

# The Right Tool For the Job

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## Abstract

The move toward more positive, less intrusive training methods has significantly improved the welfare of many animals at zoological facilities. However, positive reinforcement training alone doesn't guarantee welfare benefits for animals in human care. It is sometimes the case that animals have experienced better welfare before the implementation of a positive reinforcement-training program. Recognizing that humans and other animals are unique, the right tool for the job needs to 1) be measured on a case-by-case basis, 2) change with current conditions, and 3) evaluated using a common benchmark. With both the AZA definition of Animal Welfare and Friedman's Procedural Hierarchy (2008, adopted from the ABA standards) as guides, this paper explores animal training and management practices emphasizing how to choose the right animal, trainer, and procedure for behavior management programs in zoological facilities.

## Introduction

Animal keepers and caregivers are becoming animal trainers as they implement positive reinforcement training strategies to improve the management and welfare of the animals in their care. Animal keepers have modified the behavior of their animals for as long as animals have been in human care. However, the training techniques they often used relied on force and coercion rather than the positive reinforcement methods employed by contemporary animal trainers. Today, animal keepers and trainers apply the principals of positive reinforcement technology throughout the profession, and they do it at varying levels of competency. A basic level of training skill is often enough to enable a keeper to accomplish routine management behaviors like shifting animals on and off exhibit. However, expert skills are required to teach animals to willingly participate in more complex behaviors, such as advanced husbandry and medical procedures. Advanced skills are also needed to work with many full-contact program animals without the use of negative reinforcement and punishment.

Evaluation of an animal's suitability for inclusion in training and education programs begins with the understanding that every animal is an individual. What works for one animal may not work with another. Many people don't understand this concept as they search for training plans and recipes for their particular species of animal with hopes that following the directions will guarantee the perfectly trained animal. Trainers have asked, "What is the best working weight for a Harris Hawk?" Or "What is the best treat to use to teach a gorilla to accept an injection?" No two animals will behave the same, and no one animal will behave the same in every condition.

There are two important benchmarks to help evaluate the right tool for the job. The AZA's Animal Welfare Committee (AZA, 2014) defines welfare as; "An animal's collective physical, mental, and emotional states over a period of time and is measurable on a continuum from good to poor. *Explanation:* An animal typically experiences good welfare when healthy, comfortable, well-nourished, safe, able to develop and express species-typical relationships, behavior and cognitive abilities, and not suffering from unpleasant states such as pain, fear, or distress."

We will also use Friedman's Hierarchy of Behavior Change Procedures (Friedman, 2014). In this hierarchy, procedures are organized from least to most intrusive. She 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

Medical, nutritional and physical conditions are motivating operations that should be considered and addressed before starting any training program. Once a keeper knows an animal is healthy, other antecedent stimuli can be adjusted to make the right behavior easier to perform. This might include limiting distractions, moving various items in the training environment, prompting behavior, and more.

Positive reinforcement is the training tool of choice for trainers committed to the most positive, least intrusive form of animal training. In the positive reinforcement training environment the animal has control and can choose to participate or not. When animals learn their behavior produces desirable outcomes, they not only behave more, they expand their understanding of the behavior-consequence

contingencies, which in turn gives them even more control of their environment and reinforcers. Control is a fundamental goal of the procedural hierarchy as control over outcomes is itself a primary reinforcer for behavior (Friedman, 2014).

In differential reinforcement of alternative behavior (DRA), reinforcement is delivered for a specified alternative to the unwanted behavior. (Athens & Volmer as cited in Chance, 2014). With a DRA strategy a trainer might use positive reinforcement to teach a chimpanzee to gently hand a stick to a trainer to replace the behavior of trying to poke the trainer with the stick.

Extinction, Negative Reinforcement and Negative Punishment are listed together in the hierarchy in no particular order, as no research could be found ranking them according to intrusiveness. These training procedures have a potential for detrimental side effects and can cause unnecessary withdrawals from the trust account with a trainer.

Positive punishment is at the bottom of the hierarchy because takes away choice and control from the animal and relies on the delivery of aversive stimuli. However, there are times when positive punishment is the right course of action, especially where an animal's safety or welfare may be compromised if the behavior continues. Fortunately, positive punishment as a primary training strategy for shaping behavior is being replaced by positive reinforcement procedures in most contemporary zoological settings.

### **The Right Human For The Job**

Training animals in a zoological setting is far more than a click and treat. Today's animal trainer works with multiple species in a wide variety of training conditions and is responsible for meeting demanding program goals. Considering the right human for the animal training job begins with evaluating a person's skills and knowledge.

Animal training is a relatively young discipline in the zoological community with newly evolving standardization of training procedures. However, the majority of animal caregivers learn training skills on the job, often just by doing it on their own with little or no guidance. The number of zoological institutions with formal behavior management programs is relatively small compared to the number of facilities where keepers are involved with training animals each day.

Directors, veterinarians, curators, and others often describe individual trainers as having expert skills. However, the criteria for what makes an expert requires education and experience to validly judge. Operationalizing what an expert trainer *does* should be helpful to the zoological community.

The following is a list of a few of the most important behaviors commonly observed in "expert" animal trainers:

**Focuses on positive reinforcement.** Positive reinforcement is more than giving an animal a treat after correct behavior. Expert trainers use a vast array of reinforcers, both primary and secondary, and frequently adjust the type and quantity of reinforcers to maintain the strength of these stimuli to increase behavior. Expert trainers know an animal's life is filled with competing reinforcers tugging at their behavioral choices, and that successful training sessions often hinge on variability, novelty and variety of reinforcers.

Expert animal trainers use positive reinforcement strategies with humans in their lives as well as the non-human animals in their care. Rather than catching people doing something wrong and punishing their behavior, expert trainers arrange the environment for success with clear, honest communication and then catch people doing something right and reinforce that behavior. The best leaders are the ones who walk the positive reinforcement talk.

**Avoids the use of punishment.** People often think of punishment as forcing animals to comply with commands through abusive methods. However, even less intrusive procedures that decrease behavior can involve punishment. Even time-outs, as mild as they may appear to the trainer, are a form of punishment, and should be used with expertise. A poorly implemented time out can easily lead to confusion, frustration, and aggression, which is the reason most advanced trainers rarely use time outs when training animals. Expert trainers avoid punishment whenever possible because they understand the potential for detrimental side effects such as aggression, decreased behavior, escape/avoidance behavior, and generalized aversion to features in the environment. Rather than asking, "How do I stop the animal from doing that behavior?" an expert trainer asks, "What do we want the animal *to do* instead?" This empowering approach of replacing unwanted behavior with more desirable behavior using positive reinforcement, sets expert trainers apart from average trainers.

**Takes responsibility for behavior.** Too often we see keepers and trainers blaming their animals for poor performance and undesirable behavior. They label the animal obstinate, aloof, not motivated, messing with their mind, pushing their buttons, aggressive, and scared. It is a crux move in gaining expertise to realize that labels do little more than relieve the trainer of responsibility for the behavior. The fact is animals can learn the behaviors we want to teach them. It is the trainer's knowledge and skills that are the most important factors in determining the animal's progress in a training session. Expert trainers do not blame their animals for poor performance; instead, they evaluate their own behavior, reevaluating their skills and strategies to find more successful training tools. As Friedman says, "Training never fails because expert trainers keep dynamically changing what they do until the animal succeeds."

**Demonstrates flexibility.** Expert trainers know a training plan is not a roadmap; rather, it is a set of predictions about how to move an animal's behavior from

where it is to where they want it to be. The animal's behavior provides the feedback that confirms or disconfirms those predictions and leads the trainer to revise what s/he does to accomplish the training goals. Trainers bring only half of the information to the training session and the animal brings the other half. An expert trainer has a plan, but is flexible to change the plan once the animal's behavior provides the critical second half of the information. Some trainers try to force their plan, even when it is not working, instead of adjusting what they do in response to the animal's' behavior.

**Carefully arranges antecedents.** The condition in which training occurs varies from minute to minute, and antecedent stimuli can make or break a training session. Some antecedent conditions cannot be predicted or controlled, such as unexpected sounds, the appearance of a new person, or weather conditions. Other antecedent conditions can be influenced or adjusted by trainers who prepare the environment for the best learning experience. Expert trainers evaluate and adjust antecedents to promote desirable behavior.

An expert animal trainer looks at the training environment much like a professional quarterback looks at the field before the snap of the football. Each little detail is observed and then adjustments are made before any action takes place. Where some trainers might blunder in, oblivious to the behavior of the animal, an expert will carefully observe the setting events and make adjustments. The position of the stool in the den, the sun shining through the window, the proximity of the trainer and others in the room ... no small detail goes unnoticed and adjustments are made to set the occasion for success (i.e. a high rate of reinforcement that promotes desirable behavior).

**Carefully arranges consequences.** Where careful antecedent arrangement sets the playing field to promote desirable behavior, consequences are the "legs" that move behavior downfield. Expert trainers are highly skilled at adjusting consequence to increase behavior. They constantly evaluate the effect of reinforcers on behavior and make adjustments in rate and value to increase motivation. Advanced trainers use high rates of reinforcement to increase the animal's attention span, make deposits to the trust account, and communicate clear behavior-consequence contingencies. Expert trainers also use a variety of reinforcers, both primary and secondary, to establish and maintain behavior.

**Practices two-way communication.** Expert trainers are highly skilled observers of animal body language and give the animal a strong voice in their relationship as they form a two-way communication system, a dialogue. They establish partnerships with animals instead of trying to dominate or force animals to perform behaviors.

Through careful observation of an animal's body language a trainer can empower the animal with a level of control in its environment where the animal's "voice" (i.e., body language) is as influential as the trainer's voice. A trainer gives a cue

for the animal to perform a specific behavior, and then observes the animal's responses, emotional and behavioral, through its body language. This feedback is information for the trainer to determine if the animal is motivated to participate in the dialogue. If the body language shows the animal is not motivated, the trainer can change the antecedents to encourage the animal, or stop the training session and try again later. When cues and criteria for behavior are clear, animals learn quicker, rates of reinforcement go up and motivation increases. Expert training is a feedback loop between the trainer and the learner.

The most successful animal trainers are often the ones who are the most sensitive to their animal's body language. As a trainer approaches an animal's enclosure there is an important opportunity for the trainer to observe the animal's body language and determine the speed of approach, or if approach is even advisable. Too often, keepers just march up to a training area with little or no attention to what the animal's behavior is telling them. Expert trainers never invade an animal's personal space, approaching only when they are invited in by the animal's body language.

**Uses the most appropriate bridging stimulus for the conditions.** Some trainers have said things like "I tried clicker training and it didn't work," or "We haven't started our training program yet because we don't have a clicker." Expert animal trainers know there is no magic in the clicker. The magic is in the contiguity between the correct behavior and the consequence. Clickers are one of the many bridging stimuli (event markers) available for trainers to increase that contiguity, i.e., to precisely mark a correct performance of a behavior. Clickers and whistles are great event markers in many conditions. However, in some conditions, verbal, visual, or even a tactile bridging stimulus might be a better tool for the job.

The event marker is most important when shaping behavior through successive approximations. Once the behavior is mastered there is usually no need to continue using the bridging stimulus, i.e., when a hawk steps onto a trainer's glove to receive a food reinforcer, or an animal walks into a travel crate, or a sloth reaches out to take a piece of food from a trainer's hand. However, many trainers continue to use a verbal event marker, such as the word "good" in these cases. By the time an animal performs in an ambassador animal role, its behavior should be reliable enough that clickers, whistles and other audible event markers are no longer needed.

Some trainers routinely thin the pairing of the bridging stimulus with the back-up reinforcer by presenting the bridge after each correct performance of a behavior but only providing a back-up reinforcer for some of the behaviors. For instance, the animal may perform three behaviors at the desired criterion and receive a bridging stimulus for each behavior but receive food only after the third behavior. This is a strategy explored in laboratory settings and sometimes used in marine mammal training programs where systematic thinning of the backup reinforcer

over time allows the bridging stimulus to maintain its reinforcing properties. However, without a systematic thinning procedure, the bridging stimuli quickly lose their reinforcing strength. This has become one of the most common weaknesses in the implementation of positive reinforcement training programs in the zoological field, as keepers and trainers haphazardly thin the pairing between the bridging stimulus and the reinforcer.

Animals trained with this type of inconsistent pairing of bridge and back-up reinforcer often lose motivation to participate in the training session, exhibit a high level of incorrect responses to cues, and show frustration-induced aggression. When this happens trainers often blame the animal instead of recognizing it was the low rate of back up reinforcement that caused the problems. By placing the blame on the animal, trainers miss valuable information about how to increase motivation through clear communication and high rates of reinforcement, including consistent pairing of the marker and back up reinforcer.

Some trainers believe since the bridge is a secondary reinforcer they don't have to provide a back-up reinforcer. They incorrectly call this a "variable schedule of reinforcement." However, if the bridge is truly a secondary reinforcer (as evidenced by its ability to increase or maintain behavior), the trainer is using a continuous schedule of reinforcement. The inconsistent pairing of the bridge and backup reinforcer results in a respondent extinction trial (i.e., delivery of the conditional stimulus without the subsequent unconditional stimulus), just as Pavlov's dogs stopped salivating to the sound of the metronome when it was no longer predictive of the meat powder.

When trainers inconsistently pair the bridge and the back-up reinforcer, animals eventually stop listening to the clicker, whistle or other audible marker, and begin to focus on the most salient information predictive of back up reinforcement, which is often the action of the trainer's hand moving to the reinforcer. This visual bridging stimulus often replaces the audible marker and keeps the animal in the training environment a bit longer, usually only until the low rate of backup reinforcement reduces motivation and the animal either leaves the session, shows aggression, or the behavioral response deteriorates to the point the trainer ends the session.

Expert animal trainers understand that the effectiveness of a bridging stimulus is *conditional* on pairing with, and predictive of, a back-up reinforcer. They seize each opportunity to provide high-value reinforcers, primary or secondary, to keep animals engaged in training and promote the most effective and positive learning environment.

**Fades prompts.** Prompts are antecedents that increase the probability that the criterion behavior will be performed. Prompts can be body movements, target poles, vocal encouragement, food tossed into crates or holding areas, etc. It is common to see keepers calling animals, showing food items to lure animals, and

throwing toys into stalls, etc., to get animals to shift on or off exhibits or perform other behaviors. Prompts should be faded quickly in the shaping process to help the animal understand the cue-behavior-reinforcement contingencies. Expert trainers fade prompts fast, often after just two or three reinforced approximations, to let consequences become the driving influence on future behavior.

**Demonstrates commitment to welfare.** Animal training at the highest level involves the artistic application of scientific principals. To achieve expert level takes years of education, experience, dedication and practice. Fortunately, the number of expert trainers in the zoological world is growing rapidly, which is certainly a boon to animal welfare. However, there is still much progress to be made.

Some of the most challenging animal training situations occurs in the full-contact ambassador animal areas. Where most animals trained in zoos, aquariums and aviaries, participate in non-contact or protected contact training environments, ambassador animals are more likely to be trained in full contact conditions where they are held or restrained in some way during presentations. Inherent to restraint is the use of negative reinforcement and punishment to influence behavior. These aversive approaches are often associated with detrimental side effects like escape/avoidance, aggression, apathy, and phobias.

An important difference between training full contact animals and protected contact animals is in the level of control the animal experiences. When training great apes, carnivores, or any animal behind barriers, the animals have the ability to leave the training session at any time. When training and presenting most full contact ambassador animals, such as raptors, small mammals, reptiles, the animals are most likely restrained with leashes or held in the hand in some manner, reducing the animal's control in the environment. The challenge then is to balance the educational program goals with the welfare needs of the animal. This is a job for an expert trainer.

Following Friedman's procedural hierarchy of most positive and least intrusive approaches to behavior change is a good first step toward improving performance and welfare of ambassador animals. Expert trainers use positive reinforcement to teach a wide range of ambassador mammals to voluntarily step into their harnesses and wait for the trainers to tighten the straps. These animals can also be taught to walk next to the trainer's side with a slack-leash used only for safety and not for directing the animal through aversive pressure of the leash.

Bird trainers all over the world are transitioning away from the use of jesses to restrain birds on a glove. They are moving toward giving the animals more choice and control by replacing the negative reinforcement inherent in jesses with variable duration schedules of positive reinforcement to teach birds to sit on the glove for long periods of time. Trainers are also adjusting their programs to use positive reinforcement to teach birds and other animals to sit on perches, stumps,



and trees instead of being secured to a gloved hand as the presenter delivers educational messages.

This move toward positive reinforcement training strategies increases animal welfare, but requires greater skill than the more traditional style of handling some ambassador animals using negative reinforcement. Many raptors in educational programs have learned to sit on the glove to avoid the aversive conditions of being caught up by jesses and hanging upside-down when they attempt to fly off the glove. This traditional style of presenting raptors is relatively easy to teach to a keeper or docent, and most raptors will eventually learn to sit on the glove to avoid the aversive consequences of attempting to fly off. However, this form of training may decrease the behavior but will not eliminate the problem behavior, and most raptors will continue to bate, or try to fly off the glove, during presentations. The struggling bird not only experiences stress, but also presents potentially detrimental non-verbal messages to guests watching the program.

Teaching a bird to sit on the glove is not difficult for an experienced trainer with a good relationship with the bird (i.e., dense history of reinforcement). Reinforcing small approximations of longer duration of sitting behavior is a basic strategy that most expert trainers can easily understand and apply. With each reinforcer, the trainer adds trust to the account shared with the animal. Generalizing the duration of sitting behavior to new environments is the final step of the process that might normally take an expert trainer only a few days to accomplish.

Again, teaching these behaviors is fairly straightforward for full-time, experienced trainers. However, docents or volunteers who work only a few days each month are often the ones handling the ambassador animals. Volunteers provide extremely valuable services for zoological facilities, and many education programs have come to rely on them to maintain their current level of programming within their budget constraints. However, working a few days a month is insufficient to the consistency required to establish trusting relationships and training skills that are the foundation of positive reinforcement training programs.

The question for zoological facilities looking to improve the welfare of ambassador animals is far more complicated than asking if it is best for docents or full-time staff to handle and train the animals. Surely there are many docents and volunteers with better relationships and training skills than some full-time keepers or trainers. The most important question should be, "Does this particular person have the skills required to create the relationship, and use the most positive, least intrusive form of training with this particular animal in these conditions and if not, how do we fulfill our program obligations without compromising the welfare of our animals?"

## **The Right Animal For The Job**

Animals in zoological facilities fall into two main groups: exhibit animals and ambassador animals. Ambassador animals participate in educational programs, including shows, demonstrations and outreach. Exhibit animals are taught to participate in husbandry and medical procedures, and may also participate in keeper talk programs where they are taught to perform species-typical behavior for interpretation to the guests. The focus of this section is ambassador animals and their participation in educational programs.

When acquiring any animal, it is always best to first consult with experts who have successfully raised and trained the species. Keep in mind that behavior is a study of one. Just because one zoo has a calm, friendly kinkajou in their program does not mean that all kinkajous will behave in this way. No matter what the species you are considering, seek out experts who have worked with them successfully, and speak to as many people you can find to learn from their experience. You should research the species suitability for use in educational programs throughout its life, inclusive of all developmental stages, keeping in mind there will be considerable variability in individual animals within all species. Consider the extent to which you can make a “cradle to grave” commitment and ask yourself questions about the animal’s future, such as, what happens to the animal if it doesn’t work out for my program? Will the animal participate in SSP and other population management programs? Will the animal be housed with conspecifics or alone? Will appropriate housing always be available, and will there be a commitment to the animal’s welfare for the rest of its life?

### **Hand Raised Or Parent Raised?**

There are many animals, hand-raised and parent-raised, available to zoos for use as ambassador animals. Though generally considered better breeders, parent-raised animals often require more time to train and a more experienced trainer to build trusting relationships that promote good learning outcomes. Though hand-raised animals are generally more tractable and make better ambassador animals, at least when they are young, there are a few detrimental side effects that may result from hand rearing. These behaviors may include aggression, extreme vocalizing, bonding to one person and avoidance or aggression to other people, just to name a few.

Corvids and owls are best suited as ambassador animals when they are hand-raised. Many keepers, educators and trainers have attempted to train parent-raised corvids and owls for use in their programs and have failed to provide the level of welfare that meets the standards set forth by the AZA welfare committee or Friedman’s Procedural Hierarchy. Often these birds have come from rehabilitation projects and are non-releasable. Well-meaning curators, directors, veterinarians and others believe they are doing the birds a service by taking them from the rehabilitation facility and bringing them into their education department. However, these parent-raised birds rarely adjust well to life in an education program and often experience unacceptable levels of stress, even when handled by expert trainers. Parent-raised owls and corvids rarely make suitable

ambassador animals; however hand-raised owls and corvids are more likely to make good ambassador animals.

One straightforward-way to tell if an animal is experiencing stress is by observing its body language. When an animal attempts to avoid a person as he or she approaches, it is possible the animal is already experiencing some level of stress. If the person blocks the animal's attempt to flee and forces it to step onto the glove, submit to being grabbed, or forced into a crate, there is a higher likelihood that the animal will experience some level of stress. When a bird bates, or tries to fly off of a gloved hand and is caught up by jesses, the level of stress increases. Birds that are forced to step onto gloves, or are restrained when they bate off of a glove, experience loss of control in the situation. Loss of control is often associated with reduced welfare. This is not to say that every time a bird bates off a glove its welfare is compromised to the point it should be taken out of the program. However, it is to say that every time a bird bates off the glove the trainer should recognize the potential for reduced welfare and take action to teach the bird to sit on the glove using positive reinforcement training.

Hawks, eagles and falcons are generally better suited as ambassador animals when they are parent-raised. Even though parent-raised birds can take longer to adjust to working with humans, their behavior later in life is generally more adaptable than their hand-raised counterparts. A hand-raised hawk or falcon is more likely to develop loud and incessant vocalizations that may last into adulthood. A hand-raised hawk can also behave aggressively to humans, which can be extremely dangerous. Many trainers have received puncture wounds to the face, hands and arms from hand-raised hawks. Parent-raised hawks, eagles and falcons are generally better than their hand raised counterparts.

### **Parrots**

Hand-raised parrots are generally easier than parent raised parrots to work with when they are young, but may be more likely to develop behavior problems as they mature. Hand-raised parrots can bond with human caregivers, which often results in the bird becoming aggressive to everyone except the preferred human. An expert trainer can usually reduce the amount of aggression, and generalize approach and step-up behaviors to other humans. However, success depends on keen insights and expert training skills. Parent-raised parrots can be more difficult to work with in the early stages of training and may take longer to establish trusting relationships with trainers. However, they are less likely to exhibit infantile fluffy, food-begging, clinging type of behaviors that are often seen in hand raised birds. Parent raised parrots may also be less likely to bond with one person or to behave aggressively to other humans later in life than a hand-raised parrot.

It is sometimes the case that zoos accept donated parrots to add to their ambassador animal collection. These companion animals often come with behavioral problems that have led to the owner's decision to relinquish the bird.

These problems are generally associated with biting and loud vocalizations that have been inadvertently reinforced by the human caregivers. It is certainly possible to replace these unwanted behaviors with more desirable behaviors. However, it takes time, dedication and skillful training to deal with these common problem behaviors.

Many people have tried to train parrots to participate in free flight behaviors only to find that the parrot does not have the skills and confidence to fly. Many, if not most, parrots in educational programs grew up with their wings clipped in their first year of life. With this flight impairment, the bird did not acquire the flight skills during this critical stage of their life. Crashing to the ground punished their attempts at flight and therefore most of them stopped trying to fly. Later in life, when an educator decides to train the bird to fly in the program, the bird hesitates to fly even though the bird's wings have completely grown in. Although the bird has the physical ability to fly, it does not have the confidence because flight is a skill it never learned during its developmental period. This is similar to a person learning to ride a bicycle at the age of 40 after never having the opportunity to ride a bicycle when he or she was young. It is certainly possible for the 40-year-old person to learn to ride the bicycle, but it will take much longer and require more dedication and effort than a youngster learning to ride a bicycle. Teaching a parrot to fly later in life is an extremely difficult process requiring an expert trainer and usually several months of daily training.

### **To Jess Or Not To Jess?**

Jesses, or the leather straps on raptors' legs that prevent them from flying away from a trainer's gloved hand, have been used successfully on raptors for hundreds of years. However, recently people in zoological facilities have begun using jesses on a wide variety of birds, from woodpeckers to cattle egrets and even chickens. Unfortunately, the use of jesses on non-raptors can be dangerous. Few bird's legs are as strong as a raptor's legs and can withstand the strain of jesses. The International Association of Avian Trainers and Educators (IAATE) has published a position statement that recommends jesses be used only on raptors.

If jesses are not to be used on non-raptor ambassador animals, such as kookaburras, corvids, tawny frogmouths, etc., then how should these birds be presented as ambassador animals? The limited list of alternatives to jesses include exhibiting in a secure environment such as a cage, clipping wings, using a harness, and teaching a bird to perform (e.g., station and recall behavior) free of restraints. Cages are unattractive, and clipping wings can be very dangerous as uncontrolled flight can result in crashes to the ground or other objects and cause injuries. A harness is safer than jesses, but requires a skillful trainer use positive reinforcement to teach the animal to voluntarily participate in donning the harness. Working with the bird free of restraints gives the animal more choice and control, but requires a highly skilled trainer to teach the animal to reliably enter a crate or other transport unit, plus remain with the trainer and not fly away

where its welfare may be compromised. When considering the use of jesses on a non-raptor bird, perhaps the most important question to ask is “Is this the right animal to have in our program considering the positive reinforcement training skill of our staff?”

### **Mammals And Other Exotic Animals**

The numbers and types of exotic animals participating in ambassador animal programs are steadily increasing in zoos. In some cases the skill level of the handlers and trainers is also increasing. As trainers acquire knowledge of the science of behavior change and become more skilled in the application of positive reinforcement technology, the welfare of the animals in their care improves. Expert trainers teach animals to voluntarily participate in valuable behaviors such as putting their head through a collar or harness instead of being restrained for harnessing; walking on a slack leash instead of tugging at the end of the leash; stepping onto a trainer’s hand instead of being cornered and picked up; and walking into a crate instead of being put in a crate, just to name a few.

The positive reinforcement training skill level of the staff is extremely important to consider before acquiring any animal to be used in the ambassador animal program. Without skilled trainers, facilities should seriously question each acquisition based on the welfare of the animal instead of the impact the animal may have in the program.

Housing, staff training, breeding programs, and “cradle to grave” strategic plans are important considerations for all ambassador animals, including the many exotic animals now being used in educational programs. Many mammals are simply not the right fit for some programs. From kinkajous to lemurs, pigs and cheetahs, many mammals are attractive additions to educational programs but can be incredibly challenging and even dangerous without expert trainers managing their behavior.

### **Conclusion**

The move toward more positive, less intrusive forms of animal training has empowered caregivers with management and healthcare tools that improve the welfare of their animals. However, the skill level of practitioners in this relatively young field of training in the zoological world varies greatly. To keep pace with the evolving technology, keepers and trainers should increase their knowledge and skills associated with the most contemporary animal training practices. Managers and supervisors should also expand their knowledge of the science and technology of behavior change and develop criteria with which to evaluate the skill levels of trainers at their facilities. Evaluation of trainers’ skills should be based on observable training behaviors in conjunction with knowledge of scientific principals.

Each animal brings to the training environment its genetic makeup and personal learning history. When considering an animal for inclusion in a training program,

especially one that involves full contact handling, the animal should be evaluated as an individual instead of using species generalities. Considerations should also be given to the condition in which an animal was raised and how that may influence its ability to participate in educational programs.

Not everyone will become an expert trainer, and not every animal will be the best for every job. However, through a commitment to the most positive, least intrusive training methods everyone can contribute to improving the welfare of animals in their care. Avoiding the use of force and teaching animals to willingly participate in handling and training programs is the ethical compass that should guide the behavior of animal care professionals.

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