

Minding Animals, Minding Earth: Science, Nature, Kinship, and Heart

Achtsamkeit für Tiere, Achtsamkeit für die Erde: Wissenschaft, Natur, Verwandtschaft und Herz

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Hier wird die Notwendigkeit betont, einen breiteren Ansatz in der Verhaltensforschung und Ökologie zu finden, der integrativer, interdisziplinär, sozial verantwortungsbewusst, mitfühlend, spirituell und holistisch sein soll. Insbesondere lehrt uns die Verhaltensforschung der Tiere, vor allem die ethologische Forschung der Tieremotionen mit Individualisierung und Namenserkennung, mehr über unser eigenes Menschsein und unser Verwachsenheit mit der Natur. „Achtsamkeit für Tiere“ als „tiefe Ethologie“ bietet somit einen Weg, um über die Tierwelt Wissen und Weisheitsquellen zu finden. Wir sind alle Mitglieder einer globalen Gemeinschaft auf dieser Erde, die uns intime, rezi-proke, heilsame und friedvolle Beziehungen abverlangt. Die Zeit läuft uns davon. Wir sollten gut nachdenken und vorsichtig sein, wie wir unsere Umwelt „aufschmücken“. Wir könnten sicherlich mehr für die Tierwelt und die Natur tun, die flehentlich um unsere Zuneigung und bedingungslose Unterstützung bitten.

The earth is, to a certain extent, our mother. She is so kind, because whatever we do, she tolerates it. But now, the time has come when our power to destroy is so extreme that Mother Earth is compelled to tell us to be careful. The population explosion and many other indicators make that clear, don't they? Nature has its own natural limitations.

A clear distinction should be made between what is not found by science and what is found to be non-existent by science. What science finds to be non-existent, we must accept as non-existent; but what science merely does not find is a completely different matter ... It is quite clear that there are many, many mysterious things.

I believe that at the most fundamental level our nature is compassionate, and that cooperation, not conflict, lies at the heart of the basic principles that govern our human existence ... By living a way of life that expresses our basic goodness, we fulfill our humanity and give our actions dignity, worth, and meaning.

(HH the Dalai Lama, 'Understanding our fundamental nature')

The path to Nature's wisdom: A kaleidoscope of radiant sensuality

If we don't always start from Nature we certainly come to her in our hour of need. (Henry MILLER, 1957, p. 93)

... I believe that the true, fundamental relationship between humans and the natural world is one of wonder, beauty, and intimacy. (Thomas BERRY, 2000, p. 93).

When human beings lose their connection to Nature, to heaven and earth, then they do not know how to nurture their environment or how to rule their world - which is saying the same thing. Human beings destroy their ecology at the same time they destroy one another. From that perspec-

tive, healing our society goes hand in hand with healing our personal elemental connection with the phenomenal world. (Chögyam TRUNGPA, 1988, p. 125)

There is a basic goodness in Nature. The sun shines. Flowers give fragrance and colour. Fruit gives nourishment. Fire gives warmth. Rain irrigates. There is even simple beauty in winter, death and decay. Nature being red in tooth and claw is a misconception. There is more exuberant beauty in Nature than there is cruelty ... there is enough in the world for everybody's need, but not enough for anybody's greed. (Satish KUMAR, 2000, p. 3)

No one on Earth can ignore the devastating effects of humans on Earth, and none of Earth's beings, landscapes, or habitats, including water and air, is exempt from our actions. Thinking about 'The Path to Nature's Wisdom' requires us to take a very broad perspective on a variety of different questions. Some areas of concern include: asking questions about what science is and how science is conducted, assessing the importance of wide-ranging holistic interdisciplinary discussion that transcends more narrow concerns, figuring out how common sense and 'science sense' are reconciled, and, most importantly asking what are the roles of compassion, kindness, generosity, respect, grace, humility, and love in what we call 'science'. I realize that it is impossible to be perfect beings, that all of us are hypocritical on some occasions, but surely we can do much better than we have in our encounters with Nature and Earth if we strive for a more comprehensive, respectful, and compassionate Earth ethic.

Of course, these are only a few among many questions that need to be considered, and any answers that are offered will necessarily be tentative and open to future revision. Nonetheless, these challenging and often frustrating questions must be dealt with *now*, for any delay will result in more devastation of Earth. As His Holiness the Dalai Lama reminds us, Mother Earth is telling us - actually warning us - to be careful about how we interact and use her. Thomas Berry stresses that our relationship with Nature should be one of *awe*, not one of *use*. I agree. Nonetheless, we continue to use awe-inspiring animals in a wide variety of activities and much of this use really is harmful abuse.

Embodied and emergent wisdom. Henry Miller's quotation with which I began this section rings true for me and for many others. But why is this so? Why do we go to Nature for guidance? Why do we feel so good when we see, hear, smell, and if possible, touch other animals, when we look at trees and smell the fragrance of flowers, when we watch rushing water in a stream, lake, or ocean? We often cannot put in words why Nature has such positive effects on us — why when we are immersed in Nature we become breathless, we place a hand on our heart and feel our heart rate slow down because of Nature's beauty, awe, mystery, simplicity, multiplicity, and generosity. But just because we cannot utter words about the effect Nature has on us this does not mean that she does not have an effect, for clearly she does. Perhaps our inability to express Nature's effect simply means that the feelings that are evoked are so very deep (perhaps primal) that there are no words that are deep or rich enough to convey just what it is that we feel. We usually feel joy when we know that Nature is doing well and feel deep sorrow and pain when we perceive that Nature is destroyed, exploited, and devastated. I ache when I feel Nature's wisdom being compromised and forced out of balance. My primitive brain that is immersed in new and rapidly developing cultures and technologies re-

tains much of my close ties to Nature. Perhaps the sheer joy we feel when Nature is healthy, the joy we feel when we are embedded in Nature's mysterious ways, is but one measure of the love we have for her.

Old brains in new bottlenecks: Don't fool with Mother Nature

We need the wonder of the dawn, the wonder of the forest, the wonder of a river, the wonder of a prairie. (Thomas BERRY, 2000, p. 97)

Regardless of why, and perhaps there is not a single or even a small handful of answers, Henry Miller is correct: Nature is often sought when we feel out of balance, when something does not feel right. A recent survey has shown that 70-90 % of the general public who were questioned in Europe and in the United States 'recognize the right of Nature to exist even if not useful to humans in any way'. The wisdom of Nature has a right to be protected. Whether or not Nature has her own inherent embodied wisdom that is at the same time emergent and shared, a wisdom that interacts with our own expectations of what Nature is all about, or if we project and imbue Nature with such qualities for one or another reason and she is really just a state of our own mind, I find that I am never be alone and neither do I feel lonely when I am 'out in Nature'. I converse with Nature and she converses with me.

I feel that Nature trusts us not to defile her, not to humiliate her, so we better not do so. Surely, there must have been more significant consequences for our ancestors if they 'fooled' with Mother Nature. They did not have all of the mechanical and intellectual machinery with which to work to undo their intrusions into natural processes. Indeed, they were probably so busy just trying to stay alive that they could not have possibly reeked the havoc that we have reeked on Earth without a large price to pay. It would be wonderful if we could tune into our old (some might say 'primitive') brains and let them guide us, for our brains are very much like those of our ancestors but our sociocultural milieus and Earth, significant new evolutionary bottlenecks, have changed significantly over the last millennia. Cycles of Nature are still with us and within us, although we might not be aware of their presence because we can so easily override just about anything 'natural' with technology and by keeping 'busy'. And much technology and much 'useless busi-ness' cause alienation from Nature, and this rupture in turn leads to our wanton abuse of Earth. It is all too easy to destroy something to which we are not attached, or to abuse another being to whom we are not bonded.

When I think about Nature's wisdom I also am 'forced' into coming to terms with who I am in the grand scheme of things. While I usually come to the conclusion that I am very small in a very large world, this does not diminish me or make me feel a lesser being. Indeed, realizing that I am very minute in an enormous world frees me and envelopes me in much peace, and I rejoice in who I am in the grand scheme of things, Nature's random processes, more predictable rhythms, and all. When I am immersed in Nature I feel her warmth deep in my heart, and all of my senses tingle with her radiant beauty and sensuality. The sights, sounds, odors, and touches of Nature are there for everyone to behold — they say 'hello' and welcome us to enjoy and partake in her splendor. I often feel that Nature's wisdom is so

very simple, and that she truly wants us to receive her messages and to resonate with them. When we give her respect, compassion, and love, she returns them in abundance. And when we give her respect, compassion, and love it is easy to feel a deep sense of unity as part of an integrated community of friends in which past, present, and future stand next to one another, in which past, present, and future are intimately interconnected in space over time. I feel animals talk to me, trees, talk to me, rushing water talk to me, and even rocks and the very ground on which I am walking talk to me. How can one feel lonely or alone when there is such a kaleidoscope of radiant sensuality surrounding and entering them, a cacophony of Nature's music and sensuality just waiting, perhaps longing, to be experienced by all?

Beware silent springs. Bernie Krause refers to the sounds of natural habitats and living organisms as 'the most beautiful music on the planet. It is also its collective voice'. Thus, we must beware of losing Nature's voice, we must beware of suffering not only maladies associated with silent springs but also the ailments and psychological damage associated with silent summers, autumns, and winters. Let us not silence Nature's voices. The wrong path to tapping into Nature's wisdom is to disrupt the precious lives of other animals and silence their voices, or to prevent leaves from blowing in the breeze or to impede water from sloshing about. Because I study animals I want there to be places on Earth where animals can be safe from harm caused by humans. In our own wisdom we must provide refuges where animals can be safe, where they cannot be harmed. In an action displaying true human wisdom, the country of Mexico has recently signed an accord to protect whales in its waters. It will be in the largest sanctuary in the world, about 1.1 million square miles of water. Sadly, and unwisely, refuges do not protect animals. On Cape Cod (Massachusetts) there is a wildlife refuge on Momomoy Island, where animals are supposed to be protected from human disturbance, but where numerous coyotes are routinely killed. Some refuge! In the United States, animals can be hunted on so-called national refuges. Surely, if we do not protect animals in areas where they are *supposed* to be protected, in areas where they are supposed to be able to live their lives in safety, we risk losing their voices, Nature's sounds.

What is wisdom? Does Nature know best?

No people ever knew the Earth as well as we do in terms of its mechanistic processes, but no people have ever had less intimacy with the planet. We are shriveled up in our souls. (Thomas BERRY, 2002, p. 95)

What do we mean by the phrase 'Nature's wisdom'? When I looked up the word 'wisdom' in the Oxford English Dictionary and in a thesaurus I found the following phrases and words: 'goodness of judgment', 'erudition', 'clever', 'knowledge of a higher kind', 'judging rightly in matters relating to life and conduct', 'prudence', 'discretion', 'insight', 'sensible', 'common sense', 'tact', 'intelligence', and 'understanding'. I wondered how each might inform a discussion of the topic with which we are concerned in this meeting, *The Path to Nature's Wisdom*. What I see is that, loosely applied, talking about Nature's wisdom suggests that Nature seems to understand herself and her rhythmic dance through space and time, although this

understanding might not be obvious in a narrow-minded or short-term view. That, perhaps, there truly is some self-organizing principle that applies to the concept of Nature, taken broadly, and that in the short amount of time that each of us is on Earth we cannot possibly understand or appreciate the underlying dynamics that have allowed Nature to persist for millennia, no matter how wise we are as individuals, no matter how wise is our collective wisdom. One of my colleagues mentioned to me that he is concerned that talking about Nature's wisdom is truly an anthropocentric exercise and that we need to be very careful when we discuss what we mean by the phrase 'Nature's wisdom'. I agree, but I do believe that it is a very useful way to speak about Nature. And perhaps, Nature knows best.

While the challenge and impossibility of ever achieving a deep comprehension of Nature's wisdom might be frustrating and cause some people to give up trying to understand the nature of her wisdom, I find the challenge to be inviting because in my attempts to come to terms with Nature's wisdom I feel that we can make Earth a better place for all beings, for all life, for all environs, animate and inanimate. I feel that we can truly come to terms with the 'big picture' in which every event is interconnected, in which we take a holistic view of Earth as a community of subjects rather than a mere collection of objects, to borrow a phrase from Thomas Berry. Berry stresses that no living being nourishes itself; each is dependent on every other member of the community for nourishment and assistance it needs for its own survival.

Animals as a path to Nature's wisdom, Animals as a way of knowing

There are innumerable ways to interconnect with Nature, far too many to count. None is necessarily better than the others and each brings much joy, happiness, pleasure, peace, and intense and immense splendor and awe. Those of us who love (and study) animals often claim that we have a unique and deep interconnection, but so do those human beings who love trees, rocks, bodies of water, and the very air we breathe. While there are many ways in which humans connect with Nature when we redecorate and all too often harm her, I want to concentrate on the more positive ways in which we interconnect with Nature and tap into her deep wisdom. I am sure that many others have an insatiable drive to learn more from Nature each and every day. Perhaps in the future there will be studies of the neurobiology of experiencing wisdom as there are studies of the neurobiology of spirituality and religion (a new field called 'neurotheology').

I am a very lucky man. I live in a beautiful area of the world and spend much of my time outdoors, studying various animals and being fortunate to be able to ride, hike, or ski to the University. For more than two decades I have lived in the mountains outside of Boulder. I willingly share the surrounding land with many animal friends — coyotes, mountain lions, red foxes, porcupines, raccoons, black bears, a wide variety of birds, lizards, and insects along with many dogs and cats. They have been my teachers and healers. They have made it clear to me that they were here first and that I am a transient on their turf. I have almost stumbled into mountain lions and have watched red foxes playing right in front of my office door. Adult bears and their young have played outside of my kitchen window. I feel blessed to have

had these and other experiences and if I need to make changes in how I live to accommodate my friends it is just fine with me.

Simply being in the presence of animals provides not only pure joy but also access to a major source of Nature's wisdom. As I stir in bed each morning I am able to look out at some beautiful mountains and trees. Depending on the time of year I am blessed with melodious bird song, the pungent odor of a skunk, the howling of coyotes, insects buzzing here and there, and the soothing sound of rushing water. I often experience tears of joy for I feel so lucky, so blessed, to awaken into Nature's heart and arms, into Nature's generous and warm blanket of sensuality. It is now June and I hear the rushing of Boulder Creek below my house and I see and hear violet-green swallows nest in the eaves of my house. These small and happy birds begin each day by taking flight and playing with one another - chasing one another and wrestling in the grass. As I watch them I find myself smiling and thinking how wise it is to begin each day with play. In their own wisdom these swallows know how to face the day.

Many ideas come to me early in the morning as I listen to birds sing, the occasional coyote howl, and the water in Boulder creek rush by. A resident family of red foxes frequently shows itself, skunks greet me with their pungent odor, mule deer casually browse just outside my kitchen window, and if I am lucky I catch a glimpse of a wandering black bear or mountain lion. I try to sense the world through the eyes, ears, and noses of these amazing animal beings. I ask 'What is it like to be another animal?' Animals are a way of knowing.

So may be trees. A few years ago I had a window installed in my office that allows me to look at a magnificent ponderosa pine tree. When I asked my friend to do the carpentry he was incredulous – 'you'll just see the darned tree' he told me, as if I did not know! 'I know,' I told him, 'I love trees! I can see mountains from other windows but seeing and feeling the presence of this tree makes me feel good - makes me smile - makes me appreciate all of Nature. Often I just sit and stare at 'tree' and wonder what she is feeling. I often ask 'tree' what she thinks. Her bark is rich with life — insects and birds visit her regularly for nourishment and protection. Trees are wonderful beings, and they provide all sorts of comfort for many animals. I ache when I think of a tree being cruelly felled.' A 17 year-old girl in a juvenile detention told me that she is thankful for trees, for she feels safe when she is with them but not with people or most animals. 'Trees don't judge me or talk back' she told me. Julia Butterfly Hill recognized this as she choose to live high in a 180-foot tall California Coast Redwood tree she named Luna for more than two years. Trees can be soothing and stalwart companions.

Minding animals and Minding Earth: Deep ethology

I developed the notion of 'minding animals' because it emphasizes just how important animals are to me and how important it is to try as hard as we can to take their point of view on their worlds. I use the phrase 'minding animals' in two ways. First, 'minding animals' refers to caring for other animal beings, respecting them for who they are, appreciating their own world views, and wondering what and how they are feeling and why. The second meaning refers to the fact that many animals have very active and thoughtful minds. In many of the same ways we can

also ‘mind Earth’. We must care for her and appreciate, respect, protect, and love her, and also recognize that Earth and all of her inhabitants are somehow ‘mindfully engaged’ because of interdependent interactions among them. Minding animals and minding Earth should cause us ‘to wise up’.



At the beginning of winter owls may be often seen silently hunting in the dusk and making use of their keen sight and excellent hearing. — Zu Winterbeginn sieht man mitunter Eulen mit ihren scharfen Augen und ihrem hervorragenden Gehör lautlos in der Dämmerung jagen.¹

I also call myself a deep ethologist. I, as the ‘see-er’, try to become the ‘seen’. I become coyote, I become penguin (I also become tree, and often I become rock). I name my animal friends and try to step into their sensory and motor worlds to discover what it might be like to be a given individual, how they sense their surroundings and how they move about and behave in certain situations.

Moving toward a heartfelt science

I have a number of goals that I would like to accomplish in my short life on Earth. Some of my ideas have been presented in previous papers and books, whereas others are constantly being revisited and revised as I ponder more deeply just what it is that animals can teach us about Nature's wisdom. I am sure that some of the very ideas about which I write now will metamorphose when I revisit this essay and I discuss with colleagues. It is precisely the dynamic, frustrating, and very challenging topics with which I am concerned that keeps me working feverishly to gain a coherent perspective, at least for a short period of time. There are many ways to

¹ Photo: <www.terra.es/personal2/cmondelo/lechuza.htm>

travel the path of Nature's wisdom and to learn about her sagacious ways, and I hope that I can convince you that one path travels directly through the hearts and minds of our animal kin, and that we can learn much about Nature's wisdom if we open our own hearts and minds to her prudent ways. Given what some people do to animals, I often wish they were not as sentient and wise as they are. But the fact is that they are and we must change our ways and we bond with and love animals because they are such wise and feeling organisms.

It is essential that *heartless* science is replaced with *heartful* and *compassionate* science and that all scientists take seriously their responsibility to be socially responsible and share their findings with nonscientists and the community at large. In my view, we need much more than traditional science — science that is not socially responsible, science that is autonomous and authoritarian, science that fragments the universe and disembodies and alienates humans and other animals — to make headway into understanding other animals and the world at large. We need to broaden science to incorporate and to be drenched in feeling, heart, spirit, soul, and love. Scientists need not be suspicious of things it cannot fully understand. Scientists need to exit their heads and go deeply into their hearts, and science needs to open its arms to people who love the world and who have a reverence for all life. Scientists should not be inhibited about being sentimental. We need a science of unity; a science of reconciliation, a compassionate science.

Some suggested rules of engagement: Goodwill, mercy, magic, and wisdom

Humans are part of Nature. We are deeply embedded in Nature and do not stand above or to the side of other natural processes. There is no duality, no 'them' and 'us'. If we try to separate our own reality from that of other Nature and Earth an unnatural division results and this causes much discontent and discord, for it is so very *unnatural*. Indeed, we are part of Nature's wisdom although at times it does not appear that this is the case. I find it settling - very relaxing - to situate myself 'in Nature' and to sense and experience the magic and wonderment of allowing myself to be there.

Given who we are and that we are all over Earth, we do indeed have the power to dominate other Nature - other animals and all other landscapes some of which might seem to have little or no value to us. We truly are *that* powerful and thus, our animal kin depend on our goodwill, mercy, and wisdom. We eat other animals, we hunt them, we use them in education and research, and we let them entertain and amuse us. We also spread human diseases when we visit the places where animals live. Our relationship with other animals is usually very lop-sided with few if any benefits going to the animals themselves. We can choose to be intrusive, abusive, or compassionate. We do not have to do something because someone else wants us to do it. We do not have to do something just because we can do it. Each of us is responsible for our choices. Some ideas we should base them on include (1) putting respect, compassion, and admiration for other animals first and foremost, (2) taking seriously the animals' points of view, (3) erring on the animals' side when uncertain about their feeling pain or suffering; (4) recognizing that almost all of the methods that are used to study animals, even in the field, are intrusions on their lives and much research is fundamentally exploitative; (5) recognizing how mis-

guided are speciesistic views concerning vague notions such as intelligence and cognitive or mental complexity for informing assessments of well-being; (6) focusing on the importance of individuals; (7) appreciating individual variation and the diversity of the lives of different individuals in the worlds within which they live; (8) appealing to what some call questionable practices that have no place in the conduct of science, such as the use of common sense and empathy; and (9) using broadly based rules of fidelity and non-intervention as guiding principles. A great challenge centers on how we will reconcile common sense with 'science sense'.

There may well be some studies that we want to do but cannot because there is no ethically defensible way to conduct them, at least not now. And there just has to be some places that we leave be. The environmental ethicist Holmes Rolston has this to say about Antarctica, a continent that is attracting more and more attention (similar to an unknown or an appealing animal in a cage in a zoo often does), one that could easily be taken over by humans: "... here is one continent on the home planet that is not, cannot, and ought not be our home." (ROLSTON, 2002, p. 134) I agree. Let's preserve Antarctica's integrity as much as we can, let's honor the wisdom of this magnificent continent, a place where I studied Adelie penguins and south Polar Skuas in the 1970s. It was during the time that I spent in Antarctica that my interests in science and ethics were kindled, and these concerns have been important to me since then. I often asked myself as I walked among the penguins, 'What in the world am I doing here?'

The study of animal behavior and its relationship to Nature's wisdom

The study of animal behavior, especially animal cognition (BEKOFF, ALLEN and BURGHARDT, 2002 and essays within) and animal emotions can help us learn about not only Nature's wisdom but also about our own. We can access much of Nature's wisdom by studying animal cognition and animal emotions, the myriad of ways in which animals display their unfettered and 'unedited' pure passions. I often wonder if our view of the world would have been different had Charles Darwin been a female, if some or many of the instances in which competition is invoked were viewed as cooperation. Here are a few stories, tales of wisdom that demonstrate animal prudence, insight, and discretion.

Erudite elephants: An instance of individual wisdom

Few people would be surprised to read about Nature's wisdom as instantiated by elephants. These magnificent beasts are known to be incredibly socially intelligent, to possess unparalleled memory, and to experience rich and deep emotions. And the older one is, the wiser she is, and the importance of her presence to her social group is more critical than that of younger females, some of whom might become future wise matriarchs as they age. As the result of long-term field work on African elephants (1,700 individuals observed over 28 years), Karen McComb and her colleagues, working on the Amboseli Elephant Project in Southern Kenya, discovered that the removal of older and more experienced females who are often the targets for hunters looking for ivory, has serious consequences for endangered populations of these wonderful beings. The social knowledge that is accumulated over

long years plays a direct role in enhancing per capita reproductive success for groups of female elephants led by older individuals. Families with older matriarchs are better at using sounds from other groups to discriminate between familiar and unfamiliar females in the vicinity. Overall, enhanced discriminatory abilities of older females and their store of social knowledge seem to influence the social knowledge of the group as a whole.

Might we say that aged elephant matriarchs are wise? Is there a collective wisdom of elephant clans? Can we speak of erudite elephants? I dare say we can.

The wisdom of playing dumb

Christine Drea and Kim Wallen have discovered that low-ranking rhesus monkeys will play dumb in certain social situations. It is too simplistic and anthropocentrically arrogant to assume that animals other than humans do not control their behavior according to who is watching. It might be wise to play dumb in certain contexts. Drea and Wallen studied monkeys as they learned to discriminate boxes that contained food from those that did not. They compared the performance of monkeys tested in the presence of all members of their social group with their performance in groups of only more dominant or only more subordinate monkeys. They then reversed the situation and tested monkeys on the same problem — a monkey previously tested in the company of only dominant individuals was then tested in the company of only subordinate monkeys and vice versa.

The results of this creative study are very interesting. Dominant monkeys performed well in all conditions but subordinate monkeys performed well only when they were apart from higher-ranking animals. Because all monkeys had previously learned the task, Drea and Wallen concluded that the subordinate monkeys were indeed playing dumb - they were voluntarily inhibiting their behavior depending on who was around. Subordinates who learned the discrimination when alone showed a performance decline when intimidating higher-ranking animals were nearby; an individual's dominance status relative to other monkeys made it advantageous to play dumb. How wise they were. Had monkeys only been studied in the presence of dominant individuals, Drea and Wallen might have concluded that subordinate individuals were dumber than dominant animals, not that they were simply playing dumb for good reasons. They were wise to do so.

The wisdom of knowing what others know

Recently, Brian Hare, along with Josep Call and Michael Tomasello, asked the question 'Do chimpanzees know what other chimpanzees know?' Because chimpanzees rely heavily on vision to acquire information, they wanted to learn if chimpanzees show an understanding of what others can and can't see. Anecdotes suggest that chimpanzees and other animals are well aware of what others can see. Jane Goodall observed a chimpanzee refrain from retrieving or even looking at fruit when other chimpanzees were present, only to retrieve it after others left. One of my former graduate students, Susan Townsend, discovered that wolves refrain from caching or retrieving food when other wolves are present. Chimpanzees

will also hide parts of their body, for example, a facial expression called the ‘fear grimace’, so that others will not see they are afraid.

Scientists want more than fascinating stories, so Hare and his colleagues performed a set of clever experiments to learn if seeing leads to knowing. Chimpanzees can follow the gaze of another chimpanzee so they potentially can learn something about what others know by watching the direction of their gaze. Hare and his colleagues set up a situation in which a dominant and a subordinate chimpanzee competed for food. Wild chimpanzees normally compete for food, so this is a natural situation; they did not have to be trained in an unnatural context. In some instances dominant chimpanzees did not see food being hidden. If they did the food was moved elsewhere when they were not looking. Subordinate chimpanzees always saw the food being hidden or moved and could see what their dominant friends saw.

Hare and his colleagues discovered that subordinate chimpanzees were aware of what dominant animals did or did not see. Subordinates retrieved food that dominant chimpanzees had not seen hidden or moved. Hare and his colleagues also found that not only could subordinate chimpanzees keep track of what other individuals knew, but they could also keep track of *who* had seen what. When a dominant chimpanzee who had witnessed the hiding or moving of food was replaced with another chimpanzee who had not, subordinate chimpanzees knew that the naïve chimpanzee did not know where the food was and they retrieved it.

These and other experiments show that chimpanzees know what other group members have and have not seen, what they do and do not know, and that they use this information to make future decisions. Chimpanzees can take the perspective of other individuals and know that ‘Others can see things that I cannot see and vice versa.’

Many people might throw up their hands and say ‘so what’, is it not obvious that chimpanzees and other animals must know what others know so that they don’t have to waste time and discover everything on their own. Yes, but what is exciting is that these ‘naturalistic’ ecologically relevant studies support stories about wild chimpanzees. Natural history has an important place in studies of animal behavior. Similar studies on other species are needed for it is unlikely that only chimpanzees are so wise. In many cases animals are as wise as our methods of study allow them to be. We just need to be clever enough to tap into how they do things in their worlds, not ours.

The evolution of social play, social morality and cooperation: Animals as wise negotiators

There are many areas in which scientists can pursue interesting and important questions about the wisdom of animals. One such area concerns the evolution of social morality. Many people often wonder if some animals have codes of social conduct that regulate their behavior in terms of what is permissible and what is not permissible during social encounters. They want to know just what are the moral capacities of animals, are they moral agents with a moral sense who are able to live in moral communities? Charles Darwin’s (1859, 1872/1998) ideas about evolutionary continuity, that behavioral, cognitive, emotional, and moral variations among

different species are differences in *degree* rather than difference in *kind*, are often invoked in such exercises. Thus, this view argues that there are shades of gray among different animals and between non-humans and humans, that the differences are not black and white with no transition stages or inexplicable jumps.

The study of the evolution of morality, specifically cooperation and fairness, is closely linked to questions about animal wisdom and also is associated with ideas about continuity and discontinuity (the possible uniqueness of humans and other species), individuality, and freedom. (It also is important to consider relationships among science, religion, and God because spirituality and the notion of one form of God or another had strong influences on the evolution of our ancestors, their cognitive, emotional, and moral lives.)

The evolution of social morality: Behaving fairly

Evolutionary reconstructions of social behavior often depend on educated guesses (some better than others) about the past social (and other) environments in which ancestral beings lived. In the same sense that other's minds are private, so is evolution. Often it is difficult to know with a great deal of certainty very much about these variables and how they may have figured into evolutionary scenarios. It is an understatement to note that is extremely difficult to study the evolution of morality in any animal species, and the very notion of animal morality itself often makes for heated discussions. Nonetheless, it seems clear that detailed comparative analyses of social behavior in animals can indeed provide insights into the evolution of social morality. To be sure, these sorts of studies are extremely challenging, but the knowledge that is gained is essential in our efforts to learn more about the evolution of sociality and social morality and to learn more about human Nature and perhaps human uniqueness.

Here I am specifically concerned with the notion of 'behaving fairly'. By 'behaving fairly' I use as a working guide the notion that animals often have social expectations when they engage in various sorts of social encounters the violation of which constitutes being treated unfairly because of a lapse in social etiquette. I will cash this out below in my discussion of social play behavior (much of the following is from BEKOFF, 2002).

Cooperation and fairness are not by-products of aggression and selfishness

In my view, cooperation is not merely always a by-product of tempering aggressive and selfish tendencies (combating Richard Dawkins' selfish genes) and attempts at reconciliation. Rather, cooperation and fairness can evolve on their own because they are important in the formation and maintenance of social relationships. This view, in which Nature is sanitized, contrasts with those who see aggression, cheating, selfishness, and perhaps amorality as driving the evolution of sociality. The combative Hobbesian world in which individuals are constantly at one another's throats is not the natural state of affairs, Nature is not always red in tooth and claw, and altruism is not always simply selfishness disguised.

Does it feel good to be fair?

It is important to consider the possibility that it feels good to be nice to others, to cooperate with them and to treat them fairly, to forgive them for their mistakes and shortcomings. Thus, studies of the evolution of social morality also need to consider the rich cognitive ('intellectual') and deep emotional lives of other animals. Skeptical dismissals that animals are nothing but non-sentient automatons are dead-ends. While one cannot prove without doubt that some animals have rich cognitive and emotional lives, it also is impossible to prove that they do not. Perhaps we need to change our research strategies and assume that many animals are indeed able to make conscious choices and do experience emotions and then have to 'prove' that they do not, rather than assume that animals are not able to make conscious choices and experience emotions and then have to prove that they do. Erring on the side of animals is a wise choice.

Animal play: Lessons in cooperation and fairness

Telling lies requires a degree of sophistication; it entails an ability to anticipate the effects of one's action. I would be surprised if we could perceive such artificiality in any animal species. To me this indicates a certain innate disposition toward justice and honesty, beyond what we understand as religious or conventional morality. (HH the Dalai Lama, 'Understanding our fundamental nature,' p. 69)

Happiness is never better exhibited than by young animals, such as puppies, kittens, lambs, etc., when playing together, like our own children. So wrote Charles Darwin in his book 'The Descent of Man and Selection in Relation to Sex'.

Animal play is obvious, but animal social morality is not. Social play in animals is an exhilarating activity in which to engage and to observe. The rhythm, dance, and spirit of animals at play is incredibly contagious. Not only do their animal friends want to join in or find others with whom to romp, but I also want to play when I see animals chasing one another, playing hide-and-seek, and wrestling with reckless abandon. My body once tingled with delight as I watched a young elk in Rocky Mountain National Park, Colorado, running across a snow field, jumping in the air and twisting his body while in flight, stopping to catch his breath, and then jumping and twisting over and over and again. There was plenty of grassy terrain around but he chose the snow field. Buffaloes will also follow one another and playfully run onto and slide across ice, excitedly bellowing 'Gwaaa' as they do so. And, of course, we all know that dogs and cats love to play, as do many other mammals. Birds also playfully soar across the sky chasing, diving here and there, and frolicking with one another.

I think of play as being characterized by what I call the 'Five S's of Play', its Spirit, Symmetry, Synchrony, Sacredness, and Soulfulness. The Spirit of play is laid bare for all to see as animals prodigally run about, wrestle, and knock one another over. The Symmetry and Synchrony of play are reflected in the harmony of the mutual agreements to trust one another — individuals share intentions to cooperate with one another to prevent play from spilling over into fighting. This trust is Sacred. Finally, there is deepness to animal play in that the players are so immersed in play that they are the play. Play is thus a Soulful activity, perhaps the essence of individ-

ual's being at the moment as they play from deep in their hearts. As Aquinas noted, play is about being, there are no why's in play.

The unmistakable emotions associated with play — joy and happiness — drive animals into becoming at one with the activity. One way to get animals (including humans) to do something is to make it fun, and there is no doubt that animals enjoy playing. Studies of the chemistry of play support the claim that play is fun. Dopamine (and perhaps serotonin and norepinephrine) are important in the regulation of play. Rats show an increase in dopamine activity when anticipating the opportunity to play and enjoy being playfully tickled. There is also a close association between opiates and play.

How animals tell others that 'I want to play with you'

When individuals play they typically use action patterns that are also used in other contexts, such as predatory behavior, antipredatory behavior, and mating. These actions may not vary much across different contexts, or they may be hard to discriminate even for the participants. How do animals know that they are playing? How do they communicate their desires or intentions to play or to continue to play? How is the play mood maintained?

Because there is a chance that various behavior patterns that are performed during on-going social play can be misinterpreted, individuals need to tell others 'I want to play', 'this is still play no matter what I am going to do to you', or 'this is still play regardless of what I just did to you'. An agreement to play, rather than to fight, mate, or engage in predatory activities, can be negotiated in various ways. Individuals may use various behavior patterns — play markers — to initiate play or to maintain a play mood by punctuating play sequences with these actions when it is likely that a particular behavior may have been, or will be, misinterpreted (it is also possible that there are auditory, olfactory, and tactile play markers. I found that play signals in infant canids (domestic dogs, wolves, and coyotes) were used non-randomly, especially when biting accompanied by rapid side-to-side shaking of the head was performed. Biting accompanied by rapid side-to-side shaking of the head is performed during serious aggressive and predatory encounters and can easily be misinterpreted if its meaning is not modified by a play signal. There also is little evidence that play signals are used to deceive others in canids or other species. Cheaters are unlikely to be chosen as play partners because others can simply refuse to play with them and choose others. Limited data on infant coyotes show that cheaters have difficulty getting other young coyotes to play (personal observations). It is not known if individuals select play partners based on what they have observed during play by others.

Individuals also engage in role-reversing and self-handicapping to maintain social play. Each can serve to reduce asymmetries between the interacting animals and foster the reciprocity that is needed for play to occur. Self-handicapping happens when an individual performs a behavior patterns that might compromise herself. For example, a coyote might not bite her play partner as hard as she can, or she might not play as vigorously as she can.

Role-reversing occurs when a dominant animal performs an action during play that would not normally occur during real aggression. For example, a dominant animal

might voluntarily not roll-over on his back during fighting, but would do so while playing. In some instances role-reversing and self-handicapping and might occur together. For example, a dominant individual might roll over while playing with a subordinate animal and inhibit the intensity of a bite. From a functional perspective, self-handicapping and role-reversing, similar to using specific play invitation signals or altering behavioral sequences, might serve to signal an individual's intention to continue to play.

The wisdom of 'fine-tuning' play: Expressions of honesty and justice

There is a premium on playing fairly and trusting others to do so as well. *It is wise to play fairly.* There are codes of social conduct that regulate actions that are and are not permissible, and the existence of these codes likely speak to the evolution of social morality. What could be a better atmosphere in which to learn social skills than during social play, where there are few penalties for transgressions? Individuals might also generalize codes of conduct learned in playing with specific individuals to other group members and to other situations such as sharing food, defending resources, grooming, and giving care.



Canids play fairly; Copper und Scooter make sure that play remains the nature of their games. — Hunde spielen fair; Copper und Scooter stellen sicher, dass die Natur ihrer Tollereien Spiel bleibt.²

Playtime generally is safe time — transgressions and mistakes are forgiven and apologies are accepted by others especially when one player is a youngster who is not yet a competitor for social status, food, or mates. There is certain innocence in play. Individuals must cooperate with one another when they play — they must negotiate agreements to play. The highly cooperative Nature of play has evolved in many other species. Detailed studies of play in various species indicate that individuals trust others to maintain the rules of the game. While there have been nu-

² Photo: <<http://www.duke.edu/~avolk/Photos/us/pup-and-scoot.jpg>>

merous discussions of cooperative behavior in animals, none has considered social play — the requirement for cooperation and reciprocity — and its possible role in the evolution of social morality, namely behaving fairly.

Individuals of different species seem to fine-tune on-going play sequences to maintain a play mood and to prevent play from escalating into real aggression. Detailed analyses of film show that in canids there are subtle and fleeting movements and rapid exchanges of eye contact that suggest that players are exchanging information on the run, from moment-to-moment, to make certain everything is all right — that this is still play.

I am not arguing that there is a gene for fair or moral behaviour. As with any behavioural trait, the underlying genetics is bound to be complex, and environmental influences may be large. No matter. Provided there is variation in levels of morality between individuals, and provided virtue is rewarded by a greater number of offspring, then any genes associated with good behaviour are likely to accumulate in subsequent generations. And the observation that play is rarely unfair or uncooperative is surely an indication that natural selection acts to weed out those who do not play by the rules.

All in all, my data indicate that canids play fairly — that they display wisdom by making sure that play remains the nature of their games.

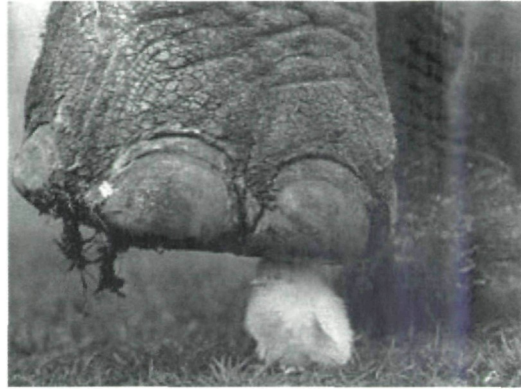
Animal emotions: Exploring passionate natures as a path to Nature's wisdom

It is hard to watch elephants' remarkable behavior during a family or bond group greeting ceremony, the birth of a new family member, a playful interaction, the mating of a relative, the rescue of a family member, or the arrival of a musth male, and not imagine that they feel very strong emotions which could be best described by words such as joy, happiness, love, feelings of friendship, exuberance, amusement, pleasure, compassion, relief, and respect. (Joyce POOLE, 1998, pp. 90-91)

It is remarkable how often the sounds that birds make suggest the emotions that we might feel in similar circumstances: soft notes like lullabies while calmly warming their eggs or nestlings; mournful cries while helplessly watching an intruder at their nests; harsh or grating sounds while threatening or attacking an enemy ... Birds so frequently respond to events in tones such as we might use that we suspect their emotions are similar to our own. (Alexander SKUTCH 1996, pp. 41-42)

Coming to understand and appreciate animal emotions is truly a path to learning about Nature's wisdom. In this section I will consider joy, grief, and love, however there are many other emotions that could be discussed including anger, embarrassment, jealousy, and fear. Michael Tobias, a film-maker, author, and ecologist, once found himself swimming with gigantic whale sharks and was taken by their gigantic heart, gentleness, and nonviolent Nature. Their gentleness was so contagious that Tobias was 'completely severed from time' and 'unsnarled from all connections'. He had become one with Nacho, the name given to a whale shark by a local doctor. The unfiltered emotions that exuded from Nacho were a strong glue for connecting Tobias with his new found friend, for developing a trust and fellowship of mutual admiration. One reason that many animals are able to form close and reciprocal social bonds with one another (and with humans) is because of shared emotions.

When Shirley met Jenny: Long lost friends



Elephants have strong feelings. They experience joy, grief and depression and mourn the loss of their friends. — Elefanten haben starke Gefühle. Sie empfinden Freude und Trauer und beweinen den Verlust ihrer Freunde.³

Elephants have strong feelings. They experience joy, grief and depression, and mourn the loss of their friends. Elephants live in matriarchal societies in which strong social bonds among individuals endure for decades. They also have great memory. Shirley and Jenny, two female elephants who were unintentionally reunited after living apart for 22 years, showed that they truly had missed one another when they were separated. At different times, each was brought to the Elephant Sanctuary in Hohenwald, Tennessee, founded and run by Carol Buckley, so that they could live out their lives in peace, absent the abuse they had suffered in the entertainment industry. Upon their initial meeting, when Shirley was introduced to Jenny, there was urgency in Jenny's behavior. She wanted to get into the same stall with Shirley. Loud roars emanated from deep in each elephant's heart as if they were old friends. Rather than being cautious and uncertain about one another they touched one another through the bars separating them, and remained in close contact. Their keepers were intrigued by how outgoing each was. A search of records showed that Shirley and Jenny had lived together 22 years before in the same circus when Jenny was eight years old and Shirley was thirty. They still remembered one another, as individuals, when they were inadvertently reunited.

Grief

Never shall I forget watching as, three days after Flo's death, Flint climbed slowly into a tall tree near the stream. He walked along one of the branches, then stopped and stood motionless, staring down at an empty nest. After about two minutes he turned away and, with the movements of an

³ Photos: <www.tickle-and-the-ivories.com/training.htm>

old man, climbed down, walked a few steps, then lay, wide eyes staring ahead. The nest was one which he and Flo had shared a short while before Flo died ... in the presence of his big brother [Figan], [Flint] had seemed to shake off a little of his depression. But then he suddenly left the group and raced back to the place where Flo had died and there sank into ever deeper depression ... Flint became increasingly lethargic, refused food and, with his immune system thus weakened, fell sick. The last time I saw him alive, he was hollow-eyed, gaunt and utterly depressed, huddled in the vegetation close to where Flo had died ... the last short journey he made, pausing to rest every few feet, was to the very place where Flo's body had lain. There he stayed for several hours, sometimes staring and staring into the water. He struggled on a little further, then curled up — and never moved again. (Jane GOODALL 1990, pp. 196-197)

Many animals display grief at the loss or absence of a close friend or loved one. One vivid description of the expression of grief is offered above. The Nobel laureate Konrad Lorenz observed grief in geese that was similar to grief in young children. He provided the following account of goose grief: *A greylag goose that has lost its partner shows all the symptoms that John Bowlby has described in young human children in his famous book Infant Grief ... the eyes sink deep into their sockets, and the individual has an overall drooping experience, literally letting the head hang ...* (Konrad LORENZ, 1991, p. 251) Other examples of grief are offered in my book *The smile of a dolphin*. Sea lion mothers, watching their babies being eaten by killer whales, squeal eerily and wail pitifully, in anguish of their loss. Dolphins also have been observed struggling to save a dead infant. Elephants have been observed to stand guard over a stillborn baby for days with their head and ears hung down, quiet and moving slowly as if they are depressed. Orphan elephants who saw their mothers being killed often wake up screaming. Joyce Pool claims that grief and depression in orphan elephants is a real phenomenon. It has also been noted of traumatized orphaned gorillas: 'The light in their eyes simply goes out, and they die.' Comparative research in neurobiology, endocrinology, and behavior is needed to learn more about the subjective nature of animal grief.

Romantic love

Courtship and mating are two activities in which numerous animals regularly engage. Many animals seem to fall in love with one another just as do humans. Recall that Heinrich is of the opinion that even ravens fall in love. In many species, romantic love slowly develops between potential mates. It is as if one or both need to prove their worth to the other before they consummate their relationship. Bernd WÜRSIG (2000) has described courtship in southern right whales off Peninsula Valdís, Argentina. While courting, Aphro (female) and Butch (male) continuously touched flippers, began a slow caressing motion with them, rolled towards each other, briefly locked both sets of flippers as in a hug, and then rolled back up, lying side-by-side. They then swam off, side-by-side, touching, surfacing and diving in unison. Würsig followed Butch and Aphro for about an hour, during which they continued their tight travel. Würsig believes that Aphro and Butch became powerfully attracted to each other, and had at least a feeling of 'after-glow' as they swam off. He asks, could this not be leviathan love?

Many things have passed for love in humans yet we do not deny its existence nor are we hesitant to say that humans are capable of falling in love. It is unlikely that romantic love (or any emotion) first appeared in humans with no evolutionary precursors in animals. Indeed, there are common brain systems and homologous chemicals underlying love (and other emotions) that are shared among humans and animals. The presence of these neural pathways suggests if humans can feel romantic love, then at least some other animals also experience this emotion.

The power and wisdom of eyes

Animals communicate using a number of different sensory modalities either singly or in combination with one another. We see their visual displays, we hear their melodious and not-so-melodious vocalizations, and we smell the odors which they selflessly share with us, often to our extreme disliking. But it is their eyes (if they have them) that frequently tell us how they feel about a particular situation and it is their eyes that pierce our spirits and souls when they experience extreme and unbounded joy and profound and deep grief, pain, and suffering. And, it is through their eyes that we feel their hearts and 'see' the workings of their brains and sense their unfettered joy and the deepest of deep despair. It is through their eyes that we feel their deep wisdom.

My good friend and colleague, Jane Goodall, tells a compelling story about the power of eyes, of the gaze of those who depend on us for their own well-being (GOODALL 1999). It is about a chimpanzee called JoJo who was born in Africa. When he was about two years old his mother was shot and JoJo was taken from her and shipped to America. For many years he lived alone in a small, barren cage. Eventually money was raised to build a large enclosure, surrounded by a moat (since chimpanzees cannot swim). Nineteen other chimpanzees were purchased, introduced to each other, and then released into the enclosure.

One day, one of the other males challenged JoJo and he ran into the water. He managed to scramble over the fence intended to stop the chimps from drowning in the deep water beyond. Three times JoJo surfaced, gasping for air. Then he was gone. On the other side of the moat was a small group of people. A keeper ran to get a long pole. Luckily for JoJo, a zoo visitor named Rick Swope was there with his family. He takes them to the zoo one day each year. Rick jumped in the water. He swam until he touched JoJo's inactive body. Heaving the dead weight over his shoulder he scrambled over the fence, pushed JoJo on to the shore of the exhibit, and started walking back towards his family. Suddenly the human onlookers began screaming at Rick to hurry up. From their position above them they could see three big males, hair bristling, moving towards the scene. At the same time JoJo was sliding back into the water once again because the bank was too steep. A woman was able to capture the scene on video. On the video we see Rick standing by the fence. He looks up towards JoJo who is just vanishing into the water again. For a moment, Rick, is motionless. Then he goes back, pushes JoJo up onto the land once again, and waits there, ignoring his frantic family, until JoJo manages to seize a clump of grass and pull himself away from the water. And just in time, Rick got back over the fence.

The evening that this all happened, the video was shown on many North American television channels. The director of the Jane Goodall Institute saw it and he called Rick. ‘That was a very brave thing you did. What made you do it?’ ‘Well you see,’ replied Rick, ‘I happened to look into his eyes, and it was like looking into the eyes of a man. And the message was ‘Will not anybody help me?’

We must never avert our eyes or our other senses from the eyes and voices of all other beings, our kin, our friends, who urgently beg for and truly need our immediate, uncompromising, and unconditional aid and love. We must tap into the deep and rich expressions of their wisdom; we must tap into their wise ways.

The importance of community and unwavering optimism, hope, and boundless love

I am a hopeful person and a dreamer, and while I do think that we need to make better decisions about how we interact with Nature than we have in the past and that things are getting better, I do not think that time is on our side. There is much to do and not all that much time in which to accomplish what needs to be done. Thus, I argue that we must all recognize that no one let me emphasize no one is exempt from the wanton — intentional or unintentional — destruction of Nature's wisdom and spirit *and hence our own* no matter how rich one is and no matter how removed one can become from Nature. We are a single community of Earth and I hope that one day we will all feel in our hearts that we are enveloped in a warm tapestry of oneness, a blanket in which respect, compassion, humility, grace, happiness, and love abound. We receive what we give so there is no fear that we will ever deplete the source of these attitudes and virtues. I truly believe this, for if I did not, then life would lose so much of its meaning. And I that by studying other animals and appreciating them for *who* they are, we will come to terms with much of Nature's wisdom and perhaps much of our own.

I feel at one when I study animals and when they are in my presence. My vision is to create a community in which humans perceive themselves as a part of Nature and not apart from her, in which humans who are overwhelmed and whose spirits and souls have been robbed and squelched by living in and amongst steel, concrete, asphalt, noise, and a multitude of invasions of their private space reconnect with raw Nature - with the wind in their faces, the odors of wild flowers, and the sounds, sights, odors, and touch of other animals and inanimate environs. *A world in which sensing is feeling.* Nature is our unconditional friend and reconnecting with Nature can help overcome alienation and loneliness. Holistic and heart-driven compassionate science that is infused with love needs to replace reductionist and impersonal science.

My own spirituality is based on a deep drive for a seamless unity — wholeness, holism, oneness — motivated by compassion, respect, and love. During my brief tenure on earth as a visitor to this wondrous planet, I am more than happy to open the door of my heart to all beings. I am a dreamer and dream deeply of and envision a unified peaceable kingdom — a peaceful kinship — based on respect, compassion, forgiveness, kindness, generosity, and love. There is a deep need for deep ‘relationship’.

Moving towards a soul-scape. I am a hard-core optimist, victimized by hope. I ache with the pains of other beings and also feel pangs when I sense inanimate land-

scapes being destroyed. I prefer to imagine that we all live in a soul-scape bounded by, and immersed in, mutual compassion, respect, and love. This is how I maintain unflagging hope. I remain hopeful that we can make this a better world for ourselves, our children, and theirs, because we are a very special species, but not *better* than other species. Indeed, we are a rather petite in the large universe in which we live, petite but powerful, and we need to proceed with humility. We need to tread lightly, watching each and every step that we take.

It is essential to maintain hope even when things seem grim. Rather than take a doomsday view that the world won't exist in 100 years if we fail to accept our unique responsibilities it is more disturbing to imagine a world in which humans and other life coexist in the absence of any intimacy and interconnectedness. Surely we do not want to be remembered as the generation that killed Nature. Now is the time for everyone to work for peace with other humans, other animals, and with all of Nature — for universal planetary peace.

We can indeed love animals more and not love people less. We need to be motivated by love and not by fear of what it will mean if we come to love animals for who they are. Animals are not less than human. *They are who they are and need to be understood in their own worlds.* The study of animal behavior will help us immensely.

If we forget that humans and other animals are all part of the same interdependent world — the more-than-human world (ABRAM 1996) — and if we forget that humans and animals are deeply connected at many levels of interaction, when things go amiss in our interactions with animals, as they surely will, and animals are set apart from and inevitably below humans, I feel certain that we will miss the animals more than the animal survivors will miss us. The interconnectivity and spirit of the world will be lost forever and these losses will make for much loneliness in a severely impoverished universe.

In the end, in my humble opinion, it boils down to love. We need to be motivated by love, and not by fear of what it will mean if we come to love animals and Earth for who they are. The power of love must not be underestimated as we try to reconnect with Nature and other animals. We must love the universe and all of its inhabitants - animate and inanimate.

Reductionism, holism, and heart: Towards a compassionate science

In reality there is a single integral community of the Earth ... In this community every being has its own role to fulfill, its own dignity, its inner spontaneity. Every being has its own voice ... We have no rights to disturb the basic functioning of the biosystems of the planet. We cannot own the Earth or any part of the Earth in any absolute manner. (Thomas BERRY, *The Great Work*, pp. 4-5)

There seems to be no doubt that reductionist science misrepresents the world, the world of people, the world of animals — the entire deeply interconnected community of Earth. This has serious consequences for the quality of knowledge we gather and for how we interact in and with Nature. Reductionism promotes alienation, isolation, and disconnection. It forces a separation between the seer and the seen — a false dualism. Science often impedes our truly sensing, feeling, and understanding the scope of the amazing world within which we live. We live as if we

know with great certainty how whole systems work but our knowledge is far from infallible.

Reductionism can also easily lead us away from viewing animals' worlds as they view their own worlds and lead to rampant and destructive anthropocentrism. Reductionism reinforces alienation, isolation, and disconnecting. Science can indeed make Nature less majestic and less magical and appear less wise. But let us not let it continue to do so.



*Trees and rocks need love and compassion too. 1,000 year old oak-tree in Bierbaum, Styria/Austria. — Auch Bäume und Steine brauchen Liebe und Mitgefühl. 1.000-jährige Eiche in Bierbaum, Steiermark/Österreich.*⁴

Holistic and more heart-driven science is needed, science that is infused with spirit, compassion, and love. Closet holists need to emerge and offer their heretical views. Holistic heart-felt science reinforces a sense of togetherness and relationship, family and community, and awe. It fosters the development of deep and reciprocal friendships among humans, animals, and other Nature. It helps us resonate with Nature's radiance and lessens our tendency to think, egocentrically, that we are at the center of everything. Thomas BERRY (1999) also stresses we should strive for a 'benign presence' in Nature. Native Americans are proud to claim that 'animals are all our relations'. Animals and inanimate landscapes need to speak for themselves. And we must listen to their messages very carefully. Trees and rocks need love too.

We need science with a heart — a compassionate science. A science that includes who we are as the human practitioners of the business of science, similar to what Buddhists call 'dependent arising' (HARRINGTON 2002, pp. 27-28). Solid science *can*

⁴ Photo: Archiv Naturschutzbund Steiermark

be driven by one's heartstrings — solid science can be done even if one goes to the beat of a different drummer. Saturating science with spirit and compassion will help bring science, Nature, and society together into a unified whole. Questioning science will help insure that we will not repeat past mistakes, that we will move towards a world in which humans and other animals share peaceably the beneficence of Nature. Magnificent Nature — the cacophony of her deep and rich sensuality — will be respected, cherished, and loved.

When all is said and done, and usually more is said than done, I love to imagine that all nonhuman and human beings will come to live in a soul-scape bounded by, and immersed in, mutual compassion, respect, and love. This is how I maintain unflagging hope. I remain hopeful that we can make this a better world for ourselves, our children, and theirs, because we *are* a very special species, but not *better* than other species. We need to walk lightly, watching each and every step that we take. This is one way in which we will be able to travel the path of Nature's wisdom that she so selflessly shares, that she generously provides.

A hierarchy of compassion and individual responsibility

Compassion — surely that is what the earth seeks most in us. (Calvin Luther MARTIN, 1992)

Compassion and hope are two essential ingredients for making this a better planet for all life. Alan SPONBERG presents a useful model of compassion in his 'hierarchy of compassion'. In his hierarchy ... *vertical progress is a matter of 'reaching out', active and consciously, to affirm an ever-widening circle of expressed interrelatedness ... progress along this spiral path confers no increasing privilege over those who are below on the path. Quite the contrary, it entails an ever increasing sense of responsibility ... for an ever greater circle of relatedness ... expressed by the Buddhist term karuna - compassion or 'wisdom in action'.* (pages 366-367). Sponberg's views on compassion are compelling for they accentuate how we humans need to come to terms with who we are in a hierarchy of compassion. Sponberg also stresses that higher does not mean 'better', but rather more responsible.

Visualizing compassion: Minding animals, Minding Earth

If we listen to the spirit of Nature we can elevate our existence on this planet to companion, steward, and 'lover'. As we learn about other animals and how important they really are to us we will learn more about ourselves. This knowledge and the intense feelings they bring forth, will help make us nicer to one another and nicer to the planet as whole. We need to do this now and be proactive, for while I am not a pessimist, as I wrote above, I do think that we have limited time. *Time is not on our side mainly because our big-brains make us so very powerful and ubiquitous.*

On our journeys with other animals we will discover that we can indeed love animals more - we can love them as much as we dare — and not love people less. It is not a matter of trading off one against the other because each and every individual counts! Animals are not less than human. *They are who they are and need to be understood in their own worlds.* How we sense and feel the presence of essence of other animals greatly influences how we interact with them. How we sense and feel the presence

and essence of other animals will directly influence how we come to understand, appreciate, and protect their wisdom.

We must move forward with grace, kindness, generosity, humility, respect, compassion and love. Nothing will be lost and much will be gained. Surely, we will come to feel better about ourselves if we know deep in our hearts that we did the best we could and took into account the well-being of the magnificent animals with whom we share Earth, the awesome beings who selflessly make our lives richer, more challenging, and more enjoyable than they would be in the animals' absence. By 'minding animals' we mind ourselves. By 'minding Earth' we mind ourselves and all the entire integrated community of Earth. We owe it to ourselves and to other animals to whom we can, unfortunately, do whatever we choose. We really are that powerful, and with that might are inextricably tied awesome responsibilities to be ethical human beings.

I truly feel that the amount of love on Earth is increasing — slowly. We need to follow the heat of our hearts and live love. The continued disrespect, abuse, and relegation of animals to being hapless and innocent victims of human greed and arrogance will make for much loneliness and a severely impoverished universe. The continued disrespect, abuse, and relegation of animals to being hapless and innocent victims of human greed and arrogance will make for an impoverished world that is significantly poorer in its wisdom.

Let us make a pact to do no intentional harm, to treat all individuals with compassion, and to step lightly into the lives of other beings, bodies of water, air, and landscapes. It will be difficult and challenging and also frustrating to achieve win-win solutions all of the time, but if we set any lower goal we can be sure that we will not be able to accomplish win-win agreements. Moral progress requires moral choices. Let us expand our relatively closed human clubhouse to incorporate all of Earth.

The wisdom of giving and receiving: Emergence and oneness

What is the good life? The good life is to be a good neighbor, to consider your neighbor as yourself. (K. VISHWANATHAN, cited in Suzuki and Dressel, 2002, p. 325)

In the grand scheme of things, individuals receive what they give. If love is poured out in abundance then it will be returned in abundance. There is no need to fear depleting the potent and self-reinforcing feeling of love that continuously can serve as a powerful stimulant for generating compassion, respect, and more love for all life. Each and every individual plays an essential role and that individual's spirit and love are intertwined with the spirit and love of others. These emergent interrelationships, that transcend individuals embodied selves, foster a sense of oneness. These interrelationships can work in harmony to make this a better and more compassionate world for all beings. We must stroll with our kin and not leave them in our tumultuous wake of rampant, self-serving destruction.

As we come to understand and appreciate Nature's wisdom we will move to protect her. And science as we know it simply cannot do it alone, in a self-congratulatory vacuum. The philosopher Mary Midgley has recently argued that science and poetry can be compatible bedfellows, that subjectivity is not scandalous, that holism is the wave of the future, and that there is unity to our lives. She

notes ‘... we can resist the academic fashions that now fragment us.’ Not only that we *can* resist them but that we *must* for better science and for better tomorrows. Anthropocentrism needs to be replaced with more heartfelt biocentrism and egalitarianism. By crossing traditional disciplinary/academic barriers, much wisdom will emerge.

As I write I am at once smiling and feeling twinges of sadness, for I have touched on so many topics and much more work needs to be done. It is unsettling that nearly one-half of our splendid planet has been transformed so that there are ‘dead zones’, areas where there is little or no oxygen in coastal waters. It is unsettling that so many animals are harmed and killed by humans. Perhaps the biggest and most difficult question of all is whether enough of us will choose to make the heartfelt commitment to making this a better world, a more compassionate world in which love is plentiful and shared, before it is too late. I believe we have already embarked on this pilgrimage. My optimism leads me in no other direction.

I ask the people with whom I interact to imagine that they carry a suitcase of courage, compassion, and hope and that because they receive what they give, the supply of courage, compassion, hope, and love will never be exhausted. It is easy to have one's spirit and soul weathered by the ‘bad’ things that happen around us. It seems as if we are addicted to destroy the very animals and landscapes we love. But many many good things are happening each and every day all over the world that can kindle our spirit and impel us to act.

We must also acknowledge that the voice and the actions of *every* individual also make a difference. For they do. Martin Luther King, Jr. once said: ‘A time comes when silence is betrayal.’ He was right — silence and indifference can be deadly for our animal friends and for Earth.

Science, Nature, kinship, and heart: Giving thanks to wise Nature

Thank you for joining me on my unpredictable and twisting journey. But, *my* journey is actually *our* journey. My transitions and transformations have been many and deep. There have been many beginnings and plenty of false starts. Only a few of my goals have been achieved. This is good for there is so much exciting, challenging, and enjoyable ‘work’ to be done. If I make a difference in how humans and animals interact, even a small difference, then my brief residence on this most amazing planet will have been well-worth it.

I hope that I have convinced you that ethological studies are essential for learning more about Nature's wisdom. And I hope that I also have convinced you that science, Nature, kinship, and heart can co-exist as we travel the path to Nature's wisdom. Thank you, wise Nature, for allowing me to enjoy your presence, your magic, and your gifts. Thank you, Nature for sharing your wisdom. With her infinite boundless wisdom Nature is a wonderful teacher and also a magical and often mysterious healer. Let us heed her many lessons.

We need more compassionate and respectful contact with all of Nature. We need wise Nature and we need wise animals. We need them greatly, more than perhaps many people realize. Let us not lose them and only then discover what they truly mean to us because of who they are. Let us not lose them and only then discover

what they truly mean to us because their absence robs us of our own identity, of our own place on and in Earth, and of our own wisdom.

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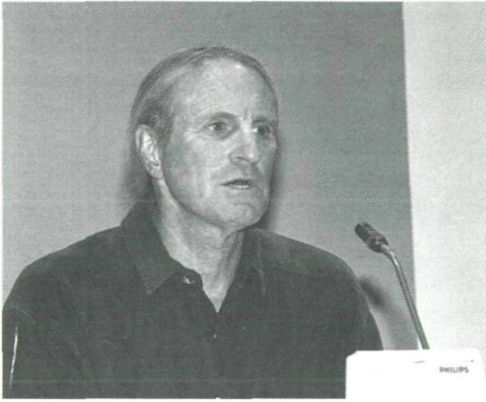
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