

What Tashi Taught Me: “Petagogy” and the Education of Emotions

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Abstract

Begun as a eulogy to the author's late companion dog, Tashi, this paper presents a “petagogy” of emotions as a strategy to enhance human apprehension of our impact on the greater-than-human-world. Occupying the null curriculum of modern education, both emotions and non-human animals have been ill-served by science and the disciplinary organization of modern formal education. Drawing on ecological perspectives of symbiosis and mutual interdependence and a narrative inquiry into her relations with Tashi, the author considers six areas for the education of emotions through petagogy: mutual social bonding, self-regulating negative impulses, enhancing positive feelings, developing empathy, communicating to cooperate, and responding to suffering and death. With these foci, inquiry into animal-human companionship offers reciprocal opportunities to deepen and develop our emotional lives and empathic capacities across species.

Résumé

D'abord destiné à faire l'éloge de Tashi, défunt compagnon canin de l'auteure, cet article présente une « zoopédagogie » des émotions à titre de stratégie d'amélioration de la compréhension humaine de ses propres effets au-delà de l'humanité. Occupant le curriculum caduc de l'éducation moderne, les émotions comme les animaux non humains ont été mal servis par la science et l'organisation disciplinaire de l'éducation systématique moderne. S'inspirant des perspectives écologiques de la symbiose et de la dépendance mutuelle, ainsi que d'une introspection narrative sur ses relations avec Tashi, l'auteure se penche sur six domaines d'enseignement des émotions par la zoopédagogie : le tissage de liens sociaux, le contrôle des impulsions négatives, la culture d'émotions positives, l'empathie, la communication visant la collaboration et la réaction devant la souffrance et la mort. Par ces éléments centraux, l'étude de la camaraderie animal-humain offre des occasions réciproques d'approfondir les vies émotionnelles et les facultés empathiques chez toutes les espèces.

Keywords: curriculum theory, social and emotional learning, companion animals, pets, environmental education, ecology and education

I write this as a eulogy to my beloved companion of eight years, Tashi, who expanded my capacity to love, not merely by inspiring affection, but by his example. He was kinder, gentler, more open and welcoming of others than I, and, in being so, helped me understand the basic goodness of others—of all species. In his eyes I watched, in those final weeks of his reprieve, suffering, and final death, the intelligence and compassion of a loyal friend and the terrible helpless beauty of the ultimate sacrifice we will all face in the end: succumbing to biology.

Despite the prodigious knowledge humanity has amassed on the greater-than-human world, we remain largely indifferent to the suffering and accelerated extinctions we are perpetrating on other species. Research and theories on this indifference have tended to focus on an array of cognitive factors—our tendency to habituate (Erhlich, 2000; MacPherson, 2011), our lack of direct contact with nature (Campbell, 2011), or problems with the narrow disciplinary lens of science (Evernden, 1993; Howard, 2008). Yet, the common factor in these problems is not a deficit in information or knowledge so much as inadequate emotional and affective responses and the personal investments they give rise to. For human beings, emotions and feelings give us the capacity to respond to suffering in others, including strangers and other species, as extensions of ourselves (Dalai Lama, 1999; Nussbaum, 2001). Therefore, the education of emotions is a critical consideration for developing ethics and the ability to *apprehend* the implications of environmental and scientific knowledge for the well-being of the world. In order to understand the world and our responsibilities to it, Cobern (1996) argues, comprehension is a necessary but insufficient condition; instead, understanding requires *apprehension*: the ability “to take possession of” (p. 596) a phenomenon, which Cobern identifies as a metaphysical, rather than an epistemological, process.

“Petagogies” of emotions offer the possibility to deepen knowledge of massive extinctions from information to apprehension through the engagement of emotions: not only as an education in the subject of emotions, and the emotions we share with other mammals, but, if properly conducted, by educating emotions directly, in the therapeutic sense. In this sense, using a pedagogy of companion animals to promote our ability to respond to the greater-than-human world challenges not only the boundaries of environmental education but also the boundaries of education itself. The education of emotions is itself a null curriculum in the modern variant of education now being exported globally (MacPherson, 2011), as is the subject of human relationships with non-human animals, except in highly imaginary forms in elementary language arts (Hardy-Beierl, 2008) or in science, where animals are as likely to be objects of vivisection as compassion (MacPherson, 1999). So, the education of emotions with respect to animals isn’t just an interdisciplinary study, it is a new disciplinary study that spans studies of emotional experiences, ethics, language arts, aesthetics, and science education, to name only a few.

Emotions

Emotions and feelings occupy a neglected shadow in Western science and education. From Descartes' "I think therefore I am" to the Enlightenment's elevation of reason as the path to enlightenment (Kant, 1996/1784), emotions and feelings became identified with sentimentality, childishness, and feminine inferiority. Meanwhile, in education, earlier Stoic and monastic traditions in the education of emotions became obscured or lost altogether (MacPherson, 2011; Nussbaum, 2001). Even today, Panksepp (2003, 2005) has described how this bias has persisted in discriminatory research and funding against the study of emotions.

Humans and Emotions

Such biases notwithstanding, evolutionary theorists now speculate that emotions were key catalysts in the development of humans' higher cortical structures and functions, giving rise to such capacities as consciousness, planning, and abstract reasoning (Dunbar, 1998). As evidence, MRIs suggest that the size and ratio of the pre-frontal cortex in humans is not as unique as was once thought and is comparable in size to those of other primates; instead, what is unique about the human brain is its associative capacity, that is, the connectivity between the prefrontal cortex and other regions of the brain, such as structures associated with emotions, the so-called limbic system, and "mindreading" or empathic abilities involved in imagining the intentions and experiences of others (CINMHA, 2011). These findings suggest that human emotional capabilities and experiences facilitated our higher cognitive abilities and that human emotional development is integral to our cognitive development and "brain" health overall. To be *humane*, in this respect, may well define our species as human. Furthermore, research on emotional dysfunctions in human beings such as anti-social personality disorder indicate that the abuse of companion animals and non-human animals in general is an early indicator of this disorder, which is characterized by a lack of emotional and empathic capacities and a sadistic pleasure in inflicting pain on others, as evidenced in distinctive neurological pathways and pathologies (Herpertz et al., 2001).

Animals and Emotions

Although emotions tended to occupy an abject position historically in the shadow of abstract thought, they were paradoxically used by many to distinguish humans from animals. By denying the capacity of animals to experience emotions, many European thinkers from Descartes onwards felt justified perpetrating cruelty to them for the sake of even trivial human knowledge. In marked contrast, Darwin presented systematic qualitative evidence that shared emotions suggest a close

proximity between *Homo sapiens* and other species. He compared facial and bodily gestures in various species to arrive at a theory of the universality of emotions in animals—including humans (Darwin, 1965/1872). Yet, this view of emotions as closer to our “animal” identity may have contributed to the view that feelings were more vestigial, automatic, and inferior to abstract conceptual thought.

Inferences that animals have emotional and conscious experiences comparable to humans have been highly contested and stigmatized by scientific communities and norms in the past (Masson & McCarthy, 1995). Yet, research conducted in the last decade has contributed to changing scientific consensus in favour of the idea that animals experience emotions and consciousness. One study, for example, found that even small mammals like mice display empathy (Dobbs, 2007), while Silva and de Sousa (2011) show how dogs empathize with human beings beyond mere emotional contagion. Panksepp (1998, 2005) uses neurological data from animals and humans to posit seven “core emotional feelings” that constitute a shared primary affective consciousness. Four of the seven derive from the deepest layer of the forebrain, the *basal ganglia*, a region of the brain common to all vertebrates: seeking (desire), fear, rage (anger), and lust. The three remaining core affective states are associated with the *limbic system*, or emotional centres and functions of mammal brains (much smaller in reptiles): care (maternal and social bonding), panic (separation distress), and playfulness. Panksepp (2005) acknowledges the value of this research, not only because it contributes to an understanding of human consciousness and pathology, but also because “an understanding of affect in the lives of other animals may be critical for making informed choices on how we ethically treat other creatures” (p. 37).

Educating (About) Emotions

Educating emotions can involve cultivating the understanding and awareness of emotions as biological and psychological phenomena, or it can involve the self-regulation of emotions themselves. So, on the one hand, educating *about* emotions is to teach emotions as content—awareness, typologies, their conditions or characteristics, and their causes and effects; on the other hand, educating emotions directly is to cultivate positive emotions (e.g., joy, happiness, kindness) and reduce, redirect, or transform negative emotions (e.g., depression, hatred, anger) and to eliminate their psychological and social pathologies. Both of these are important components to addressing human disengagement from the plight of the greater-than-human world; furthermore, these two different approaches to emotional education can intersect. An example is the Roots of Empathy program, in which mothers with infants visit classrooms to guide students in this loving relationship as an education in empathy (see < www.rootsofempathy.org/ >). This Canadian program both teaches students about emotions and cultivates characteristics of care associated with maternal behaviour.

Companion Animals

“Pets” or companion animals are domesticated animals that live in symbiotic relations of mutuality *and* intimacy with human beings. Companion animals can be distinguished from other symbiotic domesticated animals, like farmed animals, by the subjective perception of their “petness” by humans. Although “petness” is associated with companion animals, it is a condition or social relation being studied more broadly, including with virtual or electronic pets, for the behavioural responses they elicit in human beings, including distinctive emotional naming conventions (Whissell, 2006), the “effort-making” they inspire in children to care for them (Chen, Liao, Chien, & Chan, 2011), and the triggering of baby talk, care, and attachment in human caretakers (Wrye, 2009).

When considering human-companion animal relationships, it is important to balance animal liberation perspectives with considerations of the mutual affection that can exist between non-human animals and humans. Over the years, valid critiques have been made of humans’ relationships with companion animals, focused on problems associated with our dominance over and exploitation of non-human animals to further our own ends (Singer, 1975; Tuan, 1984). Tuan, for example, argued that human affection for pets is inextricable from our wish to control and dominate them: “Affection mitigates domination, making it softer and more acceptable, but affection itself is possible only in relationships of inequality” (p. 5). The critical tradition, reflecting the bias of the Enlightenment against emotions (MacPherson, 2011), has persisted in pitting liberation against love in favour of the former. Therefore, pedagogies of animal liberation, as in Kahn and Humes’ (2009) call for a total liberation movement, need to more deeply consider the relationship between liberation and love and the significant struggles of human beings to develop relationships based on love *and* relative equity with companion animals (Smith, 2003). Love and equity are possible with companion animals because they are capable of expressing agency within mutual symbiotic relationships with humans, even if the expression and interpretation of agency are mutually challenging for animal and human.

Characterized by symbiotic mutuality, companion animal-human relationships offer mutual benefits. The relationships are not parasitic as some claim. Far from harming humans, as would be the case if companion animals were parasitic, humans derive significant benefits from the relationship. Most notable are the health-promotion effects. Companion animals have been found to have therapeutic effects in promoting human affection and emotional bonding, which can parallel the intimacy felt between human beings within a family. With over half of American families having a companion animal, these relationships are important conduits linking many humans to the greater-than-human world (Shepherd, 2008). Barker, Rogers, Turner, Karpf, and Suthers-McCabe (2003) identified 84 studies published in a five-year period between 1996 and 2001 demonstrating a therapeutic benefits to human beings of animal companions

with applications for childhood socialization, Alzheimer's patients, people with disabilities, cardiovascular health, parental bereavement, speech therapy, mental health, and so on. Likewise, Lewis, Krageloh, & Shepherd (2009) found dog ownership correlated with higher scores on physical quality of life; however, they did not replicate earlier studies suggesting pet ownership enhanced psychological health. Nor, reciprocally, are human beings merely parasites living off companion animals, who benefit in multiple ways through the symbiotic relationship, both as species and, in some instances, as individuals, though the benefits vary with species. This is particularly true for potential competitor species like felines and canines, who appear to be advantaged over their wild cousins as human populations burgeon and dominate more and more of the global habitat.

Symbiosis, "living together" in a state of interspecies cooperation, can be mutual (both species benefit), commensurate (one benefits, the other doesn't), or parasitic (one benefits while the other is harmed). Humans are in symbiotic relations with species including plants, intestinal bacteria, farmed animals, and some insects such as bees used in finding or harvesting honey, for example. Companion animals are symbiotic species characterized by mutuality in that the benefits are often reciprocal. In the case of dogs, it is thought that we learned to cooperate across species living in close proximity and competing for many of the same foods. The mutual exchange on which the symbiotic relationship developed appears to have been based on the canine members gaining access to territory claimed by the human competition, as well as a powerful pack, while the human members secured protection.

Method: From Anecdote to Inquiry

This research uses evidence from my relations with my dog, Tashi, a 10-year-old Border Collie cross (part Labrador Retriever) who recently passed away from cancer. I inquire into these experiences as a familiar and intimate case to consider how our mutual symbiosis contributed to reciprocal processes in the education of our emotions. As a form of narrative inquiry, this method differs from the pejorative idea of "anecdote" in scientific discourse about animals in that it derives from sustained experiences over time, rather than a single, isolated story or incident suggested by the term "anecdote." The validity and strength of the method derives from the sustained personal engagement and inquiry.

Tashi

I found Tashi in a pet adoption centre in Winnipeg, where I had just arrived to take up a position at the University of Manitoba. Although I had imagined getting a smaller dog, like a Bichon Frise, I was drawn to Tashi despite feeling some fear given his medium size and heterochromia—one white-blue eye and one brown.



Figure 1: Tashi.

What attracted me to him was his gentle disposition and the sadness in his eyes. At the time, I told my mother he was a sad dog, but that even sad dogs needed a home. Ironically, only a few weeks later, people would stop me in the streets to say what a happy dog he was, and I must have had him a very long time as we seemed so close!

Findings and Discussion

Below I explore salient experiences in our relationship that served as milestones in the mutual education of our emotions. In the weeks after his death, I revisited these experiences repeatedly, as is common in grieving, but donned a researcher's hat in recognizing that they fit within six key categories: mutual social bonding, self-regulating negative impulses, enhancing positive feelings, developing empathy, communicating cooperation, and responding to suffering and death. I arrived at these categories by focused reflection on what I had learned about emotions through our relationship.

Mutual Social Bonding

Tashi and I depended on one another in the exchange of food and protection characteristic of human-dog symbiotic relations: I provided food and shelter

and he provided protection and companionship. He was highly attuned to any intruders on our property or “territory” and would bark unabatedly as an early warning system. In marked contrast, off-property he never barked—not once. Furthermore, his barking was more intense and more difficult to stop if the intruder was a stranger and, in particular, a man. I only occasionally corrected him for barking because it was a duty for him on the order of instinct and an integral aspect of our agreed-upon exchange.

In the over 50% of households in English-speaking countries with family pets, 90% of those surveyed say they consider the pet to be a family member (Wrye, 2009). So, it would seem, for many people, pets are part of their most intimate inner circle social network. Yet, assumptions or claims that animals “love” their human companions are difficult to corroborate. Signs of apparent affection could be projections of our desires guiding the animal to provide the illusions we yearn for to ensure a stable food source. Is it the drive for food shaping the animal to approximate the appearance of love and affection to satisfy our desires, or does the animal feel the emotions and attachments we attribute to such behaviours? Of course, the same question can be posed for children and spouses or dependent parents. As in the primordial biological template of social bonding, the maternal-infant relationship, food and feeding are the basic condition for establishing a complex array of interrelated biological and emotional responses with profound impacts on both parties’ lifelong capacity to love one another and others. To reduce human emotional attachments to a strategy to procure food is both inaccurate and reductionistic: The emotions associated with bonding and their biochemical correlates have as much or more impact on our lifelong wellbeing as nutriment. The same logic applies to animals, especially when they are highly social, as was the case with Tashi.

I have evidence to suggest Tashi was more motivated by emotional need than by food. Because he showed signs of separation anxiety and mild depression when I prepared to leave the house, I tried to give him treats prior to my departure so he would associate my leaving with delicious things. Despite my multiple attempts to do so, he never accepted these bribes. Even his favourite treats remained uneaten on the ground until my return, when he would summarily eat them up on my re-entry—often eight hours later. He rarely ate any food from his bowl in my absence, either, but instead waited until I returned. On my mother’s recommendation, I tried to communicate love through food as well, giving him bits of my food to convey that he belonged, that we were part of the same family or pack. In this respect, our emotional bond wasn’t functioning to give him food and me protection so much as food and barking were functioning to reinforce our emotional-social bond through feelings of belonging, satisfaction, contentment, and safety—a kind of ecological “communication.”

Self-Regulating Negative Impulses

As a Border Collie, Tashi was a herder. Because he came into my life as a three-year-old adult dog, he was full of vitality and loved to play. During the cold Winnipeg winters, I used to dance with him inside, turning up the music, taking his front paws in hand and dancing while he balanced rather awkwardly on his hind legs. When he tired, I would let him down and dance around him. He would join me initially, but he often perched down and watched me very attentively as I circled. Occasionally, in the midst of dancing, I would start play-fighting, tackling and prodding him until he reacted, at which point he would stand up, paw and bite me lightly. Sometimes, I would wrestle him to the ground, and he would growl and bare his teeth. I felt safe with him by then. Indeed, I did it intentionally to provoke his anger. As soon as I knew he was losing his temper, I would move closer, look in his eyes, and whisper affectionately to him, stroking him along his cheek. I could see him struggle to regain control over his primordial, fierce impulses until his bared teeth withdrew behind his lips and he smiled or leaned in to lick me. I later learned that this is a common training method, but we learned it through play. For my part, once mildly afraid of dogs, I witnessed the gradual reduction of my own fears as well.

Panksepp's (2005) four emotions associated with the lower brain,—the so-called primitive brain, structures, and functions—seeking (desire), fear, rage (anger), and lust—are so primordial to consciousness itself that they are often associated with unconscious or semi-conscious drives, instincts, and compulsions rather than with emotions as such. As emotive potentials we share with other, perhaps all, species, these speak deep with a kind of primordial awareness or quality, whose sublimation is the very stuff of civilizations, according to Freud and his psychoanalytic theory and its offshoots.

Enhancing Positive Feelings

I fell in love with Tashi. It wasn't romantic love, nor exactly maternal, but love it was. Perhaps it was what Wilson (1984) calls biophilia, the love of life. At any rate, it took months, even years, to develop, but slowly, over time, we bonded. The evidence was simple—when I had to leave, even for a short time, I experienced separation anxiety and worry, but when I returned, I experienced joy. In his company I felt calm, comfortable, and relaxed. I liked to listen to the sound of his breathing and would wake up in the middle of the night to talk to him. He would sigh or breath more loudly in response to my voice, and I would go back to sleep. Often, I tempted him to lie next to me with a treat as I went to sleep, as it helped me doze off. He would wait a few minutes with his head next to mine, then turn around and lie in the opposite direction for about five minutes, until I was almost asleep, and then he would get off the bed and lie on the floor to sleep.

Yet, it was more than mere comfort. Often, as I approached the house, I felt excitement, hope, and eagerness—joy perhaps—at the prospect of seeing him. I walked faster in my enthusiasm to see him. On his side, he would invariably be waiting when I opened the door, his tail wagging vigorously. If I stumbled with the key and took more than a few seconds to unlock it, he would whine from the discomfort of the delay. Even if he had to go to the bathroom, desperately, he wouldn't go outside until I had bent down, as he sat, to give him a hug. In our first year together, he had stood up to lean on me to hug, but when he started doing the same to others, who misinterpreted it as aggressive, I began stooping down to hug him instead. Only after we had hugged in this way would he go outside to urinate and return to eat with gusto whatever food was left from my morning tempt. The positive feelings Tashi and I developed through our relations are described well by Sacks (2008), a psychoanalyst who, initially propelled by Freud's descriptions of the close relationship he had with his dogs, describes the positive feelings and therapeutic effects her companion Labrador Retriever inspired in clients.

Developing Empathy

Tashi's heterochromia—two coloured irises—only added to the intensity of his gaze. He watched me constantly, and, even as he slept, he would often raise one eyelid every few minutes. I, too, liked to have him in view. I recognized my desire to follow his form when we walked and the pleasure I had watching his beautiful gallop with his tail raised when he approached another dog. This mutual gaze is the first observational step in the development of empathy. Watching significantly increases the likelihood of emotional contagion, as well, as when you watch someone cry and tears well up. One of the first times I cried in front of Tashi he leaned towards me to smell my tears and lick my wet cheek. Thereafter, he watched carefully when I cried and seemed concerned, so I avoided crying in front of him.

Yet empathy is more than mere emotional contagion. The capacity to empathize or imagine the experiences of others is considered the hallmark of the emergence of a distinctive human consciousness. The ability to “step back from the world,” to imagine and see the world at a distance, is associated with human awareness, science, technology, (Dunbar, 1998). Yet, some mammals appear to have this ability, too. I recall the first time I realized Tashi could follow my gestures and gaze. We were driving through the Rocky Mountains to Calgary. Tashi had never seen mountains before. I called his name and he sat up. I pointed and said, “Look, Tashi.” He followed my gesture and his eyes locked on the mountainous horizon. He sat for 15 minutes, bolt upright, eyes riveted on the mountains until we reached the foothills.

Udell, Dorey, and Whyne (2010) proposed a “two-stage hypothesis” to explain the superiority of canines in following human gestures as when pointing to hidden food. They identified two factors that enable dogs to do this: first,

imprinting on humans during the sensitive period of social development and second, appropriate reinforcements for following human gestures. Because this implies the ability to infer intention in the gesture, Silva and de Sousa (2011) consider this sensitivity to be evidence of dogs' empathy beyond mere emotional contagion or classical conditioning because it implies knowledge of the intention of the person pointing to show the location of the food. The authors then speculate "whether it could be possible to train people (or dogs?) to become more empathic, and which processing level (emotional or cognitive) should be targeted in order for such training to be most effective and persistent" (p. 3).

Communicating to Cooperate

Being a language teacher and writer, I always used words where possible to direct or communicate with Tashi. I avoided using leashes, not because Tashi minded them, but because I wanted to encourage him to follow my words, which he did. He would watch my gestures carefully, too, and he developed a small lexicon in the process—"let's go," "no," "stop," "up," and more. He learned to speak, in turn, opening his jaw to yawn a high-pitched kind of "Oh Ya!" that sounded very much like me as I spoke to him in a very high voice. So attuned did I become to his sounds that he would only need to whimper at night and I was out of bed, like a new mother with a crying child, opening the door for him to go outside. When we went to a favourite park or river or returned home after a long day, I would say: "Where are we going, Tashi?" He would sit upright and look around, searching to see what I was referring to.

Two weeks before Tashi died, before we knew his tumours had returned, he jumped up on the bed in the early morning, which was unlike him. I was still asleep but stirred to lean in to pet him where he lay in the dawn light. I spoke softly to him. He lifted his head and lay it down on my right hand, his eyes looking up towards me; then, he lifted his right front paw and lay it in my left hand. We lay there for some time watching one another, and I knew. I knew without a doubt that he was going to die, even though we had been told his cancer had gone. Tears welled up in my eyes. In the light, lying there as I drifted in and out of sleep, Tashi still watching me, I had a hypnogogic image of an angel—the biblical kind, huge, golden-hued with big, bellowing wings—leaning over Tashi to embrace him, preparing to take him away. We communicate with our bodies, with gestures, with chemicals translating into images and felt stirrings deep within us that speak important truths that may or may not be articulated in words.

Responding to Suffering and Death

Tashi first developed cancer of the spleen. Although we had his spleen removed and the biopsy indicated the cancer was unlikely to spread, a few months later he developed tumours in his liver and heart. His health waned. He lost the use

of his back legs altogether and his front legs became distended. He would cry for hours at night and would bite my hand if I tried to shift him to prevent bedsores. Although I object in theory to the use and abuse of euthanasia with animals, I had the veterinarian come to our house and put Tashi down. He was attentive and alert but in abject pain. I held him in my arms and whispered in his ear as he gazed up at me: “Where is Tashi going? Where is Tashi going?” He displayed the familiar look of attentive curiosity—the alert, questioning, and interested mind.... As I held his head cupped in my arms, he inhaled deeply and then let out a big sigh. On this out-breath, he died.

That is the final lesson Tashi taught me, and one I will remember well: We all die on an exhalation—a deep exhale, a final sigh. In this way, Tashi taught me about suffering, but he also taught me about death, about freedom from suffering in death, and about love: that love lasts in the lingering memories of the deceased, who continue to live in us. To be moved by suffering surely begins with the capacity to respond to suffering in a specific other—an intimate. Only then can empathy and compassion be meaningfully extended and generalized to a “stranger” distant from ourselves—and who more distant than another species? Without this capacity for compassion, knowledge of suffering is mere information. Information delivered without the opportunity to respond to suffering in a felt, emotional way may well drive pathological pathways that interrupt natural connections between knowledge of suffering and the natural emotional responses to such knowledge.

The defining trait of anti-social personality disorder (psychopathy) is the disconnection between observing suffering and empathic responses. This disorder has distinctive neurological pathologies characterized by interrupted pathways between the amygdala and pre-frontal cortex. An early symptom is conduct disorder in children, which is characterized by positive reinforcement (amygdala stimulation) when viewing suffering in others *and* an inclination to be cruel to animals. Herpertz et al. (2001) conclude that hypoemotionality in psychopaths may predispose them to violence “because it prevents them from experiencing emotions that naturally inhibit the execution of violent impulses” (p. 744).

Implications for Environmental Education

Although most research appears to confirm that companion animals promote human well-being and quality of life (Barker et al., 2003), Lewis, Krageloh, and Shepherd’s (2009) New Zealand study suggests that having a dog may imply little more than that their human companions have more money. What is clear is that, however compelling the personal advantages of companion pets may be, these benefits do not necessarily generalize to environmental advantages. Therefore, the implications of pedagogies in educating (about) emotions for an environmental educational agenda is a more complex proposition. Companion animals have been a characteristic of most humans and human societies for

millennia and have not naturally inspired deep emotional sensitivities and empathic sensibilities towards the greater-than-human world.

Singer (1981) argues that altruism, begun as a drive to protect kin and community members, developed into a conscious ethic within an expanding circle of moral concern. So, however abstract and universalized altruism may become as it extends to an expanding circle of strangers, it begins with feelings of protection and intimacy towards those in our immediate inner circle. When we consider the development of an ethic of care towards the greater-than-human world, by the same logic, it makes sense that this ethic would depend on personal and direct relationships. Companion animals, in this respect, are part of our inner circle and so our shared emotional lives can serve as the bases for extending the same ethic of care to animals at a greater distant from our immediate experience. As Singer (1981) argues:

The answer may lie, not just in the universality and strength of family feeling, but also in the benefits to society as a whole that come from families taking care of themselves. ...Given the much greater intensity of family feeling compared with the degree of concern we have for the welfare of strangers, ethical rules which accept a degree of partiality toward the interests of one's own family may be the best means of promoting the welfare of all families and thus of the entire community. (pp. 23-53)

Expanding circles of concern from intimates, like companion animals, to strangers, in this case other species who inhabit worlds distant from ours, is neither necessary nor automatic; it requires explicit education, reasoning, and imagination, and some degree of explicit education in formal schooling. Yet, as a null curriculum, pedagogies and the education of emotions challenge the current disciplinary and institutional structures of schools. The in-depth interdisciplinary studies of pets in schools could span literature, social studies, and science by considering how our social and emotional lives compare and develop in relationship to those of (companion) animals. Of course, ideally, children or learners need access to companion animals. Such contact might come from companion pets at home, for those students with a family pet; however, for the remaining children, alternative sites for access could come from neighbours or community members willing to share their companion animals with children at home or in schools or in more formal programs involving bringing companion animals into classrooms, like the Roots of Empathy program.

The key steps or possible steps to develop an environmental education agenda for a pedagogy of the education of emotions are as follows:

- sustained access and exposure to companion animals,
- inquiry into emotions,
- comparing emotions and signs of emotional experiences in animals and humans,
- inquiry into bonds and social relations within and across species, and
- considering implications for our responses, and responsibilities, to the greater-than-human world.

The human capacity for a proper emotional or affective response to mass extinctions arises from our ability to respond to suffering and death rather than to abstract information or facts. Although suffering and death transpire on a different order from extinction—only individuals suffer, not species—our ability to respond empathetically to suffering and the death of other species stem from the value we place on them, which in turn affects our willingness to protect them, either in the particular or the general. This capacity to recognize and respond to suffering and death depends on experience—such capacities are unlikely to be cultivated in the abstract. As Campbell (2011) suggests, “You do not protect what you do not love, you do not love what you do not know, and you do not know what you do not experience” (p. 9). For most humans in increasingly developed, urban worlds, our most direct experiences with animals are with pets. Therefore, the development of appropriate responses to the greater-than-human world needs to begin there.

For this same reason, pedagogies to educate emotions need to reinforce broader commitments to teach reverence for life, which might include the following (MacPherson, 2002):

- cultivating classrooms, schools, and playgrounds as sanctuaries for life,
- encouraging identifications with environments and greater-than-human life,
- mindfulness of our biological bases and ecological relations,
- cultivating empathy and compassion for greater-than-human life,
- saving the lives of those in the greater-than-human world,
- fostering direct experiences and contacts with greater-than-human worlds, and
- supporting the interdisciplinary study of nature.

Conclusion

Environmental education remains a field strongly identified with disciplines of science and outdoor wilderness education. Both disciplines are at risk of minimizing the value of curriculum aimed at including social-emotional learning and companion animals as “soft,” “personal,” and associated with women. For this reason, disciplinary obstacles may be greater than institutional and practical obstacles to implementing effective pedagogies of emotional education in formal education. What pedagogy has to offer environmental education is a deepening and extension of learners’ commitments and understanding of the greater-than-human world to counter what Cobern (1996) terms “cognitive apartheid.” Instead of segmenting off merely comprehended information about the world in an apartheid process, learners are supported to engage in a deeper understanding of their personal, felt identifications and relations with the greater-than-human world. This needs to reach respectfully into their lives and affections in a non-judgemental way, to build on those relationships that already exist and already compel their attention and personal investments.

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