Humanimal. I've always liked word sandwiches and have a Nictionary full of them. Although I'm not the only one to have come up with this hybrid (do a quick Google and you'll see), it did come about independently as part of my work in zoo-based nature story telling.

Humanimal was an attempt to renovate the rather hierarchical and persistently biblical way we see ourselves as a species and to re-set my thinking about our place in the natural world, especially as we seem ever-intent on doing our best to create an *unnatural* world.

 So what is my definition of the Humanimal? A *Homo sapiens* that is aware of her/his own place in nature, accepting that we are subjected to the same forces as every other organism. A Humanimal is a *part* of nature, rather than *apart* from it.

These notions attempt to creatively counter the reality that the Humanimal brain has allowed us to change the face of the earth and even the nature of nature, deliberately tinkering with the genius of genes as we've domesticated a handful of species. For the majority of animals that have resisted our efforts at taming and changing, we've still altered their environments and experiences in pace with our own evolution as a species.

Zoos have been a prominent part of this and some would argue that there is no greater alteration than a wild animal held captive. Historically, Zoos were living showcases of the great to the grotesque, often reflecting the power and status of individuals and cultures. Their role has changed from this early point and the most effective zoos are now more conservation organisations than stamp collections. As we whittle away the wild, Stationary Arks (as Gerald Durrell named them) have become important bio-banks, as well as places that Humanimals can engage with nature and support ecological recovery efforts. The modern zoo is an emotional and ethical jungle, where ideals and reality are often compelled to cohabitate as uncomfortable bedfellows. Add to this the ever-present imperative for zoos to maintain the highest standards of animal welfare by design and demonstration, and we have a state of exquisite and challenging complexity.

Thankfully, there are some useful guidelines to help us improve animal lives in this context. In 1994, John Webster gave the world an animal welfare model which became known as 'The Five Freedoms'. A challenge quickly emerged with this language in that it was too readily interpreted in absolute rather than relative terms. In response to this, and in light of recent research and further reflection, David Mellor (2016) has recently revised the original five freedoms as 'The Five Provisions and Aligned Animal Welfare Aims'. The first three cover what many would consider the 'care basics': nutrition, environment and health. The last two are worth presenting here because they directly relate to our focus topic:

- **Appropriate behaviour:** Provide sufficient space, proper facilities, congenial company and appropriately varied conditions.

- **The Aligned Animal Welfare Aim:** Minimise Threats and unpleasant restrictions on behaviour and promote engagement in rewarding activities

- **Positive mental experience:** Provide safe, congenial and species-appropriate opportunities to have pleasurable experiences.

- **The Aligned Animal Welfare Aim:** Promote various forms of comfort, pleasure, interest, confidence and a sense of control.

In this sharing with you, I'm going to assume that we all want to 'promote various forms of comfort, pleasure, interest, confidence and a sense of control' in animal lives, embracing the 'most positive, least intrusive' methods (Friedman 2009). In so doing, I want to offer some insights about my efforts to communicate lucidly and compassionately with my zoo peers about training, behaviour, learning, cooperation and welfare. There is substantial parity here with the companion animal world, too, as the settings may vary but the welfare goals are very similar, if not the same. As animals are designed by their evolution to respond to opportunity in their environment, we can make their lives with us much richer by providing a range of stimuli that engage their senses, encourage their initiative and develop their natural skills. Training is one of those opportunities.

Behaviour and Learning: The Engine Room of Success

Before we can train, understanding the processes that make it possible is essential; hence, we highlight that individual progress is enabled by learning and behaviour. We define behaviour as anything an organism does that can be measured and learning as change in behaviour due to experience (Chance, 2003).

In talking with other Humanimals about learning and behaviour, especially in my work in the zoo and conservation world, I try to describe their combined benefit as:

- Practical action moving towards an effective outcome; or,
- The endless art of finding a way.

Everywhere we look in nature we see examples of practical responses to the trials of life. They're one of the great drivers of evolution, as species are not just interested in surviving, but *thriving*. It's the thriver's that get to pass on their genes, rather than the survivors. Finding a way every day is how behaviour may attain a thriving state.

Cooperation: Saying Yes to Opportunity

To me, 'finding a way' suggests a need to cooperate with the complete package of environmental stimuli. For many of us, awareness of this cooperation started in the sofa-scape of the childhood lounge room with Sesame Street, and daily doses of Big Bird and his buddies put this useful mantra into my young learning brain. My goal as a Humanimal and Professional Learner has been to improve cooperative skill in my relationships with all species; to fit in with that sense of enquiry that we all possess, especially from an angle of self-interest.

From the Serengeti to Sesame Street, we observe the drive of organisms to engage with their surroundings. Learning is all about doing in order to do better and the animal care industry is evolving along those lines. In response to developments in our awareness about animals and their needs, change has been rapid and the bars to our visions and understanding increasingly belong to the past, a previous state I like to call Craptivity.

In many instances, the emerging emphasis on space and behavioural scope has been transformative. We are basing our approaches on the awareness that animals are built to behave and respond to stimuli. We are all trained by the world around us, and we remember (and often remind each other) that behaviour is a flexible mechanism designed to respond to whatever is most worthwhile - and we endeavour to make reinforcing events the most frequent and meaningful ones.

Therefore, in my interactions with my co-learners I aim to ask myself:

- What doing do I want?
- What doing does the co-learner want?
- How can we cooperate with each other?

I call this tuning into the animals' Choice Voice. To do this, we need to adjust our frequency to the bandwidth of behavioural action and avoid the static of constructs or labels. They have the potential to mislead us, because of the tendency to interpret adjectives differently. Many a rich discussion on behaviour amongst my cohorts starts with the prompt to describe behaviour in operational terms to understand what animals are really saying through action. In this way, Humanimals can bridge the species gap and our management techniques can respond to improve animal lives.

Seeking

Responding to overt behaviour is our job and making assessments based on doing is important, but in recent times scientific advances have opened the window to the inner lives of animals. The research of Dr. Jaak Panksepp (quoted by Grandin 1998, 2005) emphasises the biochemical and emotional influences on behaviour and he has described four 'blue ribbon' emotions in animals: Panic, Rage, Fear and Seeking.

Examples of what these look like abound in the world around us and such states are there to help an animal survive and, hopefully, *thrive.* Rage, fear and panic, although negative in their tone, may be useful in their impact. This is because they're part of the animal's limbic system, that network hard-wired to the amygdala in the brain that prompts fight or flight; they're helpful (in short bursts) or they wouldn't be there. After all, nature is not a welfare agency and such responses have saved many a skin (or territory or consort). However, in our zoo settings, we encourage engagement with seeking behaviour and aim to minimise the other states.

Combining Awareness of Internal states and Responses to External Action

So what of the interface between internal states and behaviour? This is a tricky area for animal carers: it's a bit like asking "Which should come first in our considerations - the affect or the effect?" What is the most meaningful and relevant state for our responses? At our zoos we encourage each other to remember that our main business is with the behavioural action we can observe rather than basing our approach on interpreting what *might* be happening inside the learner. We promote a mindset of staying *aware* of internal states but *responding* to external action, especially seeking behaviour – moving toward and maintaining interest in target stimuli.

Why such a strong focus on the notion of seeking and seeking behaviour? For the purpose of communicating in simple ways about behaviour with animal carers of diverse backgrounds and experience, the term seeking has been effective in that the majority generally understand and accept the essence of it. It also helps us to achieve two main things:

1. It reduces prolonged experiences of the other states that come with the stressors that may compromise animal welfare rather than enhance it. They can effectively inhibit or even block learning.
2. Seeking behaviour is relatively easy to engage with – any of us that share our lives with dogs have a front row seat on it every day!

Take the Lesson from Observing the Behaviour

From this point, our own seeking of success with our animal colleagues gathers pace: to cooperate with seeking behaviour, simply engage 'the learners loop' of performance, feedback and revision. The next step is to introduce that the way to build better behaviour is with positive reinforcement (R+): adding consequences that maintain or increase the frequency of goal behaviour. Simply put, animals regard R+ as gold, because it directly interacts with the behaviour of seeking.

Some Humanimals argue that the emphasis on R+ is unrealistically skewed; rather, there is a training tool box with other devices such as negative reinforcement and positive and negative punishment. In our discourse, I emphasise the example that animals set when left to monitor the environment and make their own choices: in their behavioural approach they seek to minimise punishers and maximise reinforcers. On from this in our discussions on how to succeed, we encourage each other to follow their lead and do the same. I also suggest that whilst we *can* train with punishment, the best we're likely to get is compliance, whereas if we train with R+, we can *develop* cooperation.

An additional bonus in many of the training settings in which we find ourselves is that we often have antecedent control and hence the ability to design interactions that further increase the use and benefits of positive reinforcement. We also understand that the world can be a present punishing stimuli and that resilience is a useful state in the behavioural repertoire. This acknowledges that we can't necessarily control all stimuli (nor should we) and hence endeavour to build the responsive resilience in our animals to help them respond effectively to aversive stimuli. Thoughtful generalisation, sensitive successive approximation plans and the consistent building of solid relationships with R+ help us build increasingly robust behaviour sets.

Cooperating towards Welfare and Wellbeing

We strive to remember that all animals are trained by their environment and that the act of training is simply engaging with a process that already exists in an animal's world.

Equipped with this awareness, Humanimals can keep working towards Mellor's guidance to 'Provide safe, congenial and species-appropriate opportunities to have pleasurable experiences and promote various forms of comfort, pleasure, interest, confidence and a sense of control'. We can also make subtle yet powerful adjustments in our language use: substituting 'carer' for keeper and 'home area' rather than exhibit when referring to an animal's living quarters start to gently place the emphasis on nurture and respect, rather than coercion and dominion.

The benefits of such mindsets in training contexts include:

- The reduction of stress through training cooperative behaviour for husbandry and medical purposes.

- The provision of enrichment through engaging training activities.

- The learning of new behaviours and development of cooperative care interaction.

- The creation of defining moments that help humans better identify with animals and help them make more informed decisions about both their animal product use and direct animal interactions.

- The use of training exercises centred on encouraging animals to express their normal behaviour.

- The use of positive reinforcement training techniques to reduce the likelihood of fear and distress.

- The essential habit of positively reinforcing other Humanimals – we strive to remember that charity begins at home in our own species. Indeed, success in this realm is often the clearest indication of the true commitment of the practitioner, as one's fellow Humanimals may present the most challenging behavioural situations of all species.

Keep Your Seeker Seeking

Our great advantage in captive contexts is the flexible essence of behaviour: always poised to respond, it permits an almost limitless potential for making animal lives richer on many levels. As nature constantly stimulates animals, then constantly stimulating animals should be our second nature. This is both a central concept and potential gift for the aware Humanimal in training mode – using the most positive and least intrusive techniques to help animals fare well is the *ultimate* welfare.

References:

Chance P (2003) Learning and Behaviour, 5th ed. Belmont, CA: Wadsworth /Thomson learning.

Friedman SG (2009) What's wrong with this picture? Effectiveness is not enough. *Good Bird Magazine,* Vol 1 – 4.

Grandin T

Mellor DJ (2016) Moving beyond the "Five Freedoms" by Updating the "Five Provisions" and Introducing Aligned "Animal Welfare Aims". *Animals: an open access journal from MDPI,* 6 (10)

Panksepp J (1998) Affective Neuroscience: The Foundations of Human and Animal emotions. NY, Oxford University Press.

Panksepp J (2005) Affective Consciousness: Core Emotional Feelings in Animal and Humans, *Consciousness and Cognition* 14.

WebsterJ (1994)