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HUMAN-ANIMAL INTERACTIONS

NONHUMAN ANIMAL CONTRIBUTIONS TO PSYCHOLOGY | THEORY
OF MIND IN ANIMALS | HOW COMPANION ANIMALS HELP US TO
MOURN | EQUINE-ASSISTED THERAPY | THE MEAT PARADOX |
CHILDREN'S BOOKS AND IT'S ANIMALS | ANTHROPOMORPHISM |
AND MANY MORE

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EDITORS' NOTE

In this issue we direct our focus to the field of human-animal interactions (HAI), which is a rich but relatively new area for empirical research. Humans have interacted with other animal species for millennia but it's only in the past several decades that the psychological effects of our relationships with nonhuman animals have been closely examined. So far, research findings are variable, but there is some indication of potential improvements to mental and physical health through interacting with nonhuman animals.

Our writers explore aspects of this topic in items on animal-assisted interventions including animal-assisted therapy, equine-assisted therapy and animal-assisted activities, as well as exploring the various ways that interpersonal interactions with nonhuman animals are becoming increasingly important, and why. Indeed, interpersonal relationships with nonhuman animals can mirror those we have with family and friends at the level of social and emotional support, so that we also need to consider end of life grieving for these special companions.

Other aspects that drew the attention of writers included the very real dilemmas many people experience in decisions about what to eat; if we love animals so much, why do we continue to eat them? Other writers explore what is arguably an innate tendency of humans to attribute human characters or behaviours to nonhumans; in this case the focus is on anthropomorphism of nonhuman animals.

It was only as recently as 2012, in the Cambridge Declaration on Consciousness, that nonhuman animals were formally proclaimed to be conscious beings, and in May 2021 a US Court of Appeals for the first time in history agreed to "hear a habeas corpus case brought on behalf of someone other than a human being"—in this case, Happy the elephant who is reportedly unhappy in her isolated residence at the Bronx Zoo. As such, our issue would be incomplete without at least one item addressing aspects of ongoing explorations of animal sentience and autonomy. We begin by acknowledging and celebrating the contributions of nonhuman animals to psychology research.

Dr Denise Dillon
Editor-in-Chief



VICE PRESIDENT'S ADDRESS

The bond between humans and animals has existed for thousands of years. Today, it is safe to say that virtually all of us have interacted with animals before—some as proud pet owners, some on the other side of the zoo enclosure, and most with stray animals within our human-built environments. Recent empirical research into human-animal interactions (HAI) is, thus, not only a timely academic endeavour but a long overdue one.

To situate HAI within psychological research is almost poetic; all at once it emphasizes our humanness while reminding us that we share an ecosystem with other animals. After all, our unique (some would say superior) cognition and intelligence lay the foundations for the study of psychology. The complexity of our language and the ease with which we can think abstractly are exclusively human. Still, we gravitate to our nonhuman counterparts—sometimes to a level of socio-emotional support that mimics or even transcends human relationships. In recent years, service animals are becoming increasingly common for various types of support (e.g., physical, emotional, and psychiatric). In a recent viral video on an MRT train, viewers saw a service dog napping in the train but waking right on cue upon arriving at their station, much to the delight and adoration of Singaporeans.

Yet, in our efforts to study and quantify the effects of HAI, it is noteworthy that we may never be able to view HAI outside of our human lenses. Humans, as much as we are animals too, are distinguished from the rest of the *nonhuman* animals—even the term *human-animal* interactions seek to divorce humans from animals; a misnomer. We tend to anthropomorphize nonhuman animals so that we may better explain their behaviors but fall short of attributing animalistic qualities to our own humankind. This is understandable as we can, after all, only view HAI from an emic perspective.

But this is merely the starting point. By bringing forth budding research and opinion pieces on HAI, we believe that this may shape the way we understand animals and how they have helped us thrive (psychologically). It is also a call to action for us to cast our superiority away and to better appreciate and embrace living alongside these beautiful creatures, as, perhaps they have had to for millennia.

Mok Kai Chuen
Vice President (Outreach)

Nonhuman Animal Contributions to Psychology

by Dr Denise Dillon

Let's take some time here to acknowledge the substantial contributions of nonhuman animals to psychological research. Aside from standout individuals such as Clever Hans the horse, Nim Chimsky the chimpanzee, Koko the gorilla, Alex the parrot, and Peter the dolphin, innumerable nonhuman animals have given lifetimes (and lives) as subjects of experimental and comparative research.

Dogs

Any student of psychology will learn about Pavlov's observation of salivation amongst his research dogs who he was studying primarily for physiological research. The classical conditioning response of salivation in anticipation of dinner led to advances in our understanding about basic learning processes.



Cats

Other foundational work that led to the development of educational psychology was Edward Thorndike's experiments with cats. Thorndike enclosed cats in puzzle boxes to observe their efforts to escape and to get the piece of meat placed outside the box. These observations led to Thorndike developing what he called the Law of Effect—when satisfaction follows an association, it's more likely to be repeated. When dissatisfaction follows an association, it's less likely to be repeated.

Rats and Pigeons

Impressed by Thorndike's work and the Law of Effect, B. F. Skinner pursued a line of research to determine the influence of consequences on behaviour. Skinner differentiated respondent behaviours (reflexive responses where no learning is involved; e.g., an eye blink) from operant behaviours that could be predicted to increase or decrease in frequency of occurrence depending on past consequences (e.g., a dog sits and stays in anticipation of a treat because that's what's happened before; the dog has learned to associate the treat with the behaviour).



He focused on the latter by using an operant conditioning chamber, known to us today as a Skinner box. Rats and pigeons were placed in the box and subjected to a series of conditions that reinforced behaviours such as pressing a lever or pushing/pecking a button for food.

Using operant conditioning, Skinner trained pigeons to read and trained pairs of pigeons to play a ping-pong type game together. Generations of rats and pigeons contributed to our understanding of how observable actions arise from environmental factors—in other words, how actions are shaped by experience.



Monkeys

Our current experience of social isolation and the effects of maternal separation and isolation at a very young age can also be understood better now because of the unfortunate experiences infant rhesus monkeys were subjected to in Harry Harlow's experiments. Harlow separated monkeys from their mothers soon after birth and let them choose either the comfort of a soft terrycloth-covered "mother figure" or sustenance provided by a wire support with a baby bottle attached. Most infant monkeys chose to spend more time with the cloth mother when they were not eating, which Harlow took as an indication of a need for affection driving the choice of comfort. Harlow's objective was to understand the importance of caregiving, affection and social relationships early in life.

Geese

John Bowlby, another psychologist who helped explain these aspects of early childhood development in his attachment theory, was influenced by a demonstration of attachment of young geese to a human "mother figure" in the form of ethologist Konrad Lorenz. The imprinting of the young geese onto Lorenz as an attachment figure led to the understanding of a critical period in early childhood during which the formation of attachment relationships occurs.



Elephants

More recently, elephants have joined humans, apes and dolphins amongst those species acknowledged to have self-awareness. Three elephants housed at the Bronx Zoo in New York City successfully completed a self-recognition task by demonstrating they were able to recognize their own reflections in a mirror.



Going beyond mere recognition, the elephants used the mirror to check out their own bodies while putting their trunks into their mouths, and one even used her trunk to pull her ear towards the mirror. Moreover, one of the elephant participants in the 2005 study, Happy, was the first and only participant to pass the Mark Test by recognising a paint mark on herself that was only visible to her in the mirror. Happy's mark-touching was reported by the researchers (Plotnik et al., 2006) as "compelling evidence that this species has the capacity to recognize itself in a mirror. Finding strong parallels among apes, dolphins, and elephants in both the progression of behavioral stages and actual responses to a mirror provides compelling evidence for convergent cognitive evolution."

Happy has since gained renown by becoming a client of the Nonhuman Rights Project (NRP) on the basis that the "respondent's imprisonment of Happy deprives her of her ability to exercise her autonomy in meaningful ways, including the freedom to choose where to go, what to do, and with whom to be." In May, 2021, the NRP reported that, "for the first time in world history, the highest court of an English-speaking jurisdiction will hear a case that demands that a nonhuman animal be given a legal right."

Nonhuman animals continue to contribute to psychological research in labs across the globe, and, as for researchers using human participants, researchers who study nonhumans must consider the relative weight of harm against potential benefits. Fortunately, ethical and regulatory bodies have taken on greater responsibilities and duties of care towards assurances in the matter of animal care and use, and any research involving the use of nonhuman animals is monitored by a local level Institutional Animal Care and Use Committee (IACUC). In Singapore, the National Advisory Committee for Laboratory Animal Research (NACLAR) provides a set of Guidelines on the Care and use of Animals for Scientific Purposes. The Guidelines are based on the principles of the three Rs: **Replacement** of animals with alternative methods, the **Reduction** of the number of animals used, and the **Refinement** of projects and techniques used to minimise impact on animals.



A long time ago, when the Earth
was green,
There was more kinds of animals
than you've ever seen.
And they ran about and played
while the Earth was being born,
And the loveliest of all was the
unicorn.

There were green alligators and
long-necked geese,
Some humpty backed camels and
some chimpanzees.
Some cats and rats and elephants,
but sure as you're born,
The loveliest of all was the
unicorn.

**FROM *THE UNICORN*
(THE IRISH ROVERS, 1968)**

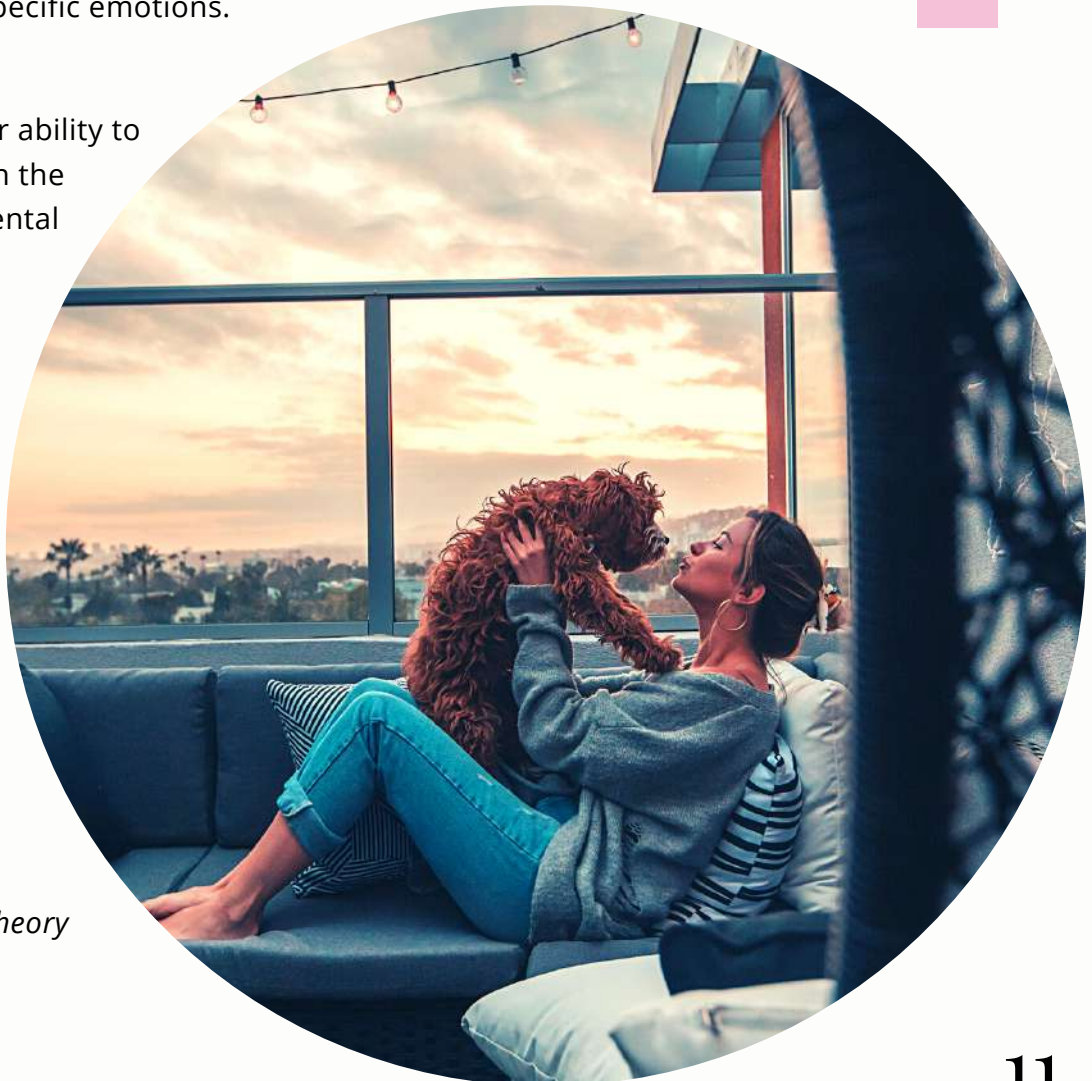


The Search for Animal Sentience: Do Nonhuman Animals Have a Theory of Mind?

By Xavier Lim

Miles is my loyal canine companion and has been ever since I was young. As an adolescent, whenever I encountered conflicts in my life, I would spend some time with Miles to disengage myself from the reality of life. Sometimes, I would even vent my emotional turmoil to Miles, all the while believing that he understood my emotions. Miles is hence not only my loyal companion but also a source of psychological comfort to me, to the extent I would occasionally ask myself if Miles—along with his other nonhuman animal counterparts—is capable of comprehending and expressing human-specific emotions.

Are humans alone in their ability to experience and reason on the basis of unobservable mental states (e.g., intentions, emotions, beliefs)? The question as to whether nonhuman animals can understand mental states has been the basis for long-standing investigations in the psychological community ever since 1978 when Premack and Woodruff posed the question: "Does the chimpanzee have a *'theory of mind'*?"



In this article, I will be supplementing a primer on the theory of mind before confronting three contentious questions on animal sentience:

(1) What do we already know about theory of mind in nonhuman animals?

(2) Why can't a scientific consensus be reached yet?

(3) What do we need to examine further to delineate theory of mind in nonhuman animals?

Theory of Mind: Definition and Constituents

Theory of mind (ToM), or mental state attribution, as conceptualised by Premack and Woodruff (1978)

refers to the capacity to ascribe mental states (e.g., desires, intentions) to others. The ability

to ascribe mental states allows us to infer,

predict, or manipulate others'

behaviours. For instance, while writing this article, I am trying to

interpret the goals of you,

the reader, which allows me to

outline the narrative to suit your

needs. I am also trying to

understand the background

knowledge you have about

this topic, and how I can

frame this article to stimulate

your intellectual curiosity while

ensuring that you will be able to

comprehend these concepts well.



ToM is hence central to what makes us "truly human", allowing us to communicate and cooperate as social beings. Today, developmental psychologists typically study ToM to understand developmental trends in children and the implications of ToM in social interactions (Devine & Lecce, 2021). To better understand the neurological origins of ToM, over the past 40 years comparative psychology researchers have been trying to extrapolate the existence of this ability to nonhuman animals, attempting to determine whether ToM is truly unique to humans.



Some neuropsychologists (Brothers & Ring, 1992) have proposed a framework for understanding the constituents of ToM, and outlined two prominent representations: cognitive and affective. Cognitive ToM concerns mental states, beliefs, and intentions of people, and often involves metacognition—the process of thinking about one's own thoughts and understanding the basis of those thoughts (Kuhn, 2000). Another constituent of cognitive ToM is false beliefs—the understanding that other people can possess beliefs about the world that contradict reality (Carpendale & Chandler, 1996). Affective ToM concerns the emotional states of others, and usually involves empathy—the capacity to experience vicariously the emotions of others without necessarily understanding the reasons underlying those emotions. Both the cognitive and affective representations of ToM allow us to understand the behaviour of others, guiding our social interactions and perceptions (Brothers & Ring, 1992).



So, why should we study ToM in nonhuman animals? The cognitive architecture and mechanisms that underlie ToM in humans are complex—we still do not fully comprehend how it emerges, though we understand its importance in social cognition (Powell & Carey, 2017). By studying ToM in nonhuman animals, we can inferentially reconstruct the evolutionary precursors of ToM, allowing us to better understand its cognitive underpinnings (Krupenye et al., 2017).

Historical Underpinnings of Theory of Mind in Nonhuman Animals

Before we can shed insights into whether Miles has ToM, we need to determine whether animals with a cognitive architecture similar to the sophisticated brains of humans are capable of this feat, for which primates serve as suitable candidates. Premack and Woodruff (1978) were the first researchers to publish a paper discussing their speculations about ToM in primates. In their research, they experimentally investigated whether a chimpanzee (Sarah) was capable of "imputing mental states to others" by constructing videotapes of a human actor reaching an inaccessible object. In the experiment, the videotapes were shown to Sarah and, subsequently, two photographs were presented to her—one that depicts the solution for the human actor to retrieve the object, and the other not. Sarah was tasked to select one of the two photographs, and whenever she selected the solution to the problem in the videotape, a researcher reinforced her behaviour by telling her, "Good Sarah, that's right", or "No, Sarah, that's wrong". Premack and Woodruff hence sought to understand whether Sarah could understand the intentions of the actor (i.e., wanting to retrieve the object) and select an action that was aligned to those intentions. Interestingly, they found that Sarah selected the solution in 21 out of 24 trials, providing a strong indication that she could indeed understand and act accordingly.



What do We Currently Know About ToM in Nonhuman Animals?

Following Premack and Woodruff's novel research, related research has also suggested that apes possessed some semblance of ToM, particularly the awareness of what others could see and hear, and what others knew on the basis of seeing. For instance, apes relied on verbal gestural communication cues when a human was oriented towards them rather than away when attempting to communicate with them (Kaminski et al., 2004). Moreover, in tasks associated with competition for resources, they actively concealed their strategy and preferentially approached food to which a competitor was oblivious or unaware (Karg et al., 2015a, 2015b).

Even though these findings suggested that apes hold a non-egocentric view of reality, other studies failed to demonstrate the ability of apes to go beyond understanding to representing others' beliefs. In a standard experimental paradigm adapted from developmental psychology research on ToM in preverbal infants (Baron-Cohen et al., 1985), an actor would watch the process of an object hidden in one location, and the same actor would be absent while the object was moved. Even though apes were exposed to the whole process and witnessed the bait, they failed to leverage on the fact that the actor held a false belief—the belief that the object was still in the location that they had last seen it (Krachun et al., 2009, 2010). Altogether, these findings suggest that apes can track the intentions of others, and visual and auditory perceptions that motivate others' behaviours, but they cannot represent beliefs held by others (Hare, 2011).



Why Can't a Scientific Consensus be Reached yet?



Despite Sarah's positive demonstration as well as various other reported successful confirmations of ToM amongst various nonhuman animal species over subsequent decades, contemporary scientists hold the belief that there is still no research conducted that could provide unequivocal support for behaviours undertaken by nonhuman animals that could be underlain by ToM (Krupenye & Call, 2019). The question holds—after years of extensive research into this topic, why can't a scientific consensus be reached? Van der Vaart and Hemelrijk (2014) suggested that experiments are fundamentally flawed to begin with.

Across many different experiments (Hurley & Nudds, 2006; Lurz, 2009), a common limitation is that the experimental designs are fundamentally incapable of distinguishing behaviours underlain by ToM and behaviours associated with understanding the physical environment. ToM is the ability to comprehend and interpret unobservable inner mental states, beyond mere physical representations. In Sarah's case, she could think about the actor's intentions and purposes in line with ToM, or she could also think about the logical flow of events based on similar events to which she was previously exposed (Premack & Woodruff, 1978); both explanations are equally sufficient to solve the problem. Hence, in these experiments, subjects can reason based on what they can see and would do in a similar situation, without necessarily comprehending the mental states of the actor.

What do We Need to Examine Further?

Today, comparative psychologists advocate for the pursuit of novel techniques to advance our current understanding of behaviours in nonhuman animals that could be underlain by ToM (Krupenye & Call, 2019). This includes innovative methodologies that encompass stronger controls and leverage advancements in visual intelligence technologies, such as the gaze-based paradigm which involves examining anticipatory looking and violation of expectations. Such methods have not only shifted the research paradigm in developmental psychology but are also increasingly shifting the empirical landscape of comparative psychology, holding latent potential to further our understanding of animal cognition (Baillargeon et al., 2016). Future studies could also consider directly delineating specific mechanisms of ToM by taxing those mechanisms and exploring if limited cognitive resources will reduce performance on ToM tasks (Powell & Carey, 2017).

Shifting our empirical lenses to phylogeny—the study of the evolution of species—it is also crucial to broaden the coverage of species studied in ToM tasks in hopes to determine the uniqueness of this cognitive ability in specific species. This would mandate well-controlled experiments designed to establish whether specific ToM abilities (e.g., inhibitory control) are underpinned by a common neurological mechanism. Broad phylogenetic analyses would also allow comparative psychologists to understand how social cognition evolved across similar species (e.g., dogs and wolves; MacLean et al., 2014). These efforts would allow us to determine the phylogenetic origins of ToM and if social cognition can only develop when selective pressures are present in the social environment.



Conclusion



Finally, we turn back to the broader questions posed at the start of the article: Do nonhuman animals have a theory of mind? Is Miles capable of comprehending emotions and ascribing mental states to others? Well, we simply do not know, yet. Nonetheless, this has not demotivated animal researchers and comparative psychologists to pursue a definitive answer; it definitely has not demotivated me from interacting with Miles as though he understands me perfectly. Contemporary scientists studying animal cognition are still innovating novel experimental techniques in attempts to make progress towards a sound conclusion (Alcaro et al., 2017; Kano et al., 2019; Kuznar et al., 2020). As an animal lover myself, I believe that this line of research is not too much about the pursuit of a definitive conclusion, but the realisation that nonhuman animals are to a degree capable of understanding and expressing emotions previously thought to be human-centric.



"If animals can experience joy..."



...then they can experience the other side of the coin." - Marc Bekoff

Exploring the Mental Health of Animals

How Animals are Affected by Past Traumatic Experiences

By Caitlin Chan

"Do you ever look at someone and wonder, what is going on inside their head?" If you are active on video-sharing platforms, you may have seen the viral trend where this quote from Pixar's *Inside Out* follows a funny video of an animal. The popularity of such videos gives rise to the question: what exactly is going on inside of animals' heads?

As human beings, we often have a hard enough time comprehending our *own* complex thoughts and feelings, let alone verbalising them in a way that conveys exactly how we feel. Now consider the notion that animals lack the ability to form and communicate human speech.

They too have an extensive perception of the world, experiencing intricate emotions of which researchers have yet to uncover the true depth. Thus, the knowledge that we do not possess the language skills to communicate with animals does not impugn the fact that they are indeed emotionally intelligent, amplifying our need for more thoughtful and creative approaches to understand our animal counterparts.

Discussions surrounding mental health have almost always centered on humans. When it comes to human-animal interactions, with regards to psychology, the focus tends to be on what we as a species have to gain from nonhuman animals. However, an interaction is inherently reciprocal, so what about our furry friends? What do they have to gain from us? The mental health of animals is largely unexplored but of much significance in the framework of ameliorating their overall welfare and treatment. Specifically, how are animals affected by past traumatic experiences? Additionally, could exploring this in turn affect our understanding of post-traumatic stress in humans?

Post-Traumatic Stress in Animals

Psychological trauma represents the exposure to emotionally painful and distressing situations, which overwhelm one's ability to cope and adapt, making them feel powerless (Rousseau, 2019). A commonly diagnosed anxiety disorder resulting from trauma is post-traumatic stress disorder (PTSD).



What do they have to gain from us?

According to the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, 5th edition) criteria, symptoms of PTSD include hypervigilance, flashbacks, nightmares, sleeping difficulties and avoidance behaviours, as well as negative cognitions and mood. The trauma experienced can precipitate from having suffered child abuse, physical abuse, sexual abuse, or life altering events such as the death of a loved one, war, a terrorist attack, or natural disaster (Bisson et al., 2015). From a human standpoint, the diagnosis of PTSD already seems to be obscure, relying heavily on patient interviews. Furthermore, an adequate description of the disorder seems to be a moving target, as made evident by controversial and substantial changes to the diagnostic criteria in the DSM-5 (Pai et al., 2017). Because of this, it may seem insurmountable to accurately diagnose nonhuman animals with a disorder as grievous as post-traumatic stress, right?

Growing up, my mother and I would often look after our friend's dog, Snowy, who had been rehomed due to animal abuse in his first household. We knew that his initial abusive household was home to an avid pianist, but did not expect that when I started playing the piano, Snowy would howl, seemingly in pain, and would cry and start to shiver. In retrospect, this extreme aversion and abnormal response to the sound of a piano were definitive signs of trauma. Through witnessing first hand that Snowy's trauma from abuse manifested in an adverse association to piano music, this led me to an exploration of other cases of post-traumatic stress symptoms in animals. After all, the aforementioned experiences that commonly cause trauma in people could easily pertain to nonhuman animals.

Upon some research, I found that in the same way that veterans are affected by their traumatic experiences at war,



it has been hypothesised that many military dogs appear to suffer from a form of canine PTSD, and behave in a similar way to their war-traumatised human counterparts (Burghardt et al., 2011). Events such as natural disasters, severe thunderstorms, bombings, abuse, and attacks from other dogs may lead to notable behavioural changes such as fear, shaking, hiding, howling, barking, aggressive behaviour, shying away from people, and inappropriate urination and defecation (Black, 2010). Additionally, in the case of Lola the cat, after experiencing the impact of a bomb explosion, she became easily startled by small sounds, displayed symptoms of anorexia, became clingy towards her owner, and would start wailing when left alone (Kumar, 2017).

Studies on chimpanzees have found that traumatic experiences such as premature separation from mothers, social isolation, sensory deprivation, prolonged captivity, and being used in laboratory experiments reliably lead to a range of adverse behaviours (Ferdowsian et al., 2011). Such behaviours were strikingly similar to those presented by traumatised humans, including self-isolation, anorexia, and even self-injury. Flint the chimpanzee is one of such cases. After his mother passed away, a primatologist noted that he seemed to suffer from depression. Flint withdrew himself socially, stopped eating and eventually became so weak that he died while resting close to where his mother had lain (Dasgupta, 2015).



These findings open up several venues of discussion about the closeness of our human experiences and subsequent behaviour to that of animals. Consequently, could exploring the psychology of nonhuman animals potentially provide useful insight into the mental health of us humans?

Animal Models of PTSD

From the previously discussed points, it is a reasonable proposition for nonhuman animals to be models through which we could further understand humans. In their scientific review, Flandreau and Toth (2017) discuss and evaluate the involvement of animals as models of PTSD, in an attempt to form a greater understanding of the disorder's neurophysiological aetiology. While it has been shown that psychiatric disorders have extremely complex aetiologies and manifestations, the neural circuitry associated with fear and anxiety, thought to be heavily involved in PTSD, is highly conserved in evolution. Moreover, such behavioural and neurobiological responses to stimuli seem to be biologically preserved, and therefore validate the use of rodent models of PTSD (Verbitsky et al., 2020). As stated earlier, studies have shown that dogs and humans display similar behaviours after exposure to traumatic events, and experience similar biochemical changes (Black, 2010). From a neurophysiological perspective, post-traumatic stress disorder has been correlated with reduced activity and volume of the hippocampus. This is associated with chronically elevated levels of cortisol,

and leads to the down-regulation of the hypothalamic-pituitary-adrenal axis (McMillan, 2005). Due to these similarities across species, exploring PTSD in animals seems to have significance both within the realms of veterinary medicine and human psychology.



...It is a reasonable proposition for nonhuman animals to be models through which we could further understand humans.

What can We do?

The need for mental health consideration should not solely focus on humans, in fact, exploring what have been historically thought to be very "human" disorders such as PTSD and other mental health conditions in the context of nonhuman animals may prove beneficial to all parties. However, since not everyone can conduct research on the neurophysiological pathways of animals, what can we take away from all this?

It may seem simple but merely being aware of our animal companions as beings with a need for mental healthcare could make a world of difference, not only in the way we interact with them, but also in our decision-making regarding pet ownership.

In light of COVID-19, we have seen a global rise in pet ownership trends coinciding with lockdowns. At the height of the circuit breaker in 2020, pet trade trends in Singapore reached an all-time high, with a noticeable increase in both local sales and imports of domestic animals (Lam, 2020). While our pets give us comfort and companionship during these tough times, it is important to remember that they are not only here to benefit us—we must also make sure that we are doing our best to provide for them. Upon returning to our busy lives at work and school, we must consider how it might be difficult for them to adjust to the isolation after getting used to our constant company during lockdown. After all, a pet is a part of the family and—while not every case is as extreme as PTSD—they can still experience separation anxiety, neglect, and potentially even develop attachment issues similar to humans.

We as a society must recognise the need to empathise with companion animals, and that while they give us countless benefits, they are also individually important members of our world with agency, dignity, and emotions. Thus, animals have the right to be cared for psychologically—just as they should be physically. This area of research into the mental health and psychological needs of animals is largely unexplored but has great potential and importance.



Right Here Next to You: How Companion Animals Help Us to Mourn

By Hiah Wei Tin

"The pain of grief is just as much a part of life as the joy of love; it is, perhaps, the price we pay for love, the cost of commitment."

– Collin Murray Parkes (1972)



On May 27th 2019, my father passed away after a gruelling six-month long battle with cancer. The loss of my father overwhelmed me with such intense grief that I shut myself from the outside world for two whole months; refusing to interact with anyone and crying myself to sleep each night. Eventually, it became a challenge for me to talk about my sadness and grief with anyone, resulting in occasional emotional outbursts and heated arguments with family members and close friends. However, there was one individual that I was comfortable opening up my emotions to, and it was through her unconditional love and companionship that I was able to find the motivation to see a psychiatrist and begin my recovery journey. This "person" is none other than my beloved "*Canis lupus familiaris*", or companion dog, Mocha the chihuahua.

Humans have had a long history of domesticating animals for companionship; with evidence suggesting that mankind first domesticated and cared for pet dogs 32,000 years ago (Ault, 2016). However, it is only in recent years that this human-companion animal relationship caught the attention of researchers and psychologists, who have developed an interest in studying the positive benefits that pets could potentially bring for the human psyche and well-being (Podberscek et al., 2005). One growing area of research explores how companion animals can potentially help individuals cope with the grief of losing a loved one and motivate them to seek psychological help, just as Mocha did for me. However, before we dive into the interesting findings that these studies have observed, it is important to know what grief is and why it is important to know how to express it.

**"Give sorrow words; the grief that does not speak
knits up the o-er wrought heart and bids it break."
– William Shakespeare (Macbeth, trans. 1992)**

Termed as a permanent psychophysiological response to loss (Shear, 2012), grief is a complex and highly individualized phenomenon; with each one of us having different modes of expression and coping mechanisms for it (Corless et al., 2014). Grief is usually harmless; however, when there is a lack of proper coping mechanisms and social support, suppressed grief can become deadly. According to Tafá et al. (2019), a lack of social support during the loss of a loved one could cause an individual to have a decrease in stress tolerance and poorer emotional regulation, and to experience dissociation. These psychological outcomes could cause individuals to be more prone to physiological diseases such as cardiovascular diseases and cancer (O'Connor, 2019), as well as psychopathological disorders such as post-traumatic stress disorder (PTSD), depression, and prolonged grief disorder (PGD) (Falk et al., 2020).

In order to prevent these adverse effects of grief, it is crucial for us to find a way to express our emotions in a healthy way, such as through mourning: the process of materializing grief through physical, verbal or ceremonial expressions (Mulemi, 2017). However, mourning can be a difficult task as the presence of negative emotions, such as self-blame, regret and guilt, are present whenever an individual recounts their loss, making them reluctant to express their grief to others (Stroebe et al., 2014). This is an area where studies have found that companion animals can potentially help. In the following studies, it was shown that companion animals can help people mourn by providing companionship, a safe space to communicate and express their grief, and the motivation to socialize with others.

**"Animals are such
agreeable friends. They
ask no questions, they
pass no criticisms"
– George Elliot (1857)**





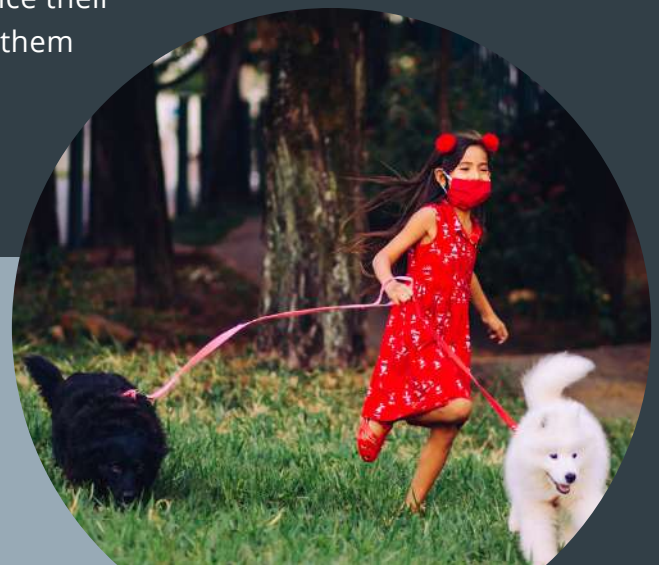
According to Charles and Davies (2008), when participants were asked to describe their relationship with their companion animals, the majority stated that they saw their pets as a legitimate source of companionship. Charles (2014) explains that this was because pet owners perceive their companion animals as being capable of consistently reciprocating their affection and being present with them when they're experiencing a life crisis such as loss. This undying loyalty that companion animals provide to their owners has been found to help prevent harmful coping mechanisms during periods of grieving and promote the growth of helpful traits such as resilience (Hill et al., 2020). For example, it was observed that widows who had the companionship of their pets after the death of their spouses experienced lower levels of stress, despair, guilt and social isolation compared to those who were non-pet owners (Bolin, 1987).

Thompson and Kim (2021) also found similar results, explaining that companion animals prevented their owners from experiencing the negative effects of grief by alleviating their loneliness in the absence of their spouse. The reason why this particular companionship is able to produce benefits such as reduced stress and loneliness might be linked to how pets trigger certain neurochemical responses in our brains. According to Beetz et al. (2012), simply interacting with a pet significantly reduces the level of cortisol in our body, which is the hormone that is responsible for inducing stress and the fight-or-flight response in our bodies (Thau et al., 2021). Hence, companionship derived from companion animals not only provides consistent company and social support for an individual during times of grief, it also helps to greatly reduce their stress and anxiety experienced from the loss.



Companionship is not the only thing that companion animals can provide for an individual. Often, pet owners also see their companion animals as a safe haven in which they are provided with both emotional and social support (Meehan et al. 2017). This belief has been supported with findings from a recent study by Cacciatore et al. (2021), who reported that pets gave the highest amount, as well as the most effective kind of social and grief support relative to family and friends. The social support provided by these companion animals would in turn help motivate individuals to express their grief by acting as a bridge that helps them to open up their feelings towards others (Fine, Beck, 2015). For instance, Adams et al. (2017) found that patients were more willing to talk about their problems and communicate with their counsellors when a service animal was present during the counselling session. The presence of companion animals during therapy helps promote better responsiveness from patients during therapy (Cherniack & Cherniack, 2015); however, animals need not be present physically to elicit the same positive effect. Hodgson et al. (2017) observed that when healthcare providers asked their patients questions about their pets, they experienced smoother communication, increased rapport building, and patients being more willing to open up to them about personal issues. These studies show that companion animals have the potential to facilitate communication during therapy or counselling by making individuals feel secure enough to open up about their traumas and emotions to others.

Lastly, companion animals can help prevent excessive grief by motivating individuals to take part in socialization opportunities. Just by owning a companion animal, one is more likely to experience an increase in quantity and quality of social interactions, as well as an increased interest in wanting to socialize more with others outside of one's social circles (Brooks et al., 2018). Shoesmith et al. (2021) explains that owning a pet requires individuals to constantly follow a daily routine, such as walking their pets or bringing them out to socialize. This in turn would increase the frequency of social interaction for the individual, and allow them to take the initiative in starting a conversation with others (Friedman, Krause-Parello, 2018). The increase in socialization is particularly important in helping people to mourn, as it allows them to enhance their social support and provides more opportunities for them to communicate with others about their emotions (Cakar, 2020).

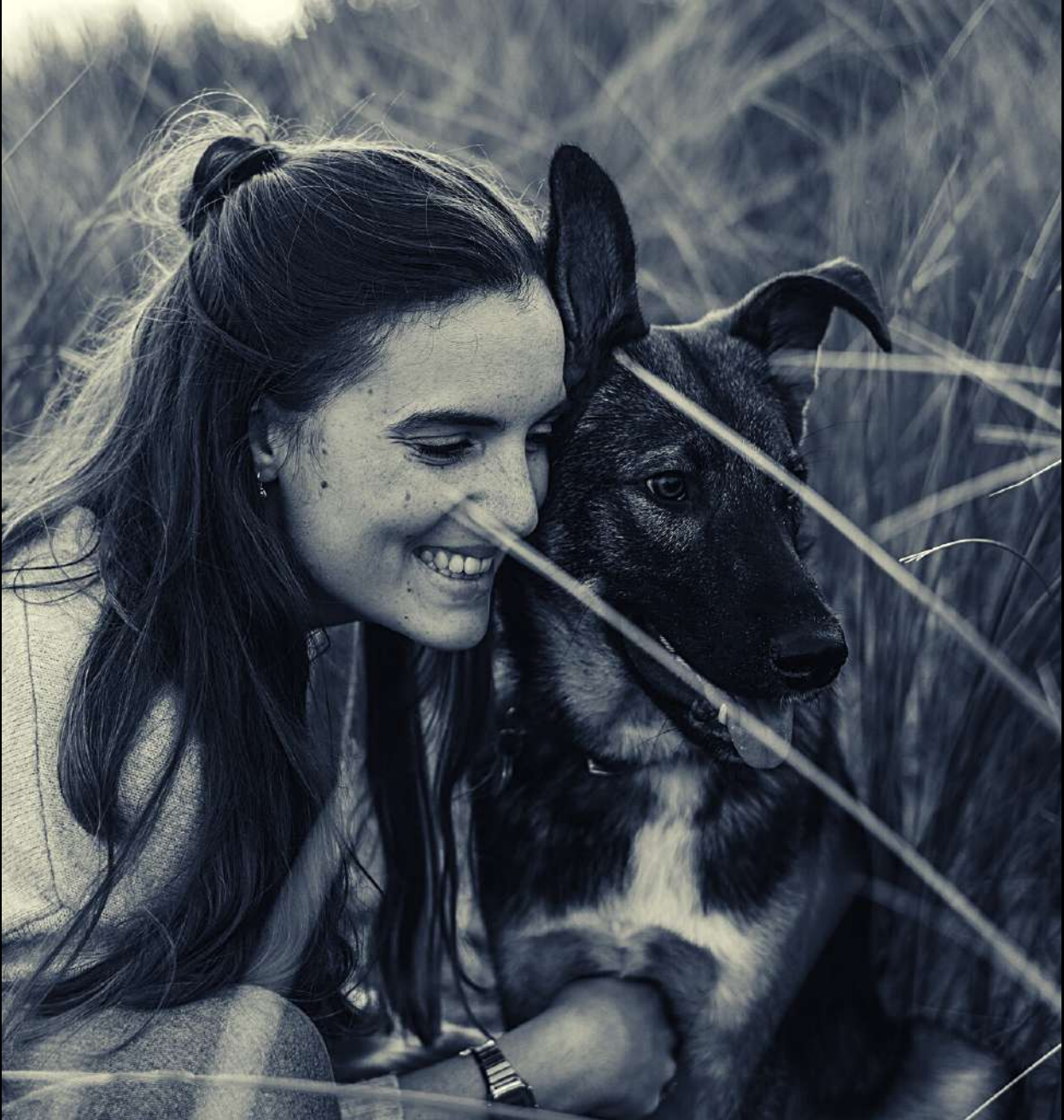


Companion animals have shown a remarkable potential to bring comfort to those that are experiencing grief. Looking forward, more quantitative studies could be done to provide more insight into the emotional healing powers of animals, and potentially find a way to incorporate more animal based therapy to those who have trouble expressing their grief. I would like to end off this article with a poem by Lord Byron, as an ode to companion animals all around, like my dog Mocha, who have loyally stayed by their owners' sides through thick and thin, and managed to bring light into their lives again.



**"Near this Spot / are deposited the Remains
of one / who possessed Beauty without /
Vanity, / Strength without Insolence, /
Courage without Ferocity, / and all the
virtues of Man without his / Vices."
– Lord Byron (Epitaph to a Dog, 1808)**

"They Were not Just a Pet":



By Paul Victor Patinadan

Navigating Disenfranchised Grief at the Loss of a Nonhuman Animal Companion

"Take the rest of the week off, your head's not here and I don't want you making mistakes. Go home after lunch and don't worry about your leave." This was perhaps one of the most memorable acts of compassion I had been a recipient of; from my Warrant Officer when I was serving my National Service almost a lifetime ago. The family dog (my friend of 13 years), a cuddly German Shepherd who hated baths and was deathly afraid of the neighborhood cats, had just passed away due to old age and complications of the gut, and I was distraught. I remember feeling deeply hesitant and even embarrassed about telling anyone how I felt, let alone my superior officer. I had expended my meagre allotment of leave days and I remember trudging to work, my heart as heavy as my combat boots. My expression must have been pretty vacant during the exchange because I remember getting an earful from my officer before he shoo-ed me out of his office. "I've never had a pet, but my auntie had a small parrot for many years, and when it died, she was inconsolable," he had shared. "I don't understand your pain, but I know you are mourning. Now, get out of here before I change my mind!"



Singapore is seeing an increasing number of people adopting animal companions, with estimates of over 820,000 registered pets as of 2016 (Euromonitor International as cited in Chia, 2016). Based on the country's current population, almost 1 in 6 people share a bond with a nonhuman animal companion. This statistic is not surprising; people choose to have pets for a myriad of reasons, not in the least for the unconditional love and non-judgmental acceptance these companions provide as significant members of the family (Irvine & Cilia, 2017; Wong et al., 2017).

The bond shared with these companions, be they feathered, furry, scaly or chitinous, are often comparable to—or even transcendent of—the relationships we may hold with other humans (Wrobel & Dye, 2003). The loss of this relationship through ambiguity (such as the companion going missing or forced rehoming) or, more often, through their demise can lead to grief responses parallel to those of human-related death and loss (Lyons et al., 2020).



Responses to this grief traces a familiar trajectory. Mourning lasts from half to a full year, or even throughout the person's lifetime, and manifests itself in helpful (adaptive) coping such as memorialisation or sharing of feelings or harmful (maladaptive) variants such as excessive anger or guilt (Hunt & Padilla, 2006; Morales, 1997). Similar to human deaths, instances of *complicated grief*, defined as debilitating and traumatic pain towards the loss, are also present with the death of an animal companion (Bussolari et al., 2018). Slightly over half the sample of bereaved pet owners (38 individuals) from a study by Davis et al. (2003) also believed in some form of afterlife for their lost animal friends. It would seem that we revere and miss these members of our families as we would any other.

One distinguishing exception, however, of the grief faced by people mourning their animal companions is that the phenomenon often lacks the imperative social recognition observed for the deaths of humans. Coined by prolific end-of-life researcher Ken Doka, "*disenfranchised grief*" is a catch-all term of the experience when the "incur(red) loss is not, or cannot be, openly acknowledged, publicly mourned or socially supported" (Doka, 2008, p.223). A comprehensive review of 48 studies by Park et al. (2021) found that disenfranchised grief was a major theme in the experience of pet loss. Resultant feelings in mediating this form of grief are often calamitous as well. Extant literature is rife with examples of the bereaved feeling "silly" for their grief, causing extreme reluctance in seeking support, feeling embarrassed, frustrated and hesitant, downplaying emotions, and choosing isolation to cope (the current author is in anecdotal agreement!) (Adams et al., 1999; Davis et al., 2003; Park et al., 2021). Often, this disenfranchisement is self-imposed as the bereaved do not themselves recognise the acceptability of their emotions and feel as though it goes against "appropriate" behaviour (Erdman & Ruby, 2020).



**Though far from a panacea,
self-compassion can lend the bereaved
strength and courage to seek social support
from trusted networks and loved ones.**

Within the immediate interpersonal sphere, self-compassion is observed to be a viable salve in aiding individuals who have lost their animal companions; with research observing decreases in grief severity and feeling socially constrained (Bussolari et al., 2018). Taking time after the death to situate oneself within self-kindness (such as viewing the loss in the larger, honest picture of the relationship), cultivating presence and being mindful of internal thoughts and emotions (simple curiosity about these machinations without judgement), and appreciating common humanity (the naturality and universality of mistakes and difficulties) can aid in alleviating the worst affectations (Bussolari et al., 2018; Neff, 2003). Though far from a panacea, self-compassion can lend the bereaved strength and courage to seek social support from trusted networks and loved ones. Loved ones of the bereaved as support providers may do well to also lead with compassionate action; belying judgement in favor of relief of a very real experience of psychic pain by lending a listening ear, aiding in memorialisation rituals, or simply providing an open and empathic presence.



It is perhaps also time to consider how disenfranchised grief relating to loss of an animal companion can be systemically deconstructed in order to best support the bereaved. While societies must move towards validation that this grief is indeed real in order to begin providing support, social endorsement cannot occur if sufferers continue to isolate their experiences while rationalising their pain—therein lies the catch-22. Working around the conceptualisation of compassionate communities that decentralise death, bereavement and grief from purely clinical settings (Kellehear, 2013), Breen et al. (2020) forward the need for "grief literate" societies, wherein accurate and compassionate understanding underpin all spheres of societal life. In this context, they state that people are able to "acknowledge grief from...pet deaths and not rank those losses vis-à-vis human death loss". Community engagement and educational measures can allow for the appreciation of the severity of emotional pain of animal companion loss, and knowledge of how to sensitively support a sufferer through it.



With the move towards more compassionate workplaces, businesses and employers can also lead this charge; much like the current author's previous boss. Pet-bereavement leave or, at least, some form of constituent employee support are becoming increasingly popular in some businesses based in the West (Wilkie, 2016), but these policies are not legally mandated and are up to the discretion of the companies. There is no current consensus of the practice in Singapore, but with companion animal rates rising and increasing attention to mental health within the community, the stage is set for us to break away from the cycle of silence that permeates this special and unique form of grief (with due caveats). When our best nonhuman animal friends invariably run, fly, swim, and crawl over the rainbow bridge, should we not be afforded some compassion to celebrate their lives with the peace, love, and respect they showed us?



SOSD Healing Paws volunteers at a nursing home.

SOSD Healing Paws: Enhancing Lives Through Creature Comforts

In this article, Clinical Psychologist **Michelle Neo (MN)** interviews volunteers with the **SOSD Healing Paws programme** to find out more about the Animal-Assisted-Activities (AAA) programme that they run, and how it brings about comfort and warmth for their beneficiaries.

MN: Hi to Stasha (SW), Tzuying (TY) and Macy (MS)! Can you tell me more about SOSD Healing Paws? How was it set up, and what are the objectives?

SW: SOSD, or Save Our Street Dogs Singapore, is actually a volunteer-run organization dedicated to the welfare of Singapore's many street dogs. The SOSD Healing Paws programme began in January 2014 when our group of 4 volunteers and their SOSD dogs visited a handful of elderly homes as a way of giving back to the society. These dogs were either SOSD dogs up for adoption, or dogs that were adopted from SOSD previously. Gradually, our programme grew to include many more volunteers visiting a wider range of beneficiaries. Subsequently, we opened our volunteer pool to dogs not originally from our shelter, so that people from many more walks of life could help out, especially those who had never volunteered with an animal shelter before, but are keen to do something fun and meaningful with their furred-family members. Our aim has always been to bring our dogs' warmth and companionship to members of our community who would not otherwise have a chance to engage with dogs.

TY: Yes, that's right! We now have a focus on using AAA as a medium to bring joy to disadvantaged communities. These communities can range from children's homes to elderly homes. Recently, we have also expanded a little into psychoeducation, where we share more about AAA and its benefits to others.

MN: What are the differences between Animal-Assisted-Activities (AAA) versus Animal-Assisted Therapy (AAT)? What types of training or assessment do you have to go through before you can start volunteering? Is there a professional to advise you?

SW: To put it simply, AAT is a goal-oriented intervention conducted by a qualified and experienced professional (e.g. someone with a degree in a health or social sciences), usually with the aims of improving some aspect of the beneficiary's social, psychological or physical function. On the other hand, AAA are fun and casual visits involving suitable dogs or any other companion animals, and can be conducted by trained volunteers. During AAA, we do not monitor or measure the progress of our beneficiaries to the same extent that an AAT practitioner does, although our activities can serve both educational and recreational functions.

MS: My dog Rex had to go through a behavioral assessment before he could start. I, as the dog handler, was also tested for my ability to lead Rex in a variety of settings. In general, we look out for dogs that are confident and friendly, and for humans who are in tune with their dogs' feelings, and are great at communicating with their dogs in a kind and fair manner. Human volunteers must also enjoy interacting with other humans!

SW: Not to forget our AAA assistants—volunteers without dogs who are critical in the smooth running of AAA sessions. They assist with logistics, our hygiene protocol and ensuring that things run safely and enjoyably for all beneficiaries, dogs and volunteers.

SOSD Healing Paws volunteer at a community hospital.



TY: Our programme advisor, Maureen Huang (MSW, AASW) is an AAT practitioner. I am the current programme coordinator, and I have a Masters in Applied Animal Behavior and Animal Welfare. Together, both of us ensure that our activities can protect the well-being of both dogs and humans.

MN: How has AAA benefited some of your beneficiaries? What are the impacts on your beneficiaries' psychological or socio-emotional well-being?



SOSD Healing Paws volunteer at a reading programme for children with dyslexia.

SW: Our beneficiaries have a variety of needs. For instance, some struggle with feelings of isolation, are coping with recovery from illnesses, or endure difficult family circumstances. Even though our visits are brief and once a month, our beneficiaries spend this time away from their day-to-day worries by enjoying the company of our dogs and volunteers. For more active and physically-capable beneficiaries, we plan fun and structured programs like agility or tele-matches to foster camaraderie amongst their fellow residents, or also to improve their abilities to communicate with others. For beneficiaries who prefer slower sessions, we have dog volunteers who are happy to curl up on laps and receive endless pets and treats. Usually over time, these beneficiaries open up to us and share their life stories, often in ways that can be healing both to themselves and to our own volunteers.

TY: The lovely part about AAA is that there is no pressure to do anything. If the beneficiaries want to play with the dogs, they do. If they don't, then they just chat with the human volunteers or watch the dogs play. The pressure-free, judgement-free environment where you can just interact with others is, in my opinion, extremely beneficial at improving emotional well-being. This is especially so for many of our beneficiaries who may not have control over certain areas in their lives or who may no longer be able to be as active as they used to be.

MS: I personally feel that AAA helps our beneficiaries open up. It may not be through the sharing of their problems but through more subtle, often non-verbal, ways. Personally, I have seen the bright smiles on our beneficiaries' faces when they see a familiar face or dog. I could tell that they look forward to the sessions. During the session, most often, it is the companionship that matters. Our quieter dogs would just sit with the beneficiaries and sometimes this is enough to remind them that they are not alone, and that people and dogs care! Also, as our dogs are friendly and do not discriminate, I feel that it allows our beneficiaries to experience non-discrimination and acceptance. All these are invisible forces at work that help the beneficiaries feel more welcomed and happier. Undeniably, our dogs and human volunteers have also managed to build a strong connection with our beneficiaries.

MN: What is the most enjoyable or fulfilling part of being an AAA volunteer? What is your biggest takeaway from this volunteering experience?

TY: We get to play with dogs and meet people from all walks of life, and every session feels healing because there's no pressure for the volunteers as well. My biggest takeaway is to always be open and non-judgemental to everyone that I meet. Going in with an open mind and heart has always helped me to feel connected to all the people that I meet, be it volunteers, dogs or beneficiaries.

MS: I have benefitted a lot from being an AAA volunteer. I work in a fast-paced and high stress environment and often lose myself in the thick of things. The sessions remind me that there is more to life and force me to slow down and focus on other equally, if not more, important things such as human relationships and connections. It also reminds me of bigger things in life—the need to offer a helping hand to others who may be struggling and to give back to society. I feel that AAA is not just a therapeutic session for the beneficiaries but also for the volunteers.

SW: My greatest takeaway is my sense of awe at the transformative power of the human-animal bond. Pain is a ubiquitous condition—but we need not suffer, and I've seen so many times how our dogs have transformed our beneficiaries' (and even volunteers) moments of worry into peace and even joy. For sure, our interactions cannot do much to change the broader conditions in our beneficiaries' lives. But at least for that time, we are there in the moment with our beneficiaries, walking them through a tough spot—and our dogs never fail to offer their patient and non-judgemental support. In these moments, some of our beneficiaries remember the feeling of hope and joy, and our hope is that these feelings carry on into their daily lives.



SOSD Healing Paws volunteers at a nursing home.

MN: What are your wishes for the future of AAA in Singapore?

TY: I hope AAA becomes more common and well known. I hope more people see the benefits and we are able to make space for animals in our daily lives often. In an urban city like Singapore, there are people who have never interacted with animals and have certain misconceptions about them. Through AAA, I hope we can build more meaningful and accepting animal-human relationships.

SW: My wish is for AAA organizations and volunteers to cherish and protect the human-animal bond, and there are many ways to do this. Through continued education, we can build our skills and capacities to deliver AAA in ways that are safe and kind to our dogs—we mustn't forget that animal welfare is a core value of our practice, equal to human welfare. Through advocacy, we can communicate to our beneficiaries and the wider community the benefits of cultivating bonds with animals, and how. I especially look forward to greater collaborations with AAT practitioners to develop best practices.

MS: I hope to see AAA in more areas of Singapore, especially in some seemingly hard to enter areas or places. I read about how AAA exists in public hospitals in other countries (e.g. resident animals who walk around the wards to provide comfort to the patients), AAA in court cases to provide reassurance to the people involved (e.g. children), and AAA in schools after a traumatic incident. I hope that one day, AAA can also become publicly recognized and widely accepted in our local context.

MN: Thank you very much for sharing your meaningful journey and experiences with us!

Equine-Assisted Therapy

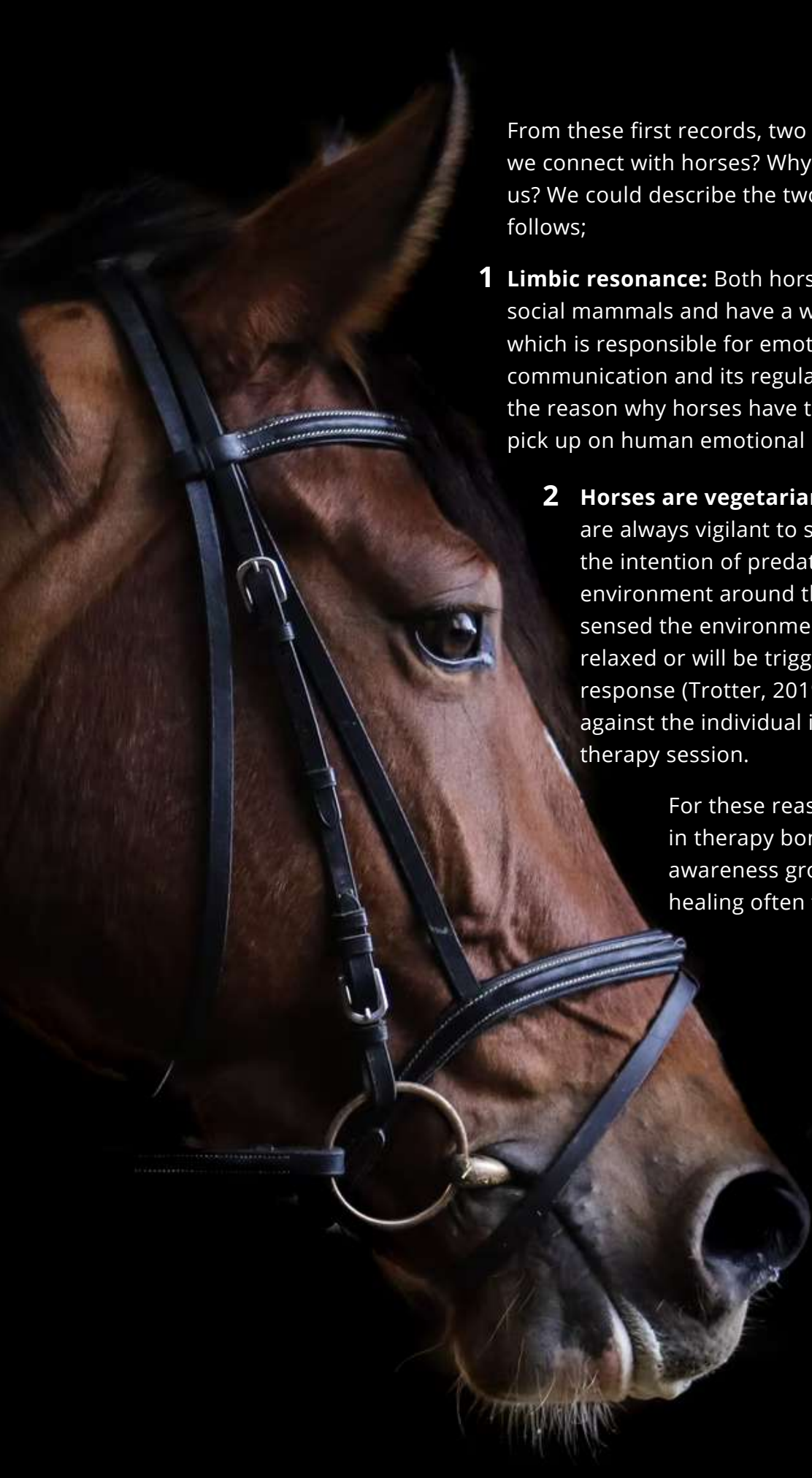
By Dr Naoko Winther

Beginning

The close relationship between horses and humans can be dated back over 6,000 years. Since those early days and up to the dawning of the automobile age in the late 19th century, horses as partners in the daily life of humans were not only indispensable as a means of transportation, but also made incredible contributions to human's civilizing history, in aspects of hunting, agriculture, trade, horse-related products, sports and leisure, and even warfare.

Despite this long close experience working together, it was only in the 1900s that instances of mental benefits of working with horses were reported. The Oxford Hospital in England was one of the first such places to document using cavalry horses as a form of rehabilitation during World War I. Wounded soldiers suffering from psychological trauma—"shell shock"—had been partnered with these horses (Berg & Causey, 2014).





From these first records, two questions arose. How can we connect with horses? Why do horses help to heal us? We could describe the two main reasons as follows;

1 Limbic resonance: Both horses and humans are highly social mammals and have a well-developed limbic brain, which is responsible for emotion and non-verbal communication and its regulation (Fulton, 1953). This is the reason why horses have the amazing natural ability to pick up on human emotional expressions and needs.

2 Horses are vegetarian and prey animals: They are always vigilant to survive and keen to check the intention of predators or that the environment around them is safe. Having sensed the environment, horses will either stay relaxed or will be triggered into a fight or flight response (Trotter, 2019). Thus, horses' reactions against the individual is great feedback in the therapy session.

For these reasons, when the individual in therapy bonds with the horse, self-awareness grows, and emotional healing often takes place.

What is Equine-Assisted Therapy?

Equine-assisted therapy has been established in North America providing mental health services in a farm environment working with horses by licensed mental professionals (psychologists, counsellors, and social workers). This practice is regulated by health care laws and standards of clinical practice developed in North America (Hallberg, 2018, Fry, 2019). In addition, as many researchers have theorized and demonstrated in scientific, empirical and clinical data (Frewin, 2005, Hallberg, 2018), equine-assisted therapy can address a wide range of issues including mental illness (Mood disorders, Personality disorders, Anxiety disorders, PTSD etc.), PTSD in combat veterans, relationship issues, attachment issues in at-risk children and adolescents, and everyday life stress-related conditions.

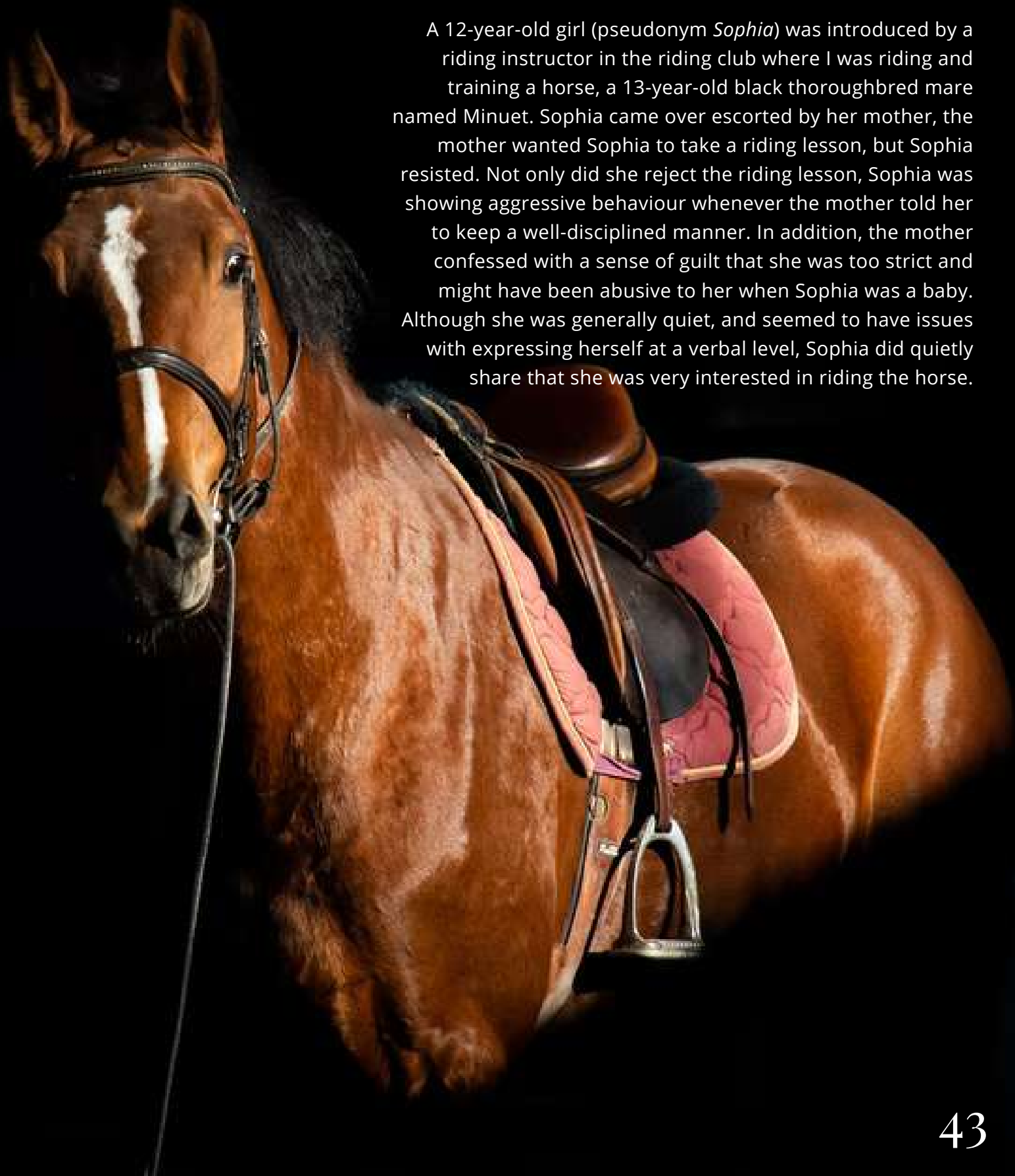
Thus, equine-assisted therapy is being recognized as an alternative psychotherapy method provided by credentialed professionals in over 50 countries around the world (EAGLA, 2016), although with less recognition in Asia. However, **equine-assisted activities** are provided as non-therapy services by non-professionals in many Asian countries. This practice focuses on teaching life skills and enhancing quality of life (Hallberg, 2018).




How Effective is Equine-Assisted Therapy?

What level of impact can equine-assisted therapy provide for the improvement of mental health for clients? *(The following analysis and description of a case example is about a pseudonym and composite case during my working as a mental health professional in Canada. It has been combined with multiple cases of youth because they show very similar psychological and behavioural procedures while working with horses.)*

A 12-year-old girl (pseudonym *Sophia*) was introduced by a riding instructor in the riding club where I was riding and training a horse, a 13-year-old black thoroughbred mare named Minuet. Sophia came over escorted by her mother, the mother wanted Sophia to take a riding lesson, but Sophia resisted. Not only did she reject the riding lesson, Sophia was showing aggressive behaviour whenever the mother told her to keep a well-disciplined manner. In addition, the mother confessed with a sense of guilt that she was too strict and might have been abusive to her when Sophia was a baby. Although she was generally quiet, and seemed to have issues with expressing herself at a verbal level, Sophia did quietly share that she was very interested in riding the horse.





On the first day of the session, she came to the stable with her mother. As we began the first of five planned sessions I asked the mother to let us be alone during the sessions and she agreed. It was really Sophia's first time meeting a big animal like Minuet face-to-face. It is common for clients to approach timidly to greet the horse and say, "Hello". However, Sophia was not able to step into the horse stall, she froze up and stood far away from the horse and turned pale. Although the session usually follows with talking about your feelings from meeting a horse for the first time, Sophia looked too overwhelmed to express anything; I had to accept her stance.

On the 4th day, observing that Sophia's approaching stance was a little closer to Minuet, I carried on a walking activity session with the horse outdoors in the paddock. Sophia was still standing some distance away as I was leading Minuet in the paddock. However, because her eyes expressed, "I would like to come closer to the horse", I invited her to come nearer to the horse. Unexpectedly, not only did Sophia slowly approach Minuet, but her hand was cautiously reaching out for the horse's neck; it was really for the first time. The gentle mare calmly let the girl touch her, with her head down and soft eyes. After a while of tender touching, large tears rolled down on her cheeks and Sophia burst out crying. Touched by the girl's hand, the horse stood still with her. We were all there sharing the precious and tranquil moment together.

A week after that day, I heard from her mother that Sophia had started expressing, "I love horses." But also, "Mom, I don't like to be forced." After 5 sessions, the equine-assisted therapy session closed with Sophia having improved, although she may need to take psychotherapy sessions as she faces adolescent challenges in the future.

Analysis and Discussion

This client showed a shutting down behaviour that is common in trauma cases where the individual is in the state of hypo-arousal and dissociation between the body and mind. A pioneering researcher of psychological trauma, the psychiatrist Dr van der Kolk, proposed that the Broca's area of the brain (that controls language) shuts down because of dissociation (2015).

Dr Kolk elaborated that body work and action are more important than verbalization for the trauma healing process. Dr P. Levine, a psychophysiolologist, also describes traumatic symptoms, such as the immobility response, as a result of a physiological mechanism that resides in the primitive, instinctual parts of the brain. The limbic system and associated nervous systems are not under the conscious control of the neocortex (1997).

Lewis et al. (2000) and Williams (2019) propose that equine-assisted therapy can move the individual from trauma when the neural pathway is restructured. Through touching and cultivating 5 senses, the client could re-connect body and mind which had dissociated as they become in touch with their true feelings. This is neurological "re-wiring", as seen in the moment of reconnection when Sophia bust out crying. This process is difficult with purely verbal-mediated talk psychotherapy.



The Future of Equine-Assisted Therapy

Carlsson (2016) comments on practitioner-researcher bias, explaining that their positive relationship with their own horses might influence their perception of the benefit provided to a client during therapy. For other factors, Angsupaisal (2015) stated that the limited evidence on effectiveness of the therapy may be partially explained by the heterogeneity of methods used in application. It remains to be determined which factors will affect the efficacy of this therapy because the open outdoor environment is much less controlled than a closed counselling room. The effectiveness of the therapy can be influenced by many factors such as the features of the environment, the training and character of the horse, and the skill of the therapist or therapist-horse relations.

Since the history of equine-assisted therapy is still young, practitioners have a great responsibility to demonstrate professional competency and should be more modest and open minded for proposals that may lead to improvements in forming the therapy, so that it may be established as a valuable evidence-based therapy.



Domesticated Animals as Therapeutic Interventions

By Evangel Ooi

Do you find yourself seeking comfort in animals? Have you ever thought of why it is comforting to be in the presence of an animal? Well, recently, this question has been explored in literature as part of human-animal interactions (HAI). Researchers at the University of California, Los Angeles (UCLA) have explored the topic of animal assisted-therapy (AAT) in the form of reviewing animal-assisted interventions (AAI) and suggested that the use of AAI has several health benefits such as improvements in blood pressure, heart rate, perceived quality of life, depression, anxiety, and loneliness (Morrison, 2007).

Commonly used animals in AAI include dogs, cats, and horses. AAI with dogs involves the certification and training of dogs and their handlers to create a positive and safe experience in therapy. Therapy sessions range from 15 to 30 minutes, and include activities like petting or playing with the dog to enhance mood and reduce stress (Marcus et al., 2012). You might then think, these are such simple activities, is there research to prove that therapy sessions enhance mood and reduce stress? The effectiveness of AAI involving dogs is marked by research done on patients with psychiatric or cardiovascular issues, as well as on those with cancer (Cole et al., 2007; Diniz et al., 2021; Richeson, 2003). These patients showed improved health outcomes in terms of regulated blood pressure, lower heart rate, better focus, and increased happiness levels after interacting with the therapy dogs. So why is spending time with dogs so therapeutic? A possible explanation could be the firing of mirror neurons. Mirror neurons allow us to mimic the actions and emotions of another primate. The presence of mirror neurons suggests that individuals may have their moods lifted after observing a happy dog.





Beyond domestic animals, AAI also employs horses in their therapy. Although slightly different, the therapeutic outcomes remain the same. AAI using horses is commonly referred to as equine-assisted activities and therapy (EAAT). While there is no fixed structure or curriculum for EAAT, activities involved in sessions may include horseback riding, horse grooming, and using the horse as a projection of feelings and thoughts for nonverbal clients (Kendall et al., 2015). A review by Kendall and colleagues (2015) revealed that EAAT is effective in reducing depression and anxiety symptoms due to increased mindfulness from focusing on the horses. As horses are highly responsive to humans, they are able to provide prompt feedback about the client's present feelings and emotions through mirroring, hence, allowing clients and their therapists to be aware of the client's nonverbal behaviour, facilitating conversations and therapy.

You may ask, since human-animal interactions bring about great physiological and psychological benefits, why are we not actively trying to integrate them into our daily lives? Let's take a look at Japan, a country where cat cafes are rapidly emerging. Cat cafes have been classified under the healing industry in Japan following their natural disasters and terrorist attacks. An online anecdotal account suggests that visiting cat cafes serves as a coping tool for individuals to cope with the economic and social anxieties that surround these events. Similar to therapy involving dogs and horses, activities include interacting with the felines and appreciating their presence. The difference is mainly the accessibility of these cat cafes to the general population as compared to AAI which is only accessible to clients in therapy. Individuals who visit cat cafes seek to invoke a sense of calmness and relaxation from obtaining physical affection from the felines and appreciating their carefree and unruly nature.



Influenced by Japan and Taiwan, the pioneers of animal cafes, Singapore has seen a rise in pet cafes using domesticated animals such as cats and dogs. These furry friends are often shelter animals, or animals belonging to employees of the café. Similar to the concept in Japan, patrons of the cafes would pay a fee to enjoy the company of the animals while dining in. With the recent spike in the number of individuals seeking help for mental health in Singapore, we wonder if these cafes can be a means of providing therapeutic outcomes for the general population to improve wellbeing. Research involving the use of dogs in universities has been promising, with a 15-minute pet assisted therapy session resulting in lowered stress levels and anxiety (Wood et al., 2018). This study used guide dogs in training as an AAI for a brief session to understand if the brief duration was sufficient to reduce stress. As most visits to pet cafes in Singapore usually last for an hour or two, interactions with the animals might provide indirect alternative stress and anxiety relief for the stress and anxiety levels in Singaporeans amidst COVID-related restrictions and stressors. This would also help to lighten the burden on the mental healthcare services in Singapore by contributing to the mental self-care of Singaporeans, and also serving as a stop-gap measure for those waiting to see a mental health professional.

In conclusion, human-animal interactions have brought about positive outcomes such as reduced depression, anxiety, and stress, for individuals with illnesses as well as the healthy population. While pet and animal therapy has been explored, research on the use of pet cafes as a form of therapeutic intervention is still lacking. Researchers may consider exploring the use of pet cafes and the effects of human-animal interactions on the wellbeing of the general population. Positive outcomes could potentially include enhanced wellbeing and decreased need for individuals who require more urgent mental health care.

Rabbit is Served!

A Look Into Why We Love Animals yet Eat Them.

By Charmaine Leong



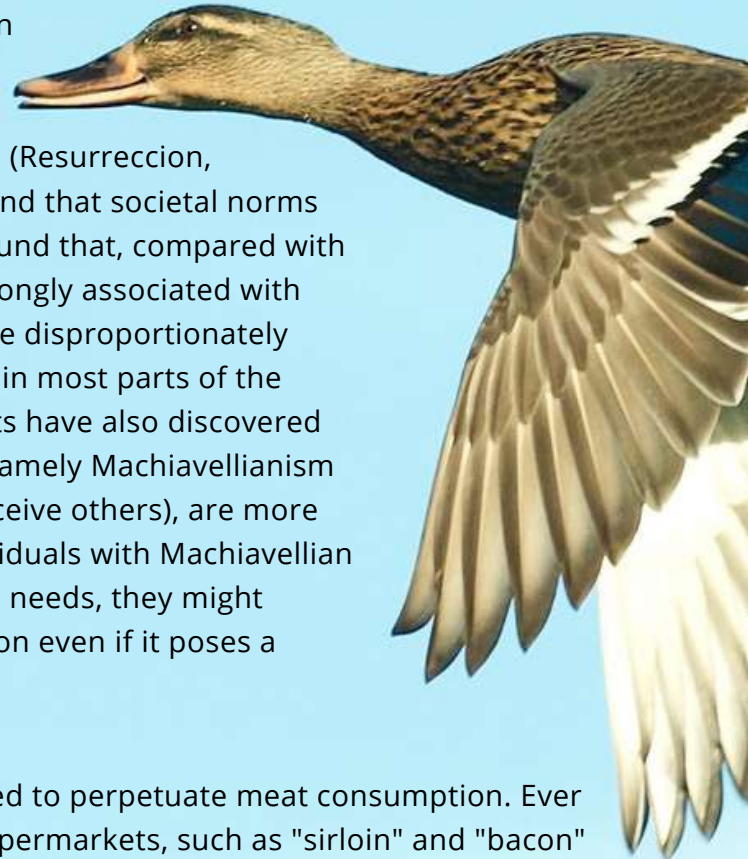
I was browsing through the lunch specials in a restaurant when, to my horror, I came across rabbit stew on the menu. I had just visited a friend who had a lovely pet rabbit, and I was appalled by the mere thought of eating such an adorable creature. That said, I proceeded to order the duck special which I voraciously gobbled down. That incident got me thinking: What made the duck different from the rabbit? Why do I perceive myself as someone who cares for animals and their well-being and yet have no qualms about eating animals that we typically label as "for consumption" such as chicken and duck?

The "Meat Paradox" and Difficulty in Overcoming it

It seems that I am not alone in having conflicting thoughts and actions about meat consumption. The "meat paradox" refers to the phenomenon of how many people genuinely care about the well-being of animals; be it ensuring laws are in place to prevent animal abuse or condemning poor rearing conditions of farm animals; and yet still consume meat regularly (Loughnan et al., 2014).

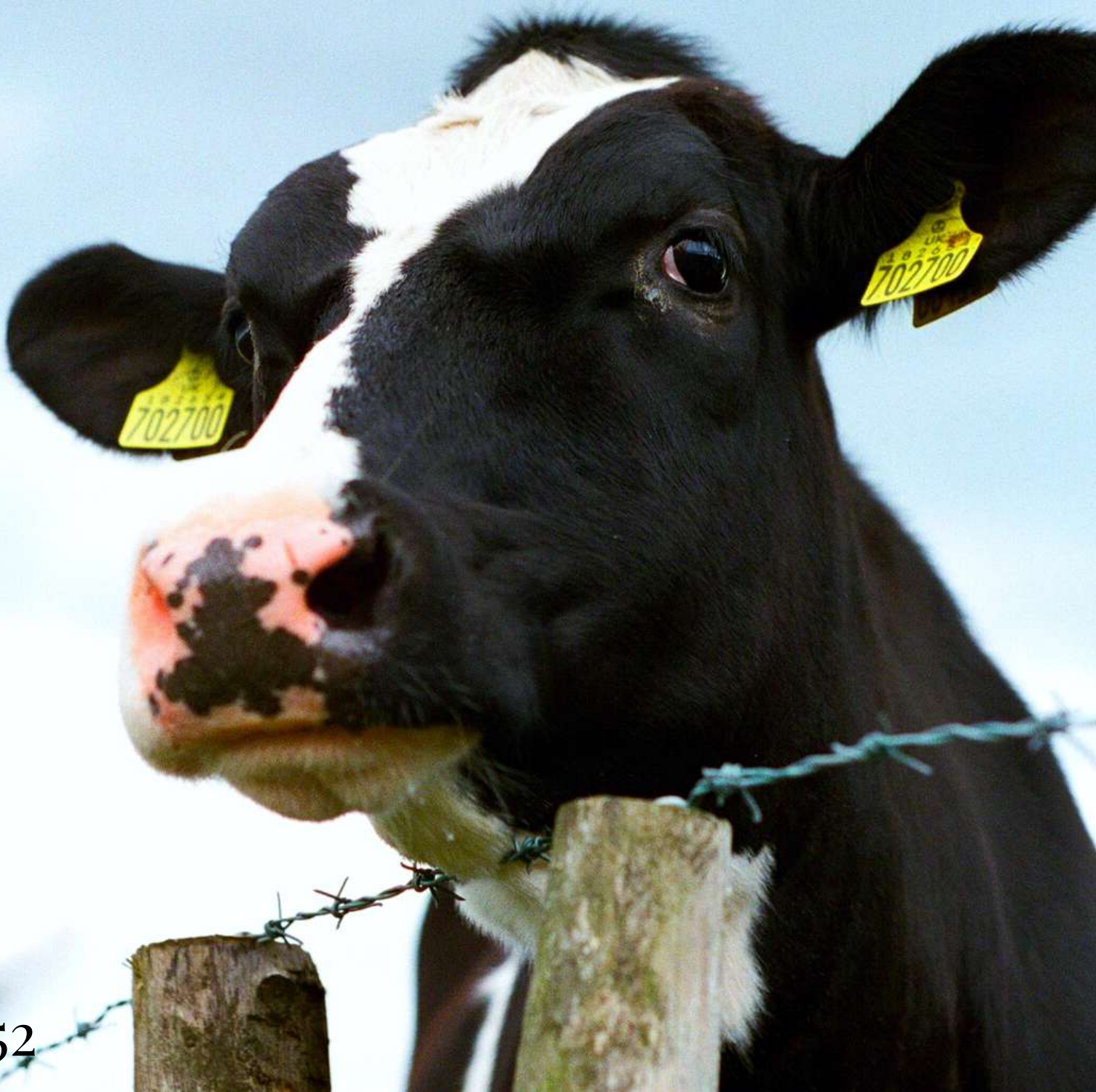
While the difficulty in quitting meat consumption despite the moral dilemma could be due to practical reasons such as the higher cost and relative inaccessibility of vegetarian options (Resurreccion, 2003; Furnols et al., 2011), researchers have found that societal norms also play a big role. Timeo and Suitner (2017) found that, compared with vegetarianism, meat consumption was more strongly associated with masculinity. This could account for why there are disproportionately more female than male vegetarians and vegans in most parts of the globe (Gorvett, 2020). Interestingly, psychologists have also discovered that individuals with certain personality traits, namely Machiavellianism (which entails a tendency to manipulate and deceive others), are more likely to eat meat (Mertens et al., 2019). As individuals with Machiavellian tendencies might be more focused on their own needs, they might therefore find it trickier to quit meat consumption even if it poses a difficult moral conundrum.

Clever marketing techniques have also been used to perpetuate meat consumption. Ever notice that names of meat products found in supermarkets, such as "sirloin" and "bacon" rarely reference the actual animal? Rothgerber and colleagues (2020; Rothgerber & Rosenfeld, 2021) posit that the use of euphemistic labelling (sanitized language) dissociates customers from the animals which lessen the moral qualms of consuming meat. They argued that the more the animal is perceived to be "closer" to humans, such as in terms of intelligence, the more euphemistic labelling is necessary to lessen the dilemma. For instance, euphemistic labels are placed on meat of mammals like cows and pigs, but are not typically placed on non-mammals, like chicken and fish ("Cow burger" sounds strange yet "chicken burger" is linguistically acceptable). Similarly, Hoogland and colleagues (2005) found that when individuals in a supermarket were given either a quiz that referenced animal death or just the behaviours of livestock animals, without further prompts, they were less likely to purchase meat compared to individuals who received a quiz about vegetables. Not reminding customers about the origins of meat arguably makes it easier for consumers to overcome the ethical conflict associated with meat consumption.



Why do We Eat Some but Not Others?

Given the challenges of quitting meat consumption altogether, to overcome the moral dilemma posed by meat consumption, individuals tend to sort animals into edible and inedible categories based on their perceived similarity to humans. This was exemplified by studies that found that the more an animal is perceived to have intelligence or capacity to experience pain, participants would categorise it as inedible and feel bad about consuming it (Bastian et al., 2011; Feinberge et al., 2019). This sense of taboo against eating animals perceived to be like us might stem from how humans, contrary to many other animals, typically do not partake in cannibalism and feel disgusted by such acts (Piazza & Mclatchie, 2019). Possibly associated with an evolutionary push to continue humankind, we might only feel comfortable consuming animals that are unlike us.



More than just making a conscious choice about which animals are edible before proceeding, researchers have found that some of these cognitive strategies to classify animals might be done post hoc to alleviate the guilt of eating animals. Loughnan and colleagues (2010; as cited in Loughnan et al., 2014) found that participants would rate cows as being less able to feel pain if they just ate beef jerky compared to a control group that ate nuts. Similarly, in another study by Bratanova and colleagues (2011; as cited in Loughnan et al., 2014, p.2) when participants were told that tree kangaroos were considered food by local Papua New Guineans, they rated tree kangaroos as being less able to feel pain and less "deserving of moral concern" compared to participants who were just told that tree kangaroos existed in Papua New Guinea. These studies highlight that deciding which animals are to be eaten may not be a rational process after all. In contrast, at times such decisions might be driven by what we already consume rather than directing what we should consume.

The use of post hoc cognitive strategies to alleviate guilt about consuming animals could account for the longevity of cultural dietary practices. For most people, their diets when they were young would typically be whatever their parents fed them. As we cannot undo what we have already eaten, in line with what we now know from studies about post hoc meat-related cognitive justifications, we would typically assign lower mental capabilities to the animals we eat to alleviate guilt and morally justify our existing diets when confronted with the meat dilemma. As such, while eating certain animals such as dogs or guinea pigs would be considered taboo in most parts of the world, these practices might strongly persist in some regions due to strong historical/cultural foundations (Dugnoille, 2018; Tiong, 2019) that have been cemented over time by cognitive justifications.



It is no wonder that the debate about eating animals is a highly heated and complicated one given the many practical, cultural, moral, and even psychological considerations. With the recent rising popularity of veganism, it seems that the meat paradox discussion is about to become even more complex as the discussion has evolved to include the moral permissibility of rearing animals for any of their by-products on top of just meat consumption. Given the rather robust cognitive strategies in place that reinforce meat-eating behaviours in many, it will be interesting to see if the new discussions about consuming animals and their by-products would bring about significant changes to consumer behaviour and if these new interactions with animals that we once consume would, in turn, change our collective cognitions about what animals we "ought" to serve up on our plates, if at all.



Coping with Change in Food

By Dr George Jacobs & Dr Chau Meng Huat



It has become a truism that "the only constant in the world is change". But while people look forward to the latest upgrades to their mobile phones and can't wait till 4G changes to 5G and then to 6G, not all changes are equally welcomed. Food represents an area in which change may not be welcomed so enthusiastically.

Instead, people look forward to their long-loved comfort foods. This article surveys an area of emerging change in food and ponders whether people will be waving "welcome" signs.

Animal agriculture (a.k.a., the production of food from our fellow animals and the products they produce for human consumption), especially eggs and dairy, has been on the rise for many years as technology, more efficient processes, and government subsidies have ramped up production and lowered costs. As a result, most families now expect to consume meat and other animal products not just every day, but for every meal. This is in stark contrast to the practices of families from just two generations ago, as even middle-class ones ate meat only once a month or at most once a week. For instance, Dr Ong Hean Yee, current president of the Singapore Cardiac Society, recounted at a talk titled "Why, What and How of Plant Based Diets" at Sengkang Public Library on 8 October, 2016 that when he was growing up in Malaysia, his family was considered relatively well-off—they even had a car—yet they seldom ate meat.



Much more meat, eggs and dairy was one big change in our diets—KFC did not arrive in Singapore till 1977. Watch out—because another big, maybe even bigger, change recently reached our shores. Will this change send us scurrying to queue up at restaurants and supermarkets, or will these food innovations suffer the fate of flops such as Cheetos-flavoured lip balm launched in 2005 or Satisfries, a healthier French fry launched by Burger King in 2013?





The new foods now arriving on our shores dispense with the need for animal agriculture. Instead, meat, eggs and dairy are becoming increasingly available from three alternative sources instead (Good Food Institute, 2021). The first source is high tech plant-based foods, such as those from Impossible Foods. Second come the products of fermentation, including fish fingers from Quorn made without fishes. The third and perhaps most promising source of new foods is made from cultivated animal cells, such as the seafood being developed here in Singapore by ShioK Meats. Even major meat companies, such as Tyson, now offer alternative protein foods (Poultry World, 2021).

Why is change brewing in labs around Singapore and many other countries? For an entire orchestra of reasons, people are questioning our reliance on animal agriculture. Among the discordant notes this orchestra plays in urging us to find alternatives are: the health problems caused by high consumption of animal-based foods; the inefficiency of animal agriculture and its resulting impact on world hunger; animal agriculture's significant share of human-produced greenhouse gases; the large number of pandemic viruses (including the Spanish flu, AIDS, Swine Flu, Bird Flu, and maybe COVID) attributed to zoonotic (nonhuman animal) sources; the harm suffered by people who work in animal agriculture; and, last but not least, the pain and childhood death borne annually by the 100s of billions of sentient beings caught in the clutches of animal agriculture.






ARE WE WILLING TO OVERCOME THE VARIOUS IMPEDIMENTS TO CHANGE?



Sheeran and Webb (2016) investigated the intention-behaviour gap, the distance between what we intend to do, on one hand, and our actual behaviour, on the other. Yes, we know about the ills evoked by the food production processes of animal agriculture, but are we willing to overcome the various impediments to change? These obstacles, which the novel food companies claim are temporary, include higher prices, less convenience, and lack of a perfect one-to-one match as to taste, smell, look and mouthfeel. Furthermore, each of the three alternative protein sources—plant-based, fermented and cultivated—face their own unique challenges in terms of public perception.


Plant-based meat has been attacked as "hyper-processed" (Bradley, 2020), consuming fermented food may be seen as eating fungus akin to that which grows between some people's toes (Food Navigator, 2008), and to some people, cultivated meat evokes images of "Frankenstein food" (The Oxford Student, 2016).

Thus, students of the human psyche can look forward to a tasty assortment of change dilemmas that we humans in Singapore, one of the world's alternative protein centres, will increasingly encounter this decade. On the one hand, calls for change away from humanity's consumption of the products of animal agriculture are growing to a crescendo. On the other hand, are we ready for changes to our food, one of the core areas of our comfort and identity?



Dissonance at the Dinner Table: **Managing the Meat Paradox**

By Paul Victor Patinadan



The practice of consuming animal-based protein for nutritional supplement is one that has shaped humankind's evolutionary history over millennia (Smil, 2013). Undoubtedly, eating meat holds intimate personal and socio-cultural meaning for many individuals (Leroy & Praet, 2015). The last century has also observed a colossal global shift towards an increase in meat and animal-based product consumption, with a relevant decrease in grain and plant-based foods (Chopra et al., 2002). Developed countries have adopted the ken that meat is a symbol of food in and of itself (Fiddes, 2004). Animal-based foods are usually taken for granted with consumers commonly harboring feelings of entitlement for their "meat traditions", a term Leroy and Praet (2015) employ to describe the collection, consumption and social integration of meat. The centrality of meat on the dinner table, however, is increasingly challenged by concerns surrounding environmental sustainability, health and safety and, most prominently, arguments for animal welfare (Ruby, 2012; Westhoek et al., 2014).



Research on the psychology of food and eating has long observed the discordance between holding nonhuman animals in positive regard (celebrating them through companionship and media narratives) and not wanting to hurt them (through ardent charitable contributions), while also simultaneously choosing to consume them (Bastian et al., 2012; Herzog, 2014; Rothgerber, 2014). Attempts to reconcile these areas of thought and behaviour have aptly been named the "meat paradox" (Bastian et al., 2012). At the heart of this lies the state of constant cognitive dissonance for the omnivorous person; feelings which have become more pronounced as the reality of industrialized meat production and factory farming come to light via activist-based media efforts (who can forget Bong Joon-Ho's darkly riveting 2017 Cannes Film Festival Palme d'Or nominated *Okja*?).

Rothgerber (2014) delineates a framework of no less than eight dissonance-reducing techniques, distilled from various key social psychological theories. The first three of these, avoidance (not thinking about animal suffering), dissonance (disassociating animals from the food product, i.e., a burger patty compared to the flesh of a cow) and perceived behavioural change (downplaying own meat consumption) are apologetic strategies that attempt to avoid recognition and confrontation; resulting in unrationalized and ambivalent actions on the part of the individual. *Denial of animal pain* (denial and distortion of animal injury and death for meat), *denial of animal mind* (diminishing the capacity of animals) and *pro-meat justifications* (taste-centered, religious or hierarchical beliefs that endorse consumption) are unapologetic strategies; there is no evasion of the meat paradox, and individuals are willing to justify the acceptability of the practice.



The last two techniques, *reduced perceived choice* (feeling that there exists no choice in the matter; i.e., lack of alternatives or belief that meat is essential for complete nutrition) and *behavioural change* (with vegetarianism being observed, but not interacted with as an option) are derivative of dissonance theory and eliminate inconsistencies across the domains (Rothgerber, 2014). With constant bombardment of cognitive dissonance during mealtimes for an ambivalent omnivorous human, shifting towards a greater plant-based diet can serve to allay at least some of these feelings, some of the time.

Though meat-eaters may not simply be "blocked" vegetarians (desiring to give up meat, but hampered by external sociocultural variables), as posited by Adams (2009), it is impossible to deny the numerous health benefits of a diet featuring decreased or no animal-based products, in addition to the ethical and environmental advantages (Fehér et al., 2020). In their development of a Meat Attachment Questionnaire, Graça et al. (2015) highlight that increased attachment, quite expectedly, hinders adoption of plant-based diets. "To care about the life of a chicken," German writer Duve (2011) lamented as she looked her diet-related dissonance squarely in the eye, "I must give up chicken!" A viable assumption thus would be that highly meat-attached individuals would employ greater dissonance-reducing strategies (and perhaps more forcefully).






With the state of foodways, production scales and socio-cultural nuances relating to animal consumption as they stand, the current author adopts a healthy pessimism that interactions with the meat paradox can be dutifully untangled. However, the recent popularity of plant-based proteins and cell-cultured meat alternatives, collectively termed "simulated meat" (Slade, 2018), may be an impetus for ambivalent omnivores to navigate their dissonant mental states. Ideally, consumption of such products renders Rothgerber's (2014) dissonance-reducing strategies redundant, while allowing ambivalent omnivores to continue with their meat traditions, sans slaughter and preparation of the animal.

Several years ago, the world watched in awe as the first plant-based Impossible burger patty by Impossible Foods™ (also backed by Singapore's Temasek Holdings) was prepared; cooked seemingly to medium-rare, complete with a crisp brown crust and pink, "bleeding" interior. Patrick Brown, the founder, sought to upend animal agriculture (which he considers the world's most destructive industry) with the proclamation that his product targets the "most hardcore and uncompromising meat lovers" (Fellet, 2015). The company's success motivated other businesses into similar ventures; Beyond Meat™, Omni Foods™ and Tindle™ are few from a growing industry that have created products that mimic meat employing only plant-based material. These products are fast becoming available as substitutes to their flesh counterparts, being only marginally more expensive. How healthy these products and their constituent elements are and the effects of consumption over time, however, are still up for debate.





Alternatively, cultured meat is essentially muscle tissue grown from cell cultures harmlessly excised from an animal, and initial analyses are indicative of dramatically lower greenhouse gas emissions of this process when compared to farming (Mattick et al., 2015; Slade, 2018). Commercialization of this type of simulated meat has been slow, but Singapore has become a firm advocate for the research and development of such methods, even providing an amicable test-market. For example, Eat-Just (branded GOOD Meat Co. locally) manufactures chicken products from cell-cultures and already provides delivery of their product to consumers here (Phua, 2020). Singapore's open-handed stance can be traced back to our ongoing need for self-sustainable food practices, but the noble goals of relinquishing dependence on livestock farming and reducing animal cruelty can doubtless buttress public perceptions (if we can wrap our heads around the process). Fear and disgust unfortunately seem to especially colour people's initial feelings about such products, an unfortunate trepidation of the new (neophobia) (Wilks et al., 2021).

A close-up photograph of a chef's hand, wearing a white glove and a blue beaded bracelet, turning skewers of meat on a large, industrial-style grill. The grill is filled with various skewers, including long sausages and smaller pieces of meat. The background is blurred, showing a busy kitchen or food stall environment with warm lighting.

Research on preferences for simulated meat remains scarce, but in a hypothetical choice experiment with 533 participants, Slade (2018) observed that after controlling for price, 65% of consumers would purchase a beef burger, 21% the plant-based burger, 11% would choose cultured meat, and 4% would make no purchase. High correlations were also observed between the plant-based and cultured meat variants (Slade, 2018). A singular caveat is that preferences are heavily influenced by culture, norms, and other extrinsic socio-economic variables, suggesting that the observed neophobia can be addressed in different settings through education or advertising.

Smil (2013) rightly stated that there is "nothing neutral about meat," and this also seems to extend towards simulated variants as well. However, with the burgeoning reality of post-animal meat, torn and ambivalent omnivores can perhaps set their dinner tables with a fairly lighter conscience and, in turn, face their dissonant experiences with the meat paradox with honesty and some clarity.

Language as Cause and Effect in Our Interaction With Other Animals

By Dr Chau Meng Huat and Dr George Jacobs

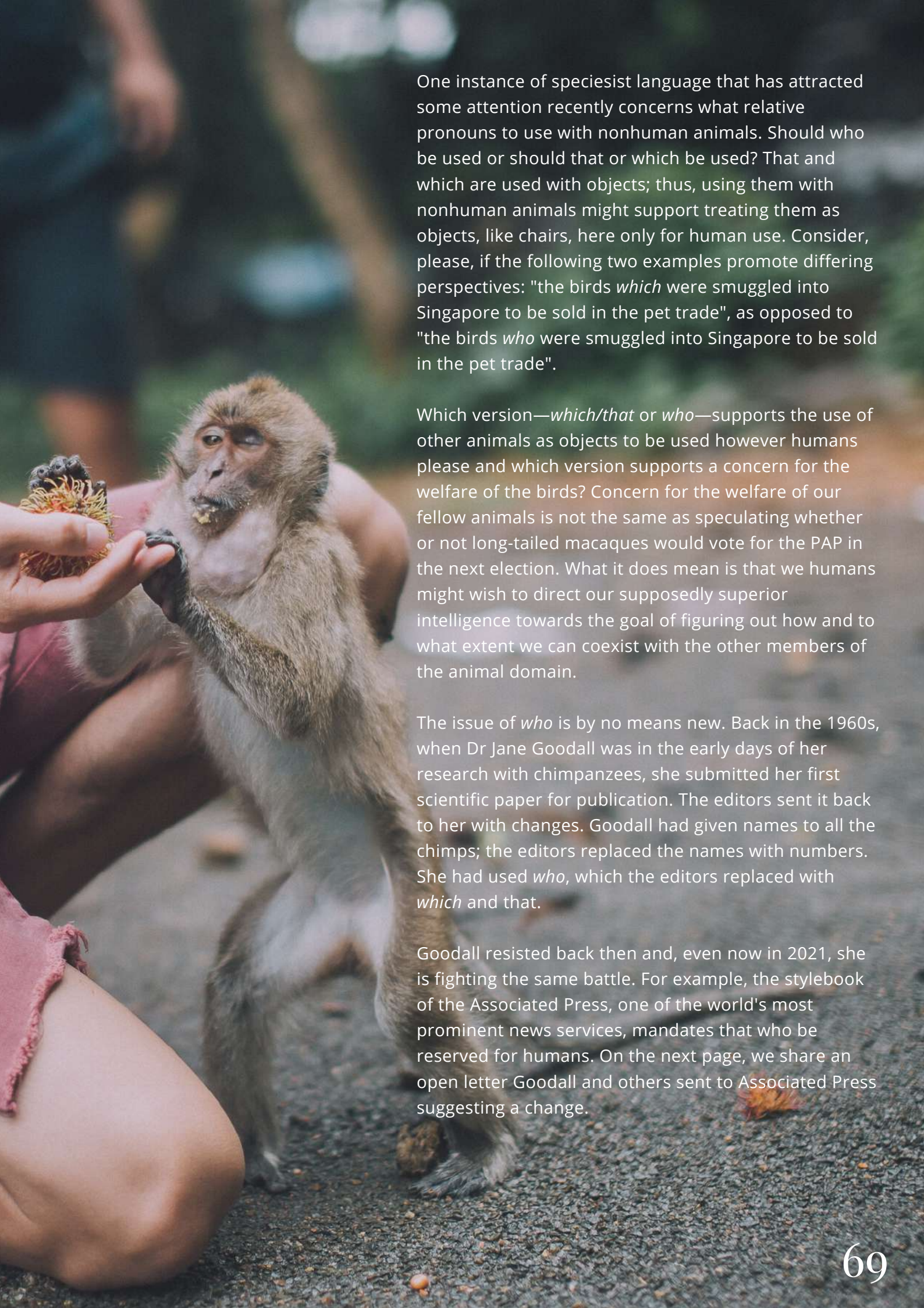
Do you remember when, not so long ago, we called police officers *policemen*? The language change to *police officers* came about as an effect of social changes, in which occupations became open to both females and males. Such language changes result not only as an effect of shifts in society—language changes also cause shifts in society. Do you think females would rather be *policemen* or *police officers*? This article looks at the words we humans use when talking about other animals and asks what changes we humans might want to make in those words.

In a way similar to how the language we use impacts relations between females and males, the language we use with nonhuman animals both reflects and affects our interaction with them. Just as the use of *fireman* instead of *firefighter* has been labeled as sexist, talking about *humans and animals* instead of *humans and nonhuman animals* has been labeled as speciesist: a discrimination against other animal species. Here are speciesist idioms paired with friendlier alternatives.

Idioms about Our Fellow Animals

Speciesist Version	Friendlier Alternative
Kill two birds with one stone	Feed two birds with one scone
Be a guinea pig	Be a test tube
Beat a dead horse	Feed a fed horse
Bring home the bacon	Bring home the bagels
Take the bull by the horns	Take the rose by the thorns





One instance of speciesist language that has attracted some attention recently concerns what relative pronouns to use with nonhuman animals. Should *who* be used or should *that* or *which* be used? That and *which* are used with objects; thus, using them with nonhuman animals might support treating them as objects, like chairs, here only for human use. Consider, please, if the following two examples promote differing perspectives: "the birds *which* were smuggled into Singapore to be sold in the pet trade", as opposed to "the birds *who* were smuggled into Singapore to be sold in the pet trade".

Which version—*which/that* or *who*—supports the use of other animals as objects to be used however humans please and which version supports a concern for the welfare of the birds? Concern for the welfare of our fellow animals is not the same as speculating whether or not long-tailed macaques would vote for the PAP in the next election. What it does mean is that we humans might wish to direct our supposedly superior intelligence towards the goal of figuring out how and to what extent we can coexist with the other members of the animal domain.

The issue of *who* is by no means new. Back in the 1960s, when Dr Jane Goodall was in the early days of her research with chimpanzees, she submitted her first scientific paper for publication. The editors sent it back to her with changes. Goodall had given names to all the chimps; the editors replaced the names with numbers. She had used *who*, which the editors replaced with *which* and *that*.

Goodall resisted back then and, even now in 2021, she is fighting the same battle. For example, the stylebook of the Associated Press, one of the world's most prominent news services, mandates that *who* be reserved for humans. On the next page, we share an open letter Goodall and others sent to Associated Press suggesting a change.

JOINT OPEN LETTER TO THE ASSOCIATED PRESS CALLING FOR A CHANGE IN ANIMAL PRONOUNS — ANIMALS ARE A WHO, NOT A WHAT

March 22, 2021

To:

Paula Froke

Editor of The Associated Press Stylebook and executive director of The Associated Press Media Editors

In the 1960s, world-renowned ethologist and conservationist Dr. Jane Goodall submitted her first scientific paper on chimpanzees that was promptly returned to her to be edited. Every place she had written *he* or *she* to describe a chimpanzee had been replaced with *it*, and every *who* had been replaced with *which*.

Goodall refused to budge and won a small battle for nonhuman animals back then, but decades later we're still waiting for respected style guides like The Associated Press Stylebook to catch up on the relative pronouns used to describe them.

In an age struggling with industrialized animal cruelty, the sixth mass extinction of species, a climate crisis, and the exploitation of the natural world, the way we use language influences the way we see our relationship with our environment and the nonhuman animals we share it with. This isn't a niche topic or a trend in language, and it affects a broad range of stakeholders. Our lives intersect with nonhuman animals in myriad ways. They live in our homes as our companions and visit our yards as wild guests. They're hunted, farmed and eaten. They're raised and killed for their skins and fur. They're used in research and entertainment and held captive in zoos and aquariums.

Wild and domesticated nonhuman animals are everywhere around us, and the scientific consensus is that they too are conscious beings.

Conscious beings cannot be described similarly to cars, or couches, as *it* and *that* and *which*. It is inaccurate and unjust to describe nonhuman animals as if they were inanimate objects, yet it's done every single day—and writers are instructed to do so at the behest of widely-used and respected style guides, such as The Associated Press Stylebook.

Mass media, which defaults to this guide in particular, has a great influence on our perception and therefore has an enormous responsibility to portray nonhuman animals as precisely as possible.

This is especially true considering the overlap of nonhuman animals and social justice issues that are being increasingly covered by journalists.

Yet the current references to them as *it*, *that* and *which* reduces individual nonhuman animals deserving of our understanding, respect and protection to mere objects to be owned and exploited for utilitarian purposes.

The Associated Press Stylebook instructs writers not to apply a personal pronoun to an animal unless their sex has been established, or they have a name. This is too limiting to writers as well as fellow nonhuman animals, most of whom are discussed abstractly and thus their sex is not established. We pay respect to humans whose sex is indeterminate or gender fluid by using *he/she* or the non-binary term *they*. That same courtesy should be extended to all animals, as they are gendered beings.

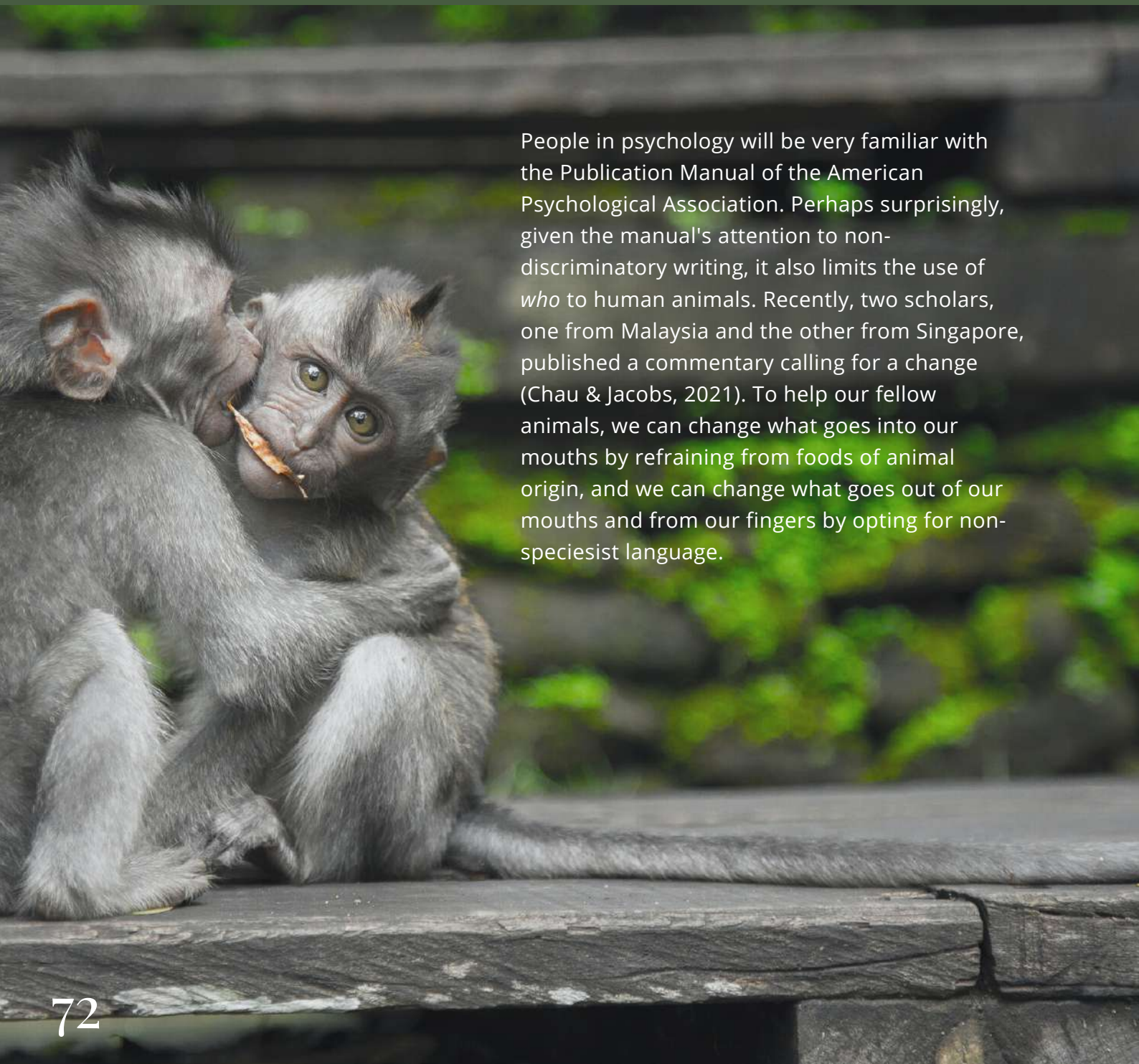
When gender is known, the standard guidance should be, *she/her/hers* and *he/him/his*, regardless of species. When it is unknown, the gender-neutral *they*, *he/she*, or *his/hers* should be used. It is also preferable to use *who* rather than *that* or *which* when describing any individual nonhuman animal. *See full recommendation at Animals and Media.*

"When I began my research and shared it at Cambridge, I was told that my findings and approaches, including giving the chimpanzees names, were wrong. I was also told that surely the realizations that chimpanzees have individuality and emotions were wrong—at the time it was believed that other animals were essentially automatons devoid of complexity and very different from humans. How wrong they all were. Thankfully, we have come very far in our understanding of the other animals with whom we share this planet. We know that they feel joy, pain, grieve, and demonstrate compassion and altruism. We are not separate in kind from other species, but rather by mere degree. I've spent my life working to grow respect for nonhuman animals, and to ensure a future for the complex tapestry of life on Earth, but as we face devastating losses and cruelty to individuals and species, we must do everything we can to help people recognize the sentience and innate value of other animals. I've often said that to make change you must reach the heart, and to reach the heart you must tell stories. The way we write about other animals shapes the way we see them—we must recognize that every individual nonhuman animal is a 'who,' not a 'what.' I hope that we can advance our standards in this regard globally to refer to animals as individuals, and no longer refer to them as objects, so that the stories we tell spark compassion and action for these fellow beings," said Dr. Goodall.

For language to achieve accurate communication of the world around us that allows us to educate ourselves, make informed decisions, and navigate a way forward, it must continuously evolve. This change would be a simple, yet monumental, step towards promoting accuracy in communication and ending the objectification of nonhuman animals we live amongst.

The undersigned individuals and organizations have long held that this update should be made, and agree that it should be made as soon as possible. We would appreciate hearing what efforts The Associated Press is planning to make in this regard. Thank you.

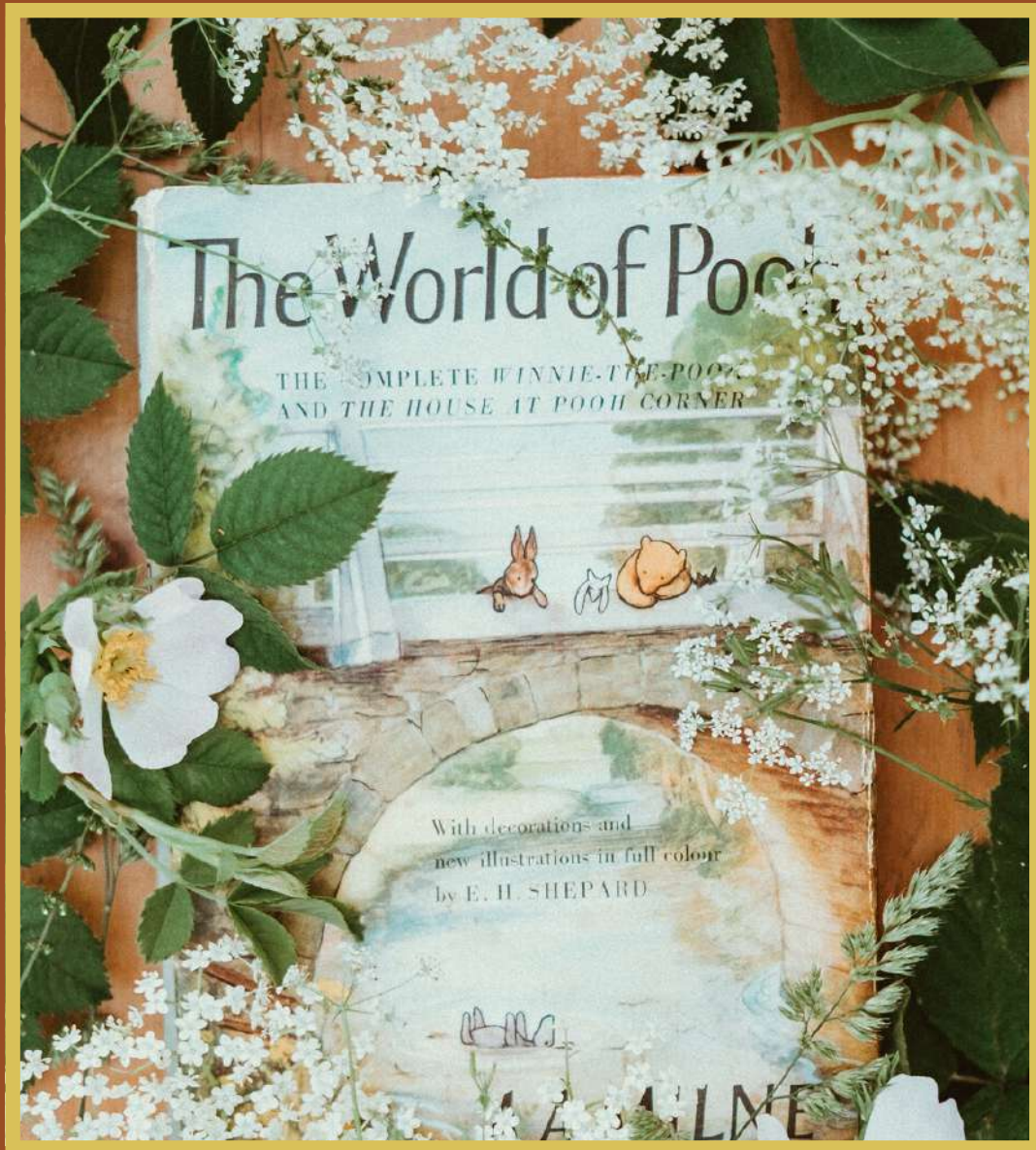
Sincerely,



People in psychology will be very familiar with the Publication Manual of the American Psychological Association. Perhaps surprisingly, given the manual's attention to non-discriminatory writing, it also limits the use of *who* to human animals. Recently, two scholars, one from Malaysia and the other from Singapore, published a commentary calling for a change (Chau & Jacobs, 2021). To help our fellow animals, we can change what goes into our mouths by refraining from foods of animal origin, and we can change what goes out of our mouths and from our fingers by opting for non-speciesist language.

Beware of This Animal Farm!

The World of Children's Books and its Animals



By Jessy Yong

Growing up as a kid, I was consumed by a mountain of *Geronimo Stilton* books. Written by Elisabetta Dami, this series brought me through the adventures of a mouse who runs a daily newspaper and solves mysteries as a side gig. Somehow, dressed in a green suit and donning a round pair of glasses, this rodent was far more entertaining than any other character I have ever come across.

But as we dive deeper, we will realise that the world of children's literature is filled not just with rodents. In the classic E. B. White novel, *Charlotte's Web*, we have a pig and a spider who become friends. Look a little farther, we spot not just any fox, but a feisty one, in Roald Dahl's *Fantastic Mr Fox*.

There is something that makes these stories unique. Like humans, these animals know the meaning of friendship. Like humans, these animals can be devious and scheming.

Originating from the Greeks and spotted in many of Aesop's fables (like *The Hare and The Tortoise*), this storytelling device is more widely known as **anthropomorphism**.

I *Anthropomorphism (noun): giving nonhuman animals human-like characteristics*

Surely there should be nothing problematic about anthropomorphic animals in children's books. It is so prevalent, and many are fond of it.

Psychologists even say good things about it. Megan S. Geerdts, a psychology professor, notes how the use of anthropomorphism in literature can increase the psychological closeness between humans and nature, helping children construct biological connections across living objects. It was also found that young children grasped biological knowledge equally well regardless of whether the story used realistic or anthropomorphic language (Rodriguez & Tamis-LeMonda, 2011).

Yet, Lisa Rowe Fraustino spots a problem.

As a writer of children's literature herself, she cautions that anthropomorphic stories for children may take it too far when assigning human attributes to other animals.

For one, some children's stories are saturated with errors about nature that science teachers later have to correct. This idea is echoed by Celis-Diez and his team, who found explicit mistakes in children's storybooks, such as animals being placed in the wrong geographical regions.



Furthermore, if the moral of the story is too unfamiliar or uncomfortable, readers can simply detach themselves from the anthropomorphic stories—the fish is just a fish—and othering becomes a convenient option (Fraustino, 2016).

But doesn't it seem extreme to paint anthropomorphism in such a bad light? Is there really a need to problematise it?

If we go back to understanding a young child's mind, we will soon draw the possible conclusion that humans are natural anthropomorphisers, just as children below the age of 5 can already develop a "theory of mind", or what is known as the ability to imagine what others are thinking and feeling (Herzog, 2010). If so, extending this imagination to other species is not a far-fetched idea.

Perhaps, then, it is our responsibility to ensure published media actively tackles those prejudices and allow young anthropomorphisers to empathise with nonhuman animals like they would do for anyone else.

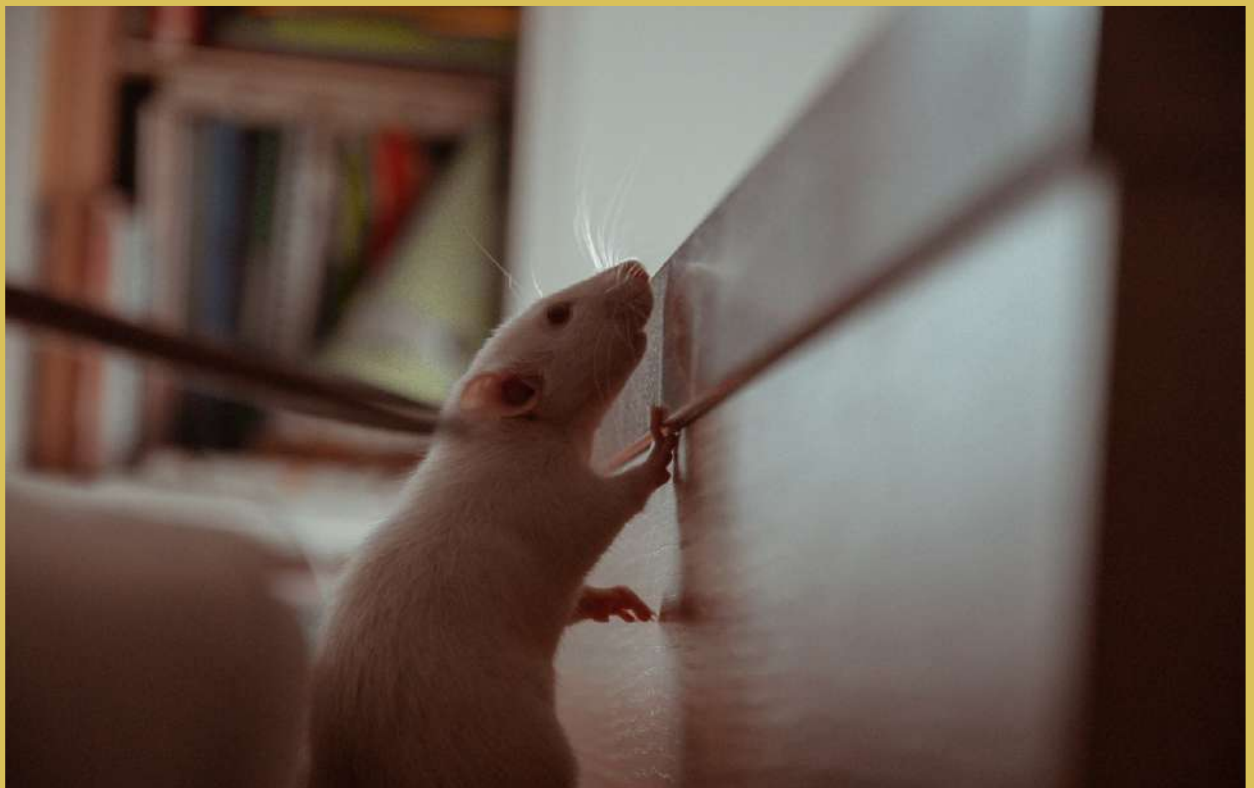
It is certainly not easy to write a piece of self-aware narrative. We see this in *Zootopia*, an animated children's film that uses anthropomorphic animals and has captured the imaginations of millions of young children. It makes an effort at conveying inclusivity and looking past stereotypes. But whether it is executed well is also open to debate. Some critiques have observed that the film still has its biases: the Sloths are funny because they are slow, and some animals (which could represent humans) are still called "predators" (VanDerWerff, 2016).



But without a doubt, making a good anthropomorphic children's story is worth the time; it has the incredible potential of giving young readers a human-like animal to identify with, a flight of fantasy and imaginative escape, allowing the child to participate in a world so different and unstrapped from their own human bodies (Markowsky, 1975).

Am I glorifying the impact of children's storybooks too much? The truth is that rats have a reputation of being dirty and coming from the *longkang* (i.e., drains). And yet to this day, I enjoy seeing other people's pet rodents online, and I really want to have a pet rat of my own. Sometimes I cannot help but wonder: did I manage to beat those ratty stereotypes because I once fell in love with the world of *Geronimo Stilton*?

I would like to think that I did.



Anthropomorphism: Detrimental or Beneficial Tool?

By Goh Ting Wei



Anthropomorphism refers to the ascription of human characteristics to nonhuman entities, such as animals. Unbeknownst to many of us, anthropomorphism is very pervasive not only in informal settings such as our daily lives, but also in academic environments. In both instances, anthropomorphism has its pros and cons.

Anthropomorphism: Daily Lives

Take for example, the books and TV shows that many of us grew up watching. Mickey Mouse, the icon of Disney, is a lovable character who talks, walks on two feet and wears clothes, just like humans do. Yet, in actuality, mice are considered pests which humans would not welcome into their households, unless they are domesticated pets. Such a lapse in reality does beg the question of whether anthropomorphism brings about consequences like inciting a false sense of approachability.

According to Ganea et al. (2014), the answer is yes. In their study, they found that children who

read books with anthropomorphic illustrations and languages were more likely to attribute human characteristics to animals. On the other hand, they also discovered that children were more likely to learn a larger number of facts about animals after reading books with realistic language and or illustrations. Since anthropomorphism does not aid in gaining knowledge, the results of this study may thus lead some to think that pictorial books with anthropomorphised characteristics should be omitted altogether. However, the results instead bring to light the importance of choosing appropriate books. If a child aims to learn factual information about an animal, reading a book with realistic depictions would be more helpful. If, however, books are meant purely for entertainment, anthropomorphism should not pose any threats to children's ability to learn.

In a similar vein, we cannot deny that anthropomorphism also makes content more entertaining, for people of all ages. Its prevalence is felt online, especially with the advent of technology.



For instance, Instagram pet accounts managed by pet owners have been serving as a key source of light-hearted content for people of all ages, even though adults are aware that the ones creating such content are humans, just like you and me. We all know that pets are unable to type on smartphones like humans, but we still enjoy the content produced. Here, it is clear that anthropomorphism does not lead to an ignorance of facts but rather, acts as innocuous fun. From this, it can be implied that we should instead be aware of our motivations behind engaging in anthropomorphism, in place of being concerned about the distortion of facts that anthropomorphism can bring.

Anthropomorphism: Academic Environments

Meanwhile, in the context of animal research, it is acknowledged that anthropomorphism could also lead to a flawed understanding of phenomena in some cases. For example, a genuinely toothy smile generally possesses a positive connotation to humans. However, careful observations of barbary macaques show that macaques bare their teeth to express submissiveness and are an attempt at reconciliation, in response to display of aggressive behaviour (Preuschoft, 2020). This shows that the very action of pulling back one's lips to show teeth holds different meanings and social purposes for humans and macaques.

In this case, anthropomorphism can come in the form of refusal to accept that macaques and humans function differently. The problem lies in oversimplification of animals' cognition and likening it to humans'.

From another perspective however, anthropomorphism can be channelled into curiosity which, in turn, allows for hypotheses generation aimed at finding out more about animal behaviour. Frans de Waal's research is testament to this, as he found that chimpanzees are capable of showing reconciliation (de Waal, 1999). After fights within themselves, chimpanzees were observed to have increased affiliative contact to restore peace. Without anthropomorphism, we would not have gained such knowledge about our nonhuman primate counterparts. de Waal's research features anthropomorphism because the concept of reconciliation has its roots in human social interaction, and he attributed this characteristic to chimpanzees before collecting data for his study. Here, anthropomorphism has instead resulted in contribution to the current body of knowledge about animal behaviour. As such, we can see that anthropomorphism can be considered a useful tool for science and research as well.

All in all, some forms of anthropomorphism can act as a barrier to the understanding of animal behaviour. In all animal research, there lies the limitation of our capacity as humans. We are unable to speak to animals and get anywhere close to understanding what is going on in their heads. Hence, the conclusions we make about their kind inevitably possess a certain level of fallibility. Yet, this does not mean that hypotheses based on anthropomorphism should be wholly dismissed. Some forms of anthropomorphism serve as a basis of comparison between humans and animals, which can bring about groundbreaking discoveries about either or both species. The study of animal behaviour is still relatively new and all plausible explanations should be taken into consideration in order to make progress in science.

So, is anthropomorphism detrimental or helpful? As you can see, both perspectives are valid for anthropomorphism present in our daily lives and research. As long as we are aware of our tendencies to anthropomorphise and stay receptive to arguments from both standpoints, we should be entitled to our own opinions.



Learning to Fear or Fostering to Flourish?

By Dr Denise Dillon



Homo erectus has complex patterns of relationships with other species. The diversity within these interactions demands multidisciplinary inquiry and has led to the development of the field of human-animal interactions. Our feelings towards the behaviours of ourselves and other animals are complex.

One of those complexities lies in the well-supported notion that humans have an inborn affinity for life and lifelike processes according to E. O. Wilson's biophilia hypothesis. Given such an affinity, it makes sense to assume that people should like to be around animals—all animals. And yet that isn't always the case. As independent scholar and author Sue Thomas notes in her book, *Technobiophilia* (2013): "If positive encounters with nature can have a calming effect, it should also be true that negative encounters will result in anxiety.

A number of studies have shown this to be likely, and the reason apparently comes from one of two sources: either it stems from a genetic adaptation such as revulsion for rotting meat and other dangerous substances, or from cultural sources which have created an accumulated history of vicarious acquisition."

Anxiety in an extreme form can become a phobia which, according to the DSM-5 diagnostic criteria, involves unreasonable, excessive fear; immediate anxiety response; avoidance or extreme distress, and that these symptoms are life-limiting, of 6 months duration, and are not caused by another disorder.

In a cross-national study across 22 countries in 2017 (The cross-national epidemiology of specific phobia in the World Mental Health Surveys), animal phobia was reported to have the highest lifetime prevalence (3.8%) compared to other specific phobia subtypes such as Blood, injuries, medical experiences (3.0%); High places (2.8%); Still water, Weather events (2.3%); and Closed spaces (2.2%). Prevalence rates were higher overall for upper-middle-income (1.2-4.4%) and high-income countries (1.7-3.7%) compared to lower-income countries (0.6-3.4%). Animal-specific phobias were found to be more prevalent in females (74.7%) and less prevalent amongst older respondents (10.8%).



More specifically, fear of snakes is reported to represent at least half of all specific animal phobias.

In 2008, LoBue and DeLoache claimed, "The first evidence of enhanced visual detection of evolutionarily relevant threat stimuli in young children" as an outcome of their visual detection task study in which preschool children and adults searched for a single target picture displayed amongst eight distractor pictures. LoBue and DeLoache reported that, "Both the children and the adults detected snakes more rapidly than three types of nonthreatening stimuli (flowers, frogs, and caterpillars)". While this finding lends important support to theories of an evolved human bias for the detection of evolutionarily relevant threat stimuli, LoBue and DeLoache admitted that the precise stimulus attributes behind that bias are yet to be determined.

An explanation relying on a hard-wired, evolved response is not uniformly accepted by researchers, however. For instance, biogeographer Jared Diamond speculates that, "Probably it was not until recent millennia, as snakes and spiders lost their traditional value as minor food items, that most human societies developed a learned generalized biophobia of snakes and spiders."





In their chapter on Humans, Habitats and Aesthetics (in *The Biophilia Hypothesis*, 1993), Heerwagen and Orians speculate that "...it is even more curious that the real hazards of modern life—guns, bombs, drugs, polluted water—do not generate nightmares or intense fears as frequently as do hazards from our evolutionary past (snakes, predators, darkness)." They conclude that the answer most likely lies "at least in part, in the day-to-day relationship between nature and our hominid ancestors."

In their chapter on Dialogue with Animals: Its Nature and Culture (in *The Biophilia Hypothesis*, 1993), Katcher and Wilkins noted that "cruelty to animals is one of the defining symptoms of conduct disorder, but an intense interest in animals, not cruelty, was common to almost all children in our study."

Note that he indicates "learned", not inherited. As for the "supposedly widespread, innate fear of snakes reported in cross-cultural studies—of people as seemingly diverse as Americans, Europeans, Japanese, white Australians, and Argentinians? These studies actually refer to only a tiny slice of human cultural diversity—a slice composed of modern industrialized metal-using peoples living in centralized political states. Such people have good reason to fear snakes." So Diamond's view is that a fear of snakes (or other species) is a reasonable and adaptive learned response rather than an innate, universal response.

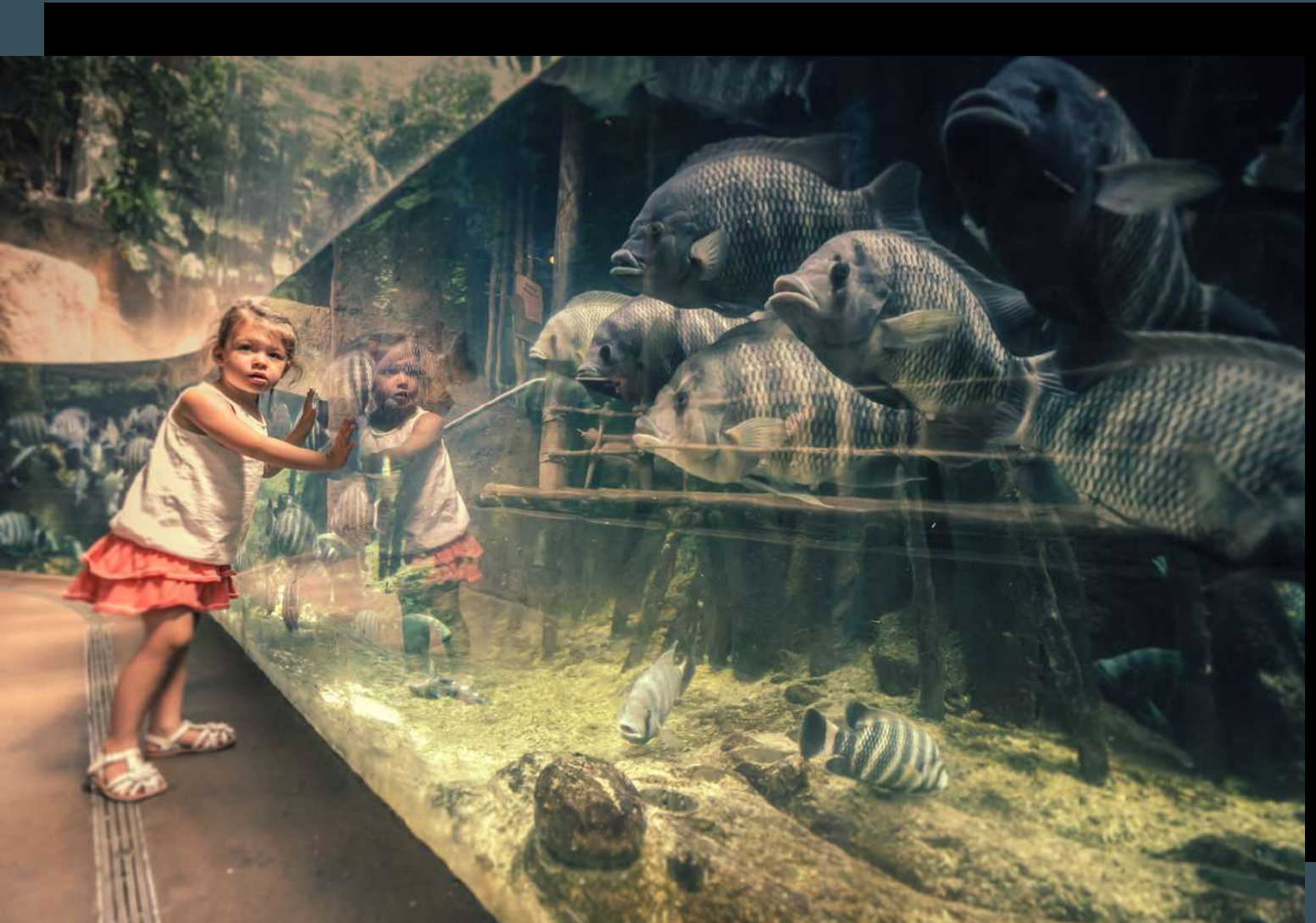
This view is shared by others who have questioned the matter of a hard-wired response to nature. Sue Thomas also noted that, "Over time this process of vicarious acquisition of information about which species are dangerous leads to a state of biological preparedness, and Kellert believes that a critical adaptive function of oral folklore, mythology or other culturally transmitted information might be to vicariously condition adaptive fear/avoidance responses."



This intense interest, they reasoned, could reflect an innate tendency to focus attention on living things, but the choice of behaviour (acts of cruelty) was learned through their childhood experiences with role models. As such, "The study of cruelty to animals as well as the study of pet keeping would profit from the recognition that both activities are alternative and learned means of dealing with an innate attraction to animals."

Following an education program that involved children visiting and interacting with a small collection of animals housed in a zoo, Katcher and Wilkins reported that some children who had previously declared a liking for hunting and killing animals, afterward affirmed enjoyment in taking care of animals.

A takeaway message here is that we have opportunities to cultivate biophilia from very early on in childhood development; we should make the most of these opportunities to foster positive outcomes in childhood through to adolescence and adulthood so as to allow both human and nonhuman animals to flourish. I leave the final words to Heerwagen and Orians: "Evidence pointing to the profound extent to which people are emotionally and physiologically bound to the natural world is steadily increasing. As Wilson pointed out in *Biophilia*, these ties have strong implications for the preservation of biodiversity. A biologically impoverished planet will not only reduce humanity's economic options, it will diminish our emotional lives as well."





Little Miss Muffet

Sat on a tuffet,

Eating her curds and whey;

There came a big spider,

Who sat down beside her

And frightened Miss Muffet away.

*Elliott, J. W., 1870, Mother goose's nursery
rhymes and nursery songs.*





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