

What is animal training?



According to Webster's II New Riverside Dictionary, to train is:
To instruct or condition to some manner of behavior
To make proficient through special instruction and drill
To cause...to grow in or take on a desired shape or course

When speaking of animal training, we refer to the modification of behavior toward a desired goal. Animal keepers, behaviorists and veterinarians alike are all trainers. We all influence behavior in some way, often without realizing it. Just acknowledging an animal as we walk by, can reinforce whatever it is doing, whether interacting with cage-mates, pulling leaves through hot wire, exhibiting aggression, etc. However, when we look at the definition of training and apply it to animal behavior, we are, in effect, teaching animals; teaching them to move to a specific area for food, teaching them to open their mouths for examination, teaching them to not be aggressive toward their cage-mates. When we speak of animal training, we speak of teaching animals to modify their behavior in some manner.

Why should we train animals in a zoo?

Zoos and aquariums throughout the world are recognizing the value of applying operant conditioning principles to their animal management programs. Well-organized animal training programs can facilitate:

- Coordinated efforts among management, keepers and veterinarians resulting in improved animal management;
- An animal health care program throughout the zoo that minimizes the need for chemical and physical restraints for procedures such as blood collection, urine and feces collection and other minor procedures;
- Opportunities for ongoing research projects involving the voluntary collection of samples (blood, urine, feces, milk, etc.);
- The presentation of animal programs to the public (i.e., keeper talks, wildlife presentations, etc.
- The use of operant conditioning, and more specifically positive reinforcement, can help keepers and managers modify animal behavior in ways that enhance animal husbandry, increase visitor satisfaction and provide the animals with greater enrichment opportunities.

Animal Management

Many zoos employ training principles on a daily basis. Keepers lure animals onto scales with food or use a number of other training tactics to entice them to perform desired behaviors. Animals are trained to enter chutes or crates without chemical immobilization for voluntary blood collection, wound treatment and other minor medical treatments.

Animal Husbandry

Husbandry training can provide unlimited opportunities for animal care. Animals can be trained

to voluntarily participate in routine physical exams and treatments. Keepers have trained numerous animals of various species to allow the staff to vaccinate them, eliminating the need for restraint. Many animals are trained to open their mouths for exam and present various body parts to the cage mesh, allowing keepers and veterinarians to examine the animals without using restraint. Husbandry training can also be advantageous in the early detection of illness. An animal in training is under frequent observation by the keeper staff. Consequently, keepers are able to detect the slightest changes in behavior--changes that could indicate medical problems even before the animal exhibits symptoms of disease. With a positive reinforcement program, keepers can encourage sick animals to participate in exams that they would otherwise be reluctant to concede to.

Elimination of Inappropriate Behavior

Training principles may also be used to modify or eliminate behaviors that are considered inappropriate, such as aggression. For example, competition at feeding areas can be eliminated by conditioning certain animals to eat at particular feeding stations away from their aggressors. Animals that beg from the public can be trained to perform more desirable behaviors that are incompatible with begging.

Research and Conservation

The benefits of an animal training program can be applied to zoological research and conservation programs, as many projects involve the collection of blood or other bodily fluids. For example, male animals can be trained to provide semen samples on cue and females to accept vaginal inspections and swabs. Such applications are invaluable in an artificial insemination program. Furthermore, operant conditioning techniques have been employed in promoting appropriate parental care to offspring, a necessary component of any species reintroduction program.

Training as Enrichment

An animal training program cannot only provide the animals with better physical care; it also gives them opportunities to be mentally challenged. In their natural habitat, animals must work to find food, build nests and defend their territories. In a zoo, many of these elements of natural life are diminished by the high quality of care that the animals receive daily; therefore, other methods of physical and mental stimulation are necessary. A training program allows the animals to make choices in their daily routines. Training sessions that are complex and time-consuming provide the animals with opportunities to think through dilemmas and solve problems. Through positive reinforcement training, the animals learn that they have choices and opportunities within their environments and also that their actions have consequences.

Visitor Education

Animals that are participating in a training program can be of great interest to zoo visitors, who are provided with opportunities to learn about the many facets of animal care. Viewing an animal show or training demonstration, or even talking with a keeper or volunteer can provide visitors with a better understanding of the importance of training in zoos. Many will go home not only with a better understanding of the animals and their behavior, but also with an increased awareness of the expert care provided to the animals.

How Do We Train Animals in a Zoo?...Very carefully!

Communication

Training is about communication – clear and honest communication between trainer and animal. It is about conveying what we, the trainers, desire from the animals and reading what the animals are communicating back to us through their body language and behavior. Training is also about following through with our promises to the animals. If we offer a reward for a particular behavior, it is imperative that we follow through and give the animal that reward. Conversely, we communicate through our actions when an animal does not perform a desired behavior. Leaving a training session or withholding rewards can send a clear message to the animals about our expectations.

Tone of voice

There are numerous ways that trainers communicate with animals. The trainer's tone of voice, whether calm and soothing, firm, or excited can convey different messages. An excited voice can motivate an animal, creating a positive and energetic training session. A depressed tone can set the stage for a dull session. A firm voice (example "no") can convey a trainer's disapproval in a concise manner.

Trainer attitude

Along with the trainer's tone of voice, many animals feed off the trainer's energy. An animal will likely respond more favorably to an upbeat trainer with a lot of energy than one who lacks energy and enthusiasm. If the trainer is not putting forth much effort, why should the animal?

Body language

Both trainers and animal can communicate a wealth of information in their body language. A frightened bird might sit with its feathers tight, whereas a bird showing territorial aggression might sit with its feathers up, seeming larger than it really is to discourage others from entering its territory. Hoofed animals might have their ears back when startled or frightened. Many animals' eyes widen when they're frightened. Some wag their tails when content. It is important to be able to read an animal's body language, as it is communicating something to the trainer that will likely affect the training session. The animal tells us, through its body language whether it is willing to perform the behavior we desire. This allows the trainer to then design a training session that will encourage the animal to want to participate.

Environmental distractions

It is important that trainers set the animals up to succeed. Therefore, it is beneficial to take into account the many potential distractions in a training session and work to minimize them or desensitize the animals to them. The wind blowing through the trees, a car going by, a person walking by, thunder, etc. can startle animals, possibly leading to a lack of confidence and trust in the trainer as well as fear-based or displaced aggression.

Accepting responsibility

A good trainer will accept responsibility for animal's actions. The trainer influences behavior through the communication of cues, delivery or reinforcement, and the overall tone of the training session. The trainer is successful when the animal complies with what was asked of it, as

it is assumed that the animal understood what the trainer was conveying to it. However, an animal that offers an incorrect response probably does not understand what the trainer desires of it. We cannot simply expect the animal to understand what we want – we must re-evaluate the session and find a better way to communicate our desires, whether by backing up a step or finding a different training tactic.

Operant Conditioning

Most zoos likely use operant conditioning as the training method of choice. Operant conditioning is a learning process in which the subject (animal) learns that there are consequences to its behavior and will change its behavior as a result of those consequences. In other words, a behavior is determined by its consequences. If the consequence of a behavior is positive, the animal will likely repeat the behavior. However, if the consequence is negative, the animal is not likely to repeat the behavior. A chimpanzee that inspects a termite mound and pulls out a termite will tend to inspect the mound more frequently in order to obtain more termites (food). The chimp was reinforced with a termite for the behavior of inspecting the mound. It has most likely learned, through its own behavior, that there are termites in this mound and will investigate the mound again--a conditioned, or learned, response. A tiger that is heavily rewarded for presenting its hip for an injection is likely to do so again when asked. However, if the injection is particularly painful, the tiger is less likely to offer its hip in the future.

Reinforcers

Operant conditioning relies on the use of reinforcers. A reinforcer is anything that follows a behavior that will cause and increase in that behavior. Reinforcers can be positive or negative.

A positive reinforcer is something the animal wants or is willing to work for. Food, praise and toys are positive reinforcers (assuming the animal likes what is offered). An animal that is positively reinforced is likely to repeat the reinforced behavior in the future.

A negative reinforcer is something the animal finds aversive – something the animal will work to avoid. The key to the negative reinforcer is that it ends as soon as the animal changes its behavior toward the desired behavior. For example, a bear that refuses to shift to a specific holding area might be sprayed with the hose. The bear then shifts to avoid the hose (negative reinforcer). However, as soon as the bear moves toward the desired area, the hose is turned off, allowing the bear to continue without being sprayed.

Training methods

There are many methods of training a behavior. While some might be more effective than others, it is often useful to study the natural history of the species, as well as the behavior and personality of the animal in training when designing a training project. In the zoological community, we often rely on positive reinforcement (positive reinforcer = something the subject wants or is willing to work for) as the method of choice when training animals. There are several recognized positive training techniques that can be successfully utilized in training behaviors.

Shaping

Perhaps the most highly touted method of training is shaping, or successive approximations, a learning process that builds on already-familiar principles. A trainer shapes a behavior by finding

a starting point - something that the animal already knows - and building on it one step at a time, reinforcing even the slightest progress toward the desired behavior. This, each approximation is in fact an intermediate goal in the process of obtaining the final behavior. This process is utilized in many disciplines. Dancers, for example, first learn basic dance steps, which they can then build upon to learn more difficult routines for a recital. Approximations are also important in mathematics; in order to learn multiplication, one must first learn to add.

Shaping can occur in a variety of ways. One of the most popular is targeting. Using this method, the trainer conditions an animal to touch a target with a certain part of its body. The target can be anything that will not harm the animal, such as a pole with a ball on the end (target pole), a Frisbee, the trainer's hand, etc. Once the animal understands this behavior, the target can be used to direct the animal into a specific position or area. Targeting is the basis for training many other more complex behaviors.

Scanning

Scanning, or capturing, a behavior occurs when an animal is reinforced for offering a behavior on its own and is rewarded as often as it is observed performing the behavior. As a result, the animal will begin to offer the behavior more frequently (a conditioned response) and therefore will be rewarded on a regular basis. The behavior can then be paired with a cue and requested during a training session.

Scanning is especially useful when training animals to vocalize, as there is no reliable way to train that behavior in a step-by-step manner. The downside to this method of training is that once the behavior is on cue, if the animal forgets the behavior, the only way to retrieve it is to train it from scratch; no training steps are available to trace back through and "remind" the animal.

Mimicry

In the wild, several species of animals typically learn by copying each other. Mimicry (also called observational learning) can be a useful training tool and has been employed in many training situations. Mimicry is beneficial when training an animal to execute a behavior that another animal performs correctly. If paired in a training situation, the animal in training may copy the behavior of the other. This can often save the trainer time in the training process. Many dolphin trainers rely on the fact that young female dolphins learn parenting behavior by observing and mimicking their mothers and other females rearing young. However, like scanning, a behavior that has been learned through mimicry has no training steps that the trainer can fall back on if it is forgotten.

Baiting

Baiting, or luring an animal with food or other desired item, can be an effective method of behavior modification in the early stages of training a new behavior. Baiting can be a means of desensitizing an animal to a new area or luring it to a specific area such as a squeeze cage. However, this method should be discontinued after the first steps of the training process. If it is continued, trainers may begin to rely on their ability to bait the animal through a desired behavior, which can result in poor performance of the behavior. If an animal is baited onto a scale and is interested only in the food, it might become restless and move around on the scale, preventing an accurate weight measurement. A more efficient approach is to use the bait only to

entice the animal onto the scale initially and then using other training methods, condition the animal to remain on the scale for a duration of time.

Many trainers employ several training methods at once when training a behavior. While all are useful, their effectiveness often depends upon the individual animal as well as the behavior being conditioned.

The benefits to an animal training program can be far reaching – from shifting on and off exhibit to enhancing breeding programs for endangered species, to training animals to assist in their own physical exams, to increasing visitor education and appreciation of the species and their habitats. Whatever the reason, a good animal training program will incorporate good human-animal communication, well defined goals, and the benefits of positive reinforcement.

The appropriate use of animal training techniques is only part of a successful training program. Teamwork among staff members will become the essence of its success. A program cannot be successful unless all members work together to achieve the goals that have been set. Working as a team will allow everyone to experience the progress as well as the setbacks. Together trainers can overcome setbacks by sharing training experiences and learning from one another.

A training program will succeed with the utilization of positive reinforcement. Not only are the animals reinforced; the trainers are rewarded as well. Co-workers are valuable resources and can provide each other with positive reinforcement in addition to constructive criticism. Positive attitudes are a must in a training situation and should be maintained by the training staff. Most likely this optimism will become contagious.

Armed with positive attitudes and open minds, the animal staff will be better prepared to work together. Trainers can observe each other's sessions and provide feedback that will help to maintain consistency in training throughout the Zoo. Working together, using consistent training methods and principles, both animals and staff can be given opportunities to learn and grow and to lead a fulfilling and enriching life.