrichment opportunity. (Here, I fight the urge to yell out “DOUBLE ENRICHMENT!!!”)

Besides being enriching itself, training for enrichment has many benefits for the animal involved in the training. One of the benefits for the animal is mental stimulation. By increasing the behavioral repertoire of the animals in our care, we are enabling them to think and explore their environment in new ways. Animals that have been taught several different behaviors and educated in the use of a variety of objects are more likely to investigate their environment and possibly discover a new way in which to enrich themselves or new ways to gain enrichment. With this mental stimulation also comes a degree of confidence. An experienced animal prepared to handle multiple situations becomes more confident in its own abilities and more likely to interact with new things, whether it is an object, environment, person, or training session.

Another benefit is an increase of physical activity. An enclosure or exhibit may be a perfectly designed environment for a certain species, but is wasteful if the animal does not know how to use various aspects of their surroundings. Helping animals learn to explore and use areas in their habitats encourages them to do so on their own, increasing their activity level outside of training sessions. A more active animal is generally a sign of a healthy one. As it continues to practice the new behaviors it has learned, the animal will again gain confidence, this time in its physical abilities. Physically fit animals may also be able to engage in longer and more dynamic training sessions, increasing the amount and intensity of the enrichment they are able to participate in.

With newly acquired mental and physical abilities gained through enrichment training, there may be an increase in novel behaviors displayed by the enriched animal. This in turn may influence the frequency of unwanted or detrimental behaviors, such as feather destruction, by providing the animal with something else to do. An interesting way of promoting the use of new, desirable behaviors and discouraging unwanted behaviors is by training of, what I call, inventive actions. It is a form of enrichment training that uses positive reinforcement to reward novel actions and creativity. This encourages the animal to search through its new repertoire and expand upon what has already been learned.

Not only is training enriching for the animals, but it is also enriching for the trainers involved. Witnessing animals in their care interact with hard thought out enrichment opportunities is extremely rewarding for the trainer. Furthermore, it challenges the trainer

to become more creative in their construction, design, and presentation of not only training sessions used for enrichment, but any aspect of the animal's life in their care. The enrichment technique of positive reinforcement training is not only enriching, but also, rewarding and beneficial to both the trainer and the trainee. It is a valuable technique for enhancing enrichment opportunities in all categories, whether it be in the sensory, novel objects/toys, food, environmental, or behavioral. By using this strategy, we are giving the animals we work with more information, empowering them to make their own choices and encouraging them to explore different possibilities. Ultimately, we are providing animals with the opportunity to further enrich themselves in any environment.

References:

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