At uShaka Sea World animal behaviour management ensures the welfare, health and effective presentation of the ambassadors in our care. The animals assist us to achieve our goal of inspiring our visitors and modifying their behaviour - hopefully helping them to become more conservation-friendly humans. Just as we modify the behaviour of animals, so too are we trying to modify the behaviour of our visitors. There are some animal training lessons that are relevant to our goals with people. This article will outline some animal training concepts and detail the potential for these to be used for more effective visitor interpretation.

We are socialised to live according to the expectations of people and society. This affects our sense of self and our behaviour. People are conditioned to be goal-fixated (extrinsic) rather than taking time out to simply enjoy the ride (intrinsic). Living for the outcome leaves us in a constant state of stress. Much the same as a trained hungry food-driven animal may feel. Constantly out of control of the resources (or people’s opinions), and yet striving for acknowledgement (reinforcement – food or glory).

The premise of this article is the following: Being in a stressful state does not bode well for effective long-term behaviour change. The 1908 Yerkes and Dobson law about learning depicts performance from a state of ‘boredom’ to engagement and finally to impaired performance as a result of too much stress. The performance curve on the graph is a bell shape (Figure 1). In 2007 research on stress hormones in the same learning scenarios confirmed the shape of the original performance curve. Because of its relevance to choice-based learning, we have adapted the depiction to include the autonomic stress phase. In the autonomic phase, flight, fight or freeze occur. Daniel Goleman, an author and psychologist referred to this state as the ‘amygdala hijack’, where a stressed organism’s primal survival instinct overrides rational thought.

On Figure 1 there is a midline after which stress hormones become debilitating or even fatal. Recovery, where residual stress hormones are reduced as a result of success, is no longer normal or immediate. Choice-based learning only occurs in the green quadrant. Stress is predominantly caused by a sense of feeling out of control. When we feel out of control, our primal need to look after our survival is piqued. If an animal is learning in the green quadrant, any stress hormones in the learning process immediately return to normal when the animal succeeds.

Learning in the orange zone is where we react to something automatically. Learning in this zone is powerful, because the result, when we succeed, is a physiological relief where stress hormones are reduced. However, the learning is not conscious or ‘choice-based’, and is largely through association. Here is an animal training example.

Figure 1. An adaptation of the original Yerkes and Dobson curve
We are introducing a seal to a novel item in the shape of a green ball. We think that he will have no problem with the ball, so while a trainer has him in session, a second person tosses the ball into the water. The seal takes fright and swims away, and is hesitant to return to the trainer. What happened on the stress diagram? The seal lost perceived control when the ball landed nearby. Remember a lack of control is experienced as a primal threat to our survival. The animal’s stress hormones jumped into the autonomic zone. Without thinking, and to re-establish a sense of control, the seal swam away from the perceived threat. The seal felt safer away from the new object and trainer. The stress hormones reduced. As far as association is concerned, the animal then associated the fear with the trainer in the session, and hence is hesitant to return to the trainer. A human example, if someone is afraid of snakes, and finds a dangerous snake under a chair there is a strong possibility that the person would be nervous of sitting in that same chair for a while. Sub-consciously the person’s body would work to avoid this space. One had no choice in the learning.

Responses in the orange zone are not predictable. The reactive mind will respond with one of three options - flight, fight or freeze. In the orange zone we are working to regain perceived control. At our most primal level, security is feeling in control. Hence, a basic biological need. In training language – a primary reinforcer. For example, a wife is stressed because her husband has not paid a bill. Her stress hormones shoot into the orange zone. She reacts by yelling. This reduces her stress hormones back to green. Nothing has changed, but she has the feeling that she is in control once more – primary reinforcer. This means that in future when the bill is not paid, she will once again yell. The comfort zone (feeling in control) has been re-established. This is the crunch. The behaviour of resisting change is primarily and so radically reinforced. The behaviour is protecting the status quo. So effectively, no behaviour change will occur.

To effect behaviour change, we have to keep people and animals in the green zone. So how do we keep animals out of the orange zone/reactive mind? We will illustrate. Thereafter we will extrapolate how we can do this with our guests so that we provide the greatest potential for their behaviour to change.

An animal feels a sense of control is their ‘comfort zone’. If we are able to teach an animal something just beyond the comfort zone, they have the potential to succeed in their learning, because they have choice to return to their comfort zone. If we stray too far away from what they know, the lesson may result in too much stress and a reactive response. Our jobs as animal trainers is to steadily increase the size of an animal’s comfort zone. If we do not do this effectively, it is possible that the comfort zone can actually decrease in size through too little or inappropriate stimulation.

To ensure that we maintain choice and access to the comfort zone during training, we have identified four key points to keep the animals in the green zone. These provide the animal with the required sense of autonomy - a sense of being in control.

Point 1: PAYOFF - If we were to ask the animal ‘what is your pay off for doing this?’ we must be sure they know the answer - food, fun or attention perhaps.

Point 2: The animal must show that they are ready to participate. With the seal and the green gym ball, we should rather introduce the object in progressive steps, while the animal is focussed and attentive to the process.

Point 3: There must be a ‘safe place’ already trained. Somewhere the animal is always free to go if the learning becomes overwhelming.

Point 4: The animal must always have the ability to ‘stop’ the stimulus. If the seal looks hesitantly at the green ball, we should retreat before it becomes reactive. Hence, he has the power to stop our advance.

We will outline below how we utilise these four points for our guests with these four options to keep them in the ‘green zone’. Remember, in the green zone we have the greatest potential to change our guests behaviour.

Point 1: PAYOFF – refers to consequences to any actions our guests may experience, and thus refers to a variety of undertakings we offer our guests:

Reason for visiting:
As has been found around the world, our research shows that our guests visit to ‘have fun’, ‘learn’ and ‘spend time with their families’. Therefore we weave our conservation messaging into all guest experiences in the park.

Clear payoff messaging:
Our suggested ‘calls to action’ must be relevant to our guests. We cannot assume, for example that all our guests love animals. If we used this love as their payoff to not litter it might not be effective for all our visitors. Being as specific as possible to the personal needs of our guests is required. For example a selfish imperative may be more appropriate to some audiences. In the case of litter – reducing litter is good for your health. It means less mosquitoes and environmental toxins and it can save money.

Limit of the ‘pay off’.
If an animal is working only for extrinsic reinforcement, such as food, once his end is achieved, the learning ends. The same must be said about our guests. For this reason we are always working to generate intrinsic motivation by working towards creating connections with the environment so that they...
naturally feel drawn to do the right thing. We do this in a variety of ways including the following examples:

- Offering vicarious caring opportunities. For example in our dolphin presentations, trainers to interact with the dolphins at an emotional level.
- In the turtle presentation a guest meets the turtle, in front of all audience members.
- We encourage staff in general to ‘be in love with what we do’ and to share this passion.

Too little payoff:
Just like humans, if animals fail too often, they become disheartened. To afford that sense of being in control, we consciously ‘set the animal up to succeed’. For example, if the guest relays an incorrect response, staff do not make them feel wrong, but guide them to the right answer.

Payoff is not punishment:
Conservation horror stories overwhelm our guests and may push them into the reactive mind. Where, as we have seen, they will justify not changing their behaviours. We need to provide facts, but need to balance them with effective calls to action to prevent them from going into the orange zone. If we want their behaviour to change we have to keep them consciously thinking.

Point 2: Guests start the learning. To prevent stress, the guest needs to be able to choose the start to the learning. Our guests enter on their own terms, and so arrive in a receptive state. Our goal is to keep them in that state. To do this we provide then with a program, which details a variety of ‘free choice’ opportunities throughout the park. Our guest relations guides are mentored to notice guests who appear receptive, and to interact with these.

Point 3: Stop the lesson. Our guests always have the choice to leave. Where challenging points are found solutions are needed - for example, our guest relations guides are taught how to notice guests that feel anxious in the aquarium which is underground, and assist them to exit.

Point 4: Safe place. It is easy for us to relate to the need to have a safe place to which we retreat when feeling anxious. Our facilities are usually seen as safe-havens. It is our job to ensure that this remains the case, so that our visitors feel safe and secure. Feeling in control is much easier in a clean, litter-free facility. It is our job to proudly ensure this.

Besides these four points, there are a few more animal training mechanisms that have significance with our guests.

- Focus on the behaviour we want and ignore what we don’t want.
We do the same with our guests. Reinforcing the fact that we believe they are making appropriate conservation choices. Thus they don’t feel singled out.
- Have faith in the lesson
If we want a seal to wave its flipper, but we always manipulate the flipper rather than letting him choose to move it, the animal is not learning. He needs to choose to cooperate. The same is true for our guests. If we don’t give them time to reflect, they will not choose to learn. The very nature of our park provides reflection time so keeping them in the green zone. Our ‘calls to action’ also provide empowering options to consider
- When training animals, if our communication is clear, the animal feels ‘in control’ and intended learning is effective. Simple clear communication keeps our guests receptive, increasing the possibility of them choosing to change their behaviour.

With our wonderful facilities we have the perfect opportunity to provide people with a sense of control and choice. They can feel enriched and safe when they visit us. They are in the green zone. We have a laboratory space in which we can positively influence behaviour and make them more blue and green. So let’s do it.

References
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