Natural History and Setting Goals

The most important factors to consider before training an animal are: Why do I want to do this? What is the animal physically capable of? And how do I safely reach my goals? The first thing to research is natural history of your species. Know the animal's physiology, how it moves, what might be comfortable physical positions for training objectives, and what specific safety issues might be applicable. Understand its diet, discerning preferred natural food items to use as training rewards. Learn how the animal thinks; different species exhibit specific approaches to learning and responding. For example, training a very goal-oriented, focused polar bear is completely different from training a sun bear with a wider attention span and a creative foraging existence. Factor these natural history parameters into how you plan your training goals.

It is important to set specific goals, and have realistic expectations for timelines and accomplishing specific training goals. Are you training an animal for: public education demonstrations, to address a specific medical concern, to improve daily husbandry or because management "told you to"? Regardless, have a plan in place, including behavioral goals, rewards, cues and records. Progress will vary between behaviors and between animals. Do not try to rush training, but instead respond to the animal's progress and behavior and set goals for individual animals accordingly.

Creating a "Bridge" with a Whistle or a Clicker

The most essential element in beginning a training program with an animal is teaching it the parameters of learning. The animal does not understand what we are asking for, so we need a method of teaching it how to reach a goal. This is the inherent mechanism to positive reinforcement operant conditioning. The first step in this simple process is earning the animal's trust by associating a PRIMARY REINFORCER with you, the trainer. With animals, it is almost always food. A primary reinforcer is something that the animal wants, so receiving it will reward, or "reinforce" the training goal that you are trying to accomplish. The best way to earn an animal's trust is to identify the animal's favorite food items and use those for training sessions. That way the animal is rewarded with something it values for working with you. If its favorite foods are biscuits and bananas, use those. If it likes apples and carrots, use those. The animal has to WANT the reinforcer in order to work for it. Initially, you want to directly present/feed the animal the reinforcer. This way the animal learns to take food from you (safely), and also learns that your presence is a good thing and signals the chance to receive something of value.

Once you are able to safely feed the animal, choose your "bridge". Your bridge should either be a whistle or a clicker, whichever you personally feel the most comfortable using. This sets up a bridging stimulus: a stimulus that pinpoints the exact moment that the behavioral goal is met. It is very important to remember that your bridge, your whistle or click, is meant to be a very short, immediate message that occurs at the moment the animal does what you want.

The "bridge" (conditioned reinforcer: the clicker or whistle) communicates to the animal that it has performed correctly, and often signals that additional reinforcement is on the way (food). It "bridges" the gap between the time the correct response is given and the time the primary reinforcer is delivered. It acts itself as a secondary reinforcer, meaning that while it does not have the PRIMARY value of food, the animal learns that it means "good", and so the desired behaviour is reinforced. A whistle or clicker is best because it is a concise, sharp noise that indicates the exact moment the animal did what you were asking, thus allowing for more effective communication of information. Once you are comfortable that the animal will take food from you, and that your bridge is recognized as a reward, you can proceed to training a simple behaviour.

Always remember when you are first teaching any new behaviour to an animal, that food should be used as a reward along with the clicker/whistle. The clicker/whistle is a useful tool, but only when the animal has been taught to associate the sound with a reward. An animal needs its primary reward (food) to help it learn the behaviour. The clicker/whistle can be used on its own later, when the animal reliably knows what to do when asked for a particular behaviour. When it knows what to do every time you ask for a particular behaviour, then you can start using the clicker by itself once in a while, instead of pairing it with food every time (intermittent reinforcement). If the animal gets confused, back up in the training, and start rewarding each correct response. Regression in behaviors (animals not responding as well as normal) is going to occur; don't be afraid to back up a few steps to remind and encourage the animal.

Initial Training and Shaping of Behaviors

In training, "shaping" is the process of taking many small steps with an animal to eventually reach your desired goal. The trainer rewards gradual movements of the animal that can be "shaped" or guided into greater or more complex behaviours.

Here is an example of "shaping" and how it can be used to teach a more complex command. We will use "target" for our initial command. You can use your fist for a target, fasten a ball to the end of a stick, or even grab a nearby scrub brush. The goal is for the animal to touch their nose to the "target" when you ask. This is a very simple behaviour to train that relies on an animal's curiosity, as animals often want to see what you are holding and investigate. If this happens, you sound your bridge and provide a large reward for the behaviour. But what if the animal does not touch or smell the target right away? Then we would "shape" the behaviour.

We would present the target, and issue the verbal cue "target". If the bear makes ANY slight movements towards the target with their nose, use your bridge and provide a food reward. Once the animal makes these small movements towards the target when you ask, you start rewarding with food ONLY the best responses (the ones that show the greatest movement towards the target). Still bridge any others, but make sure the animal is well rewarded for the "bigger" response. Continue this process. Once you make another step (the animal makes a bigger move towards the target) slowly stop reinforcing small steps by providing a smaller reward so the animal learns that only large moves towards your target will receive a reward. In a short time, the animal should learn that the closer it moves its nose to your target, the better

the reward. Once the animal finally touches the target, give it a "jackpot" (a very large food reward) when you bridge them, and make sure it knows that what it did was very good. Soon you can start rewarding the animal only for touching the target with its nose. You will have shaped "target" from small movements towards your goal into the desired behaviour of touching it.

Shaping can be used for any behaviour, and once an animal knows "target", a target can be used to help you with shaping more complex behaviors. For example, once your bear touches the target whenever you ask, you can move the target in different ways to "shape" the animal's position. If you want to teach "up", where the bear stands on its hind legs, you slowly start raising the target when you ask for "target". Once the animal understands that it can stand up to touch it, you can start adding the command "up," and slowly start using that as your cue instead of "target" when you want the bear to stand. Once it learns to follow the target "up" when you lift it, you can slowly change raising the target into a hand signal. The animal will begin to learn that the new signal and "up" mean it is supposed to stand up. You have used a simple command, "target," to shape a different and more challenging behaviour. Shaping can be used to get an animal to sit, stand, lie down, and present various body parts: paws, ears, eyes, and chest. Once a trainer knows how to use small steps to shape a challenging behaviour, you can teach the animal to do anything.

It is a good idea to plan ahead before you train a new behaviour. Write down the small steps you think you might ask for before you train, so that you know how to proceed towards your goal. If the animal does something that you didn't expect, or was not part of your list or "plan," but is still a desired behaviour, do not be afraid to change your list of steps.

Once you understand the basics of shaping and have practiced with simple behaviors such as "target," you can plan on more complex cues and goals. Listed below are some basic examples of behaviors that are useful to train bears, with some shaping ideas for each cue. Remember, these are only ideas. Every animal is different and learns differently. There is no "right way" to train a behavior. Learn from your animal and its responses, and modify your shaping approach accordingly.

<u>"Up"</u>: This is very easy. Slowly start moving your target higher and higher, making the animal stand to reach it with their nose. When they are touching the target up high each time you ask, you can start saying "up", and adding a hand signal. You may hold your arms straight up in the air as the signal. Then the animal will learn that up means to stand up high, and you can slowly start using only the new hand signal and "up" command.

<u>"Down"</u>: Move your target down towards the ground, rewarding any movement of the whole body. When the animal starts lying flat, give them a big reward, and start saying "down" as you move your target to the ground. Then, as they understand this, you can start substituting the new hand gesture for the target. Try a hand pointing straight down to the ground as our command.

<u>"Come" or "Go"</u>: This is where having a longer target device comes in handy. You ask for "target" and start moving the target away from you. Reward each time they touch it when you

ask. You can then start placing the target on the other side of a doorway, and ask for target. If they don't go the first time, again use small steps and move the target short distances until the animal is where you want. Then when the animal will go to the target device away from you, you can start saying "Go" at the same time. The animal will learn that "go" means to head to the target. When the animal does this well, add a hand signal with the command, such as pointing in the direction you wish them to move. Once the animal knows "go", you can use the target device to have them come from the other side of the door back to you. Now do the reverse, and when they come back to the target right in front of you, start giving the command "Come". Perhaps use the normal people version of the "come here" gesture for this. Once they start learning "come" and "go" well, you will only need to use the hand gestures and verbal commands, and can stop using the target.

If the animal becomes confused with any of these new commands, just back up a few steps, and use the target again to help them remember. It is not a bad thing if they forget, always just be ready to back up a few steps and help them learn what you are asking once more.

<u>"Paw"</u>: Place your palm up to the bars and use the command "paw". They will probably not do it immediately, but once you have asked for the paw (and I would use one hand for their right paw, and your other hand *[and possibly a second cue like "foot"]* for their left), any movement up or towards you should be rewarded. This is "shaping" the behaviour again. You can use your target to get them to raise up a little, but not stand up all the way. They will likely place one foot on the side of the enclosure to comply. Slowly they will learn you want them to move their paw. They may try and give it to you right away (in which case give them a large jackpot reward), but it will probably be a slower process of small steps. Slowly get them to move the paw to where you want it. Once the animal presents this reliably, you can teach them to give you a different paw, depending on which hand you use, or to put both paws up on the bars or down on the ground at the same time.

One other method that might work to help the animal learn to put their paw opposite your hand is to use the target to make the animal stand up (the "up" command), then place your hand where they are going to put their paw against the bars and say "paw" coupled with a reward. It might be a successful alternative if slowly shaping the behaviour does not seem to be progressing.

Below are 10 simple **"Rules of Shaping"** to help you remember this process and become skilled with it: (modified from Karen Pryor's "10 Laws of Shaping" from her book *Don't Shoot the Dog*)

1. Raise your expectations (or movements) for the animal in small steps so that the animal always has a good chance of earning a food reward.
2. Train one step of any particular behavior at a time. Don't try to shape two things at once (for example, do not try and teach a bear "lie down" and "stand up" at the same time).
3. During shaping, before you raise your expectation for the animal's next step, make sure the step you were just working on gets the correct response from the animal every time you ask.

4. When introducing a new step, or expecting more, use the bridge to reward any of the previous steps. That means if an animal does not progress to your next step quickly, still whistle/click for any responses that were previous or smaller steps.
5. Stay ahead of your subject; plan your shaping program completely, so that if the subject makes sudden progress (for example, suddenly turns and sniffs right at your target), you are aware of what to reinforce next.
6. Don't change trainers in midstream. You can have several trainers per animal, but stick to one person per behaviour.
7. If one shaping procedure is not working, try something different. There are many possible ways to train any desired behaviour; there is no ONE way or "right" way.
8. Don't interrupt a training session unless it is an emergency. Give the animal your full attention, since ignoring an animal is technically "negative punishment" (time outs).
9. If the animal seems confused or as if it doesn't "remember" the behaviour, don't be afraid to move back a few steps to something you know the animal can do, an earlier step in your shaping process. Remind the animal of the steps with easy requests that will earn a reward.
10. End each session positively, with the animal getting a food reward for responding to a command properly. If the animal is "happy" at the end of a training session, it will look forward to working for you in the future.

Record Keeping

Do it. Create an Excel file, get a notebook, however you choose to record your progress, just be sure you do so. Keeping detailed training logs outlines your progress with the animals in your care, which can prove beneficial on many levels. You can look back on training records for one animal to recall what succeeded (or didn't) in order to set more informed goals with a different animal. You may leave a facility, and records would allow the next person coming in to continue your work with the animals, ensuring regularity for the animals that will reduce stress levels during a period of change. You may transfer an animal to another facility, and can send records along to assist new staff members in making the animal more comfortable. Professional record keeping also demonstrates your level of dedication and care to your animals in response to inquiries into husbandry practices; these can arise in the form of AZA or USDA inspections, management evaluating your work, or even addressing public or media concerns regarding an animal's welfare.

Most of all, keep records for yourself to chart your progress and success with the animals you are training. It is a valuable source of self-reinforcement.