

Tomorrow's Earth Stewards

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Welcome to the 2020 edition

of Tomorrow's Earth Stewards – where we provide resources which support those helping children and youth develop as stewards of planet Earth. These supports collectively define the way we frame our mission – as one promoting a developmental, eco-restoration, and international perspective on earth stewardship. And overarching these three is our commitment to fostering in children and youth a powerful 21st century identity of themselves as civically engaged citizens of the world.

-W. George Scarlett, Editor

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From Pets to Pathways for Becoming Earth Stewards

By Megan Mueller | Illustration by Ellen Dubreuil



What is it about our relationships with pets that make them so enduring, and how do they connect us to the wider, natural world – making it more likely that we will act as earth stewards? For many, experiences with pets are experiences akin to some of the most positive and important experiences as humans – particularly experiences of caring for and being cared for by another. Research by many scholars who study human-animal relationships, including our own research at the Cummings School of Veterinary Medicine at Tufts University, has shown that children closely attached to pets also

demonstrate compassion and caring for all animals — as well as intolerance for cruelty to animals. In short, it is this potential for pets to elicit in us feelings of attachment, empathy, and care that make pets so relevant for helping children to connect to and care for the wider, animal world.

Furthermore, just as secure attachments to parents foster exploration of the wider world, so too can secure attachments to pets foster curiosity and wonder about the marvelous diversity that is the animal world — the virtually infinite diversity in color, shape, size, behaviors, and living environments – curiosity and wonder experienced in the presence of the largeness

of elephants and the smallness of lady bugs – and manifest in children’s questions:” Why don’t tigers live in houses? What do ostriches eat? How can a whale hold its breath for so long?” – the list of questions is never ending. As these questions tell us, it is because animals are both similar to and different from humans that they provide children with ways to expand how they see themselves in the world – so that some day they might come to see themselves as human animals participating in a much larger world than they ever imagined back when they played in the backyard with a family pet.

But how can positive experiences with pets and animals foster possibilities for becoming an earth steward? To have good feelings and curiosity is, after all, not the same as acting to be an earth steward. Positive experiences with pets and other animals do so because they get children ready to care for the habitats and complex systems that sustain animals and that, in fact, sustain us all. The pathway from pets to informed environmental activist may be long and circuitous, but it is a pathway nonetheless, one that is there for countless numbers of children and teens, if only they are encouraged to follow it.

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Beyond Wonder and Care – Becoming a Green Thinker

By Tina Grotzer | Image: Arturo de Frias Marques / CC BY-SA



“What is the value of preserving and strengthening this sense of awe and wonder, this recognition of something beyond the boundaries of human existence? Is the exploration of the natural world just a pleasant way to pass the golden hours of childhood or is there something deeper?”

-Rachel Carson, A Sense of Wonder

I grew up in a rural environment with woods and streams all around me. Others would say that we were poor, but I never felt impoverished. I climbed trees, explored the pond, got stuck in the mud, and jumped onto the gnarled, moss-covered roots in the middle of the creek to read a book. In those innocent days of green, and compelled by a sense of awe and wonder, I acquired the inclination to love and appreciate nature—to deeply care about it.

Later, as a teenager working at a nature camp for young children, I encouraged their inclination to care about nature but came to realize that caring about nature meant caring for it, and that required helping children to develop sensitivity to occasions

when people could exercise that care. During our visits to a pristine woodland pond, the children could easily grasp the fragility of the micro-environment that they were observing. But they needed lots of help grasping the fragility in their everyday surroundings, such as the local birds which were decimated by neighborhood cats, the frogs which gathered in a parking lot where a vernal pool once existed, and the pine trees along the highways that were yellowing from

atmospheric degradation.

These formative experiences led to the pursuit of a life-long set of questions that I have addressed in both my teaching and research. They are the following: “How do we take responsibility for the wonder and beauty of our planet and its inhabitants?”, “What enables us to make informed and morally thoughtful decisions in carrying out our responsibility?”, “How do we encourage environmentally ethical choices?”, and “What exactly are we hoping to help the next generation learn?” In addressing these questions, I have come to imagine children’s development as happening within a ring of concentric circles — of family, extended family, and local community —which, together, make possible a broadening out towards global citizenship.

Each circle holds connections and relationships that children learn to develop and navigate. Furthermore, children learn that they can apply what they learn at the level of one circle to the

level of the next circle. For example, at the family and extended family levels, they may learn about sharing, not being wasteful, and being considerate of others, and then use what they have learned by doing the same at a local community level. In doing so, children's developing patterns of engagement in their smaller circles come to support how they engage, as citizens, in broader circles of community.

Therefore, thinking in terms of concentric circles can help us better understand how the supports at home for ethical environmental behavior provide a foundation for global ethical environmental behaviors later.

This thinking in terms of circles of ethical environmental behaviors paints a promising picture. But what happens as the circles get wider – as it does when faced with issues of environmental justice? Environmental justice is one of the defining issues of our time, and so, understanding environmental connections in our world is crucial to acting to show care. Without understanding those connections, we don't connect our using plastic bags to sea creatures dying or our using fossil fuels to the plight of polar bears in the Arctic. Furthermore, when nature speaks, without making the connections, we cannot always hear. Why is this so? Why is it that achieving a global community of environmentalists who make the larger connections is much more complicated than we think it should be? The answer, it seems, has less to do with wonder, awe, and caring for the natural world and more to do with the inadequate ways we think about the natural world and what keeps our planet healthy. Let me explain.

My colleagues, Shari Tishman and David Perkins, have argued that effective thinking in general requires sensitivity, ability, and inclination.



Image courtesy of the author

One must be sensitive to opportunities to engage, have the ability (reasoning strategies and information) to do so, and the inclination to follow through. Sensitivity, ability, and inclination are, then, essential to becoming an effective environmental steward.

These three features of a dispositional approach to thinking account for the times when we fail to act when we should act – because we lack sensitivity to when the occasion calls for action, lack the ability to think in ways needed to understand, or do not follow through on what we perceive and understand.

Cognitive and neuroscience research suggests that human cognitive architecture is not particularly well adapted for perceiving, attending to, and reasoning about complexity. This creates significant challenges in developing the sensitivity, ability, and inclination of an earth steward. For instance, we tend towards efficiency in making causal connections, so we don't typically trace out extended, domino-like results of our actions – as when we save when choosing the cheaper version of an appliance without realizing that it might later on incur more waste than the more expensive version – as it breaks down and needs replacement. Furthermore, we prioritize obvious causes and effect, so we attend to pollution that blocks the sun and that we can see in the sky but not to the invisible carbon pollution that is there even on clear, sunny days. And our conceptions of intentionality and agency downplay outcomes that are

non-intentional or that spread across many actors such that we don't feel responsible. In a similar vein, we prioritize allocating resources to combatting terrorism instead of prioritizing climate action.

As our concentric circles broaden, the challenges shift and change. The impacts of our actions become less apparent to us because they play out on a much bigger and longer scale. This makes our accountability harder to discern. Going back to a previous example, we likely would care about polar bears dying if we knew about them, kept them in our minds, and remained sensitive to the moments when our actions impact polar bears. But polar bears being far away in the North means we don't keep them in our minds. In a similar way, the connection to non-local groceries that become meals on our plates and our driving to the store – their adding CO₂ to the atmosphere — is beyond the attentional frames of most of us, and so we don't see how they connect to climate change. Furthermore, often the impacts of our actions are a result of distributed, collective actions. The emergent outcomes are not directly traceable to our own individual actions, but rather to the synergistic effects of collective actions so we fail to see them.

These broadened circles of interaction challenge the very ways that we conceptualize cause and effect and our agency in the world. They impact our sensitivity (or lack of sensitivity) to opportunities when we need to reason about our behaviors in

order to act in environmentally responsible ways. This challenges our ability to reason in ways that



Image courtesy of the author

have impact. Without a developed way of conceptualizing cause and effect and our agency in the world, there can be no trigger to motivate us to act and no effective path for us to navigate.

So how do we get beyond good intentions and a simple focus on

just cultivating wonder and care? Here are some steps one can take based upon understanding the challenges outlined above:

1. Realize the importance of teaching for sensitivity, ability, and inclination. I recall a day when my twins were ten. I had come home and was turning off lights, closing doors, and lowering thermostats. As I passed by, they called out, “Mom, play this computer game with us. We get points each time we do something good for the environment.” “But I am already playing,” I said as I turned off another light, I added, “for real!”. Their puzzled faces shifted, as they got it, and then we talked about how the game would be better if it encouraged kids to play “for real” by actually doing something good for the environment.

2. Help the next generation develop a vocabulary for handling complex causal concepts.¹ Our language can help children and youth grasp complex interactions, but only by inviting them to adopt language to address non-linear structures that are cyclic, extended domino-like, or escalating. We can help them acquire such language by applying it to students' own lived experiences, such as when

¹ See Grotzer, T.A. (2012). *Learning Causality in a Complex World: Understandings of Consequence*. Lanham, MD: Rowman Littlefield.

a meme goes viral on-line and causes a kind of “domino effect”, or when a rumor spreads and triggers myriad untruths that are beyond the control of those who started the rumor. These everyday experiences of young people can be used as meaningful analogies for understanding complex environmental events and problems.

3. *Use curriculum resources that offer children the opportunity to engage in problem-finding and problem-solving as they learn environmental science.* Increasingly, inquiry-based and Problem-Based Learning (PBL) curricula are available to help learners investigate environmental issues. These curricula can provide great ways to foster ability and inclination to address and solve environmental problems. And instead of giving them a problem and telling them to solve it, curriculum resources can invite learners to engage in problem-finding so that they develop sensitivity to detecting environmental issues. The EcoMUVE and EcoXPT curricula for middle schoolers, developed by the EcoLEARN team at the Harvard Graduate School of Education, provide two examples of curricula designed to engage students in problem-finding.²

4. *Help learners to be metacognitive about their human cognitive tendencies and help them employ strategies to address those tendencies.* While students, on their own, find it hard to change their everyday habits of thinking, on occasion, they can be helped to step back, reflect, and make purposeful choices to change their thinking so as to better understand the natural environment and what needs to happen to improve care for the natural environment.

These four steps can help support generations of earth stewards. They tell us that though it is important to teach the young to love nature, it

is equally important that we empower them to engage in environmental reasoning using the background knowledge to support deep thinking, all the while being sensitive to those opportunities, both large and small, when their choices can make a difference.

I dedicate this article to James J. McCarthy (1944-2019), Professor of Biological Oceanography at Harvard University, former President of the American Association for the Advancement of Science (AAAS), Co-chair of the International Panel on Climate Change (IPCC) Working Group II. I feel fortunate to have witnessed his intelligence, tireless dedication, and his deep and abiding love for nature, and particularly the twinkle in his eye when he spoke of it.

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² See the EcoLEARN Projects for an example, available at: <https://ecolearn.gse.harvard.edu/> This work was supported by the National Science Foundation (NSF), Grant No DRK12 1416781 and the Institute of Education Sciences (IES), U.S. Department of Education, Grant No. R305A080514. All opinions, findings, conclusions or recommendations expressed here are those of the authors and do not necessarily reflect the views of the NSF or IES.

How Helping Children Connect to Nature Can Soften the Impact of the Coronavirus Crisis

By Ashley Lin | Image: Sara Monson, Walking Mountains Science Center.



If we subscribe to the philosophy that life is always working out for us, that there is an intelligence far greater than humans at work...

That all is interconnected.

What if... the virus is here to help us?

To reset. To remember.

What is truly important.

~ A principal in Port Jefferson, N.Y.

What can we do when the world is turned upside-down? How do we help young people grapple with the uncertainty, stress, and anxiety that is a constant in life but heightened during a pandemic? How can we come out triumphant, even a bit

stronger?

There is no doubt that COVID-19 has upended the global psyche. Around the world, people are trying to adjust to new ways of living. Between figuring out how to get preschoolers and elementary schoolers to attend online classes, scrounging for toilet paper at Walmart, and disinfecting every surface in the house three times a day, it's easy to get caught up in the maelstrom caused by the COVID-19 crisis.

Young people in particular are sensitive to dramatic life changes and loss of connection from social distancing. Their schools have been moved online, and everything they may have looked forward to — from Earth Day activities, to field trips, to graduation ceremonies (the list may be long) — now don't exist or exist in radically different forms. Most importantly, their bonds with others and their sense of place sustained through in-person interactions now feel like they are eroding or disappearing altogether. Therefore, in these trying times, it is more important than ever to help young people feel connected and feel there is something constant and positive despite all the changes. That something can be nature.

There are good reasons for turning to nature during times such as these. A growing body of scientific evidence points to the positive effects that time spent in nature can have on sustaining health, easing anxiety, and promoting healing. It's no coincidence, then, that "getting some fresh air" is the most commonly cited solution to a long day.

In short, nature heals. This is clear for all those focused on building resilience among children and youth — helping the next generation adapt to and address problems caused by the climate change crisis and now caused by the COVID-19 crisis.

While COVID-19 isn't the same as climate change, both crises force people to pause, recognize their dependence on and interconnectedness with nature, and send us back into nature. In fact, COVID-19 may have an even greater ability to unite people with nature; whereas climate change happens in different time scales around the world, the coronavirus impacts people everywhere and at the same time. It provides a silver lining the principal from Port Jefferson reminds us of, that the virus possibly makes us do and feel what is most important: realize our interconnectedness and reconnect not only with nature, but also with the entire global community.

And so, there is no better time than right now to get kids out into nature. At a time when the world seems turned upside-down and a time when we need to keep physical distance between ourselves and other humans, that's when nature is most needed because no one needs to distance themselves from nature. Quite the contrary. The question then becomes, how do we get children and youth out into and connected with nature?

Right now, most young people are currently sequestered at home while practicing social distancing. School recess, field trips, and guided outdoor activities are no longer scheduled into the day. As children's classes go online, it's easier for them to spend the coming weeks on the couch and in front of screens.

But this need not be the case. Nature is closer and more readily accessible than you might think. To be in nature, one does not need to be in a national park or on a backpacking trip in the 'wilderness'. Nature can be in the backyard, in the park within walking distance, and in the tree on

the side of the road. Furthermore, anyone—child, youth, or adult— can experience nature simply by observing birds seen from a bedroom window — along with maybe critters crawling in a rain gutter. With children present, our noticing these living beings just outside our windows can become a first step toward meaningfully interacting with nature and toward helping children use nature to gain relief from the present crisis.

A second step toward gaining relief through connecting children to nature can be helping them find their own 'sit spot'—a physical place in the natural world where they can visit every day, where they can check in with the natural world around them and make observations, meditate, become quiet, and let nature settle around them like a comforting blanket. This tip about 'sit spots' comes from the Southern Oregon Regional Environmental Education Leaders (SOREEL), which has brought over 20 local organizations and education providers that together create the Outside Everyday project, an online education series providing tools and inspiration for students to get them outside exploring. Tara Laidlaw of the Southern Oregon Land Conservancy, one of the organizers of the Outside Everyday project says, "First, I identify four things around me. Next, I identify three things that I can hear. Next, I identify two things that I can touch. And finally, I identify one thing I can smell, After I've gone through that series, I find that I'm much more centered and much more present." She says this about her own adult practice, but her work shows that, with supports from adults, it can become children's practice as well.

For children who are eager to keep their hands moving, [take a look at the full video](#) from SOREEL, and notice when they share how you can also incorporate art and journaling into the sit spot routine. And notice too that regardless of where you're located, there are elements of nature within reach and which anyone can observe.

As a third step or as one incorporated into sit spotting, the Audubon Society suggests that [birding](#) is a great activity during this time of social distancing, especially as spring migration starts to heat up. Birding is something that can be done on a walk through the neighborhood, through finding a sit spot in the backyard, and, most simply, through looking out an open window. And while you and your child (children) are at it, look up and observe the clouds. Look down and observe the dirt. Look out and observe the bark of a tree. Observing these everyday objects of nature offers ways to nurture the positive feelings and attitudes so needed during these trying times.

As a fourth step, try nature journaling — an easy, low-cost, and fun way to enrich sit spot observing or observing wherever. With a writing utensil and something to write on, children can record observations, organize data, uncover layers of wonder and thought, and notice patterns that emerge over time. There are countless prompts that can be used to help children wonder and think about the natural world in deeper ways and to help them become more comfortable in sharing what they're observing. For example, children can record observations about seasonal changes and write about or draw animals and plants that pique their interest. Middle schoolers and youth can read excerpts from nature writers such as Rachel Carson and Henry David Thoreau, then write from their sit spots in the style of the writer. For an additional twist, both children and youth can be encouraged to write from the perspective of a tree, dirt, or clouds. For those keen to explore using senses other than sight and sound, children can be encouraged to associate colors with how things smell or feel, and then create artwork inspired by colors. And without much explaining, children can be encouraged to simply reflect on what they notice, what they wonder, and how spending time in nature makes them feel.

Nature journaling and sit spots go hand-in-hand

and are easily customized for children and youth of all ages and all backgrounds — as a way to reconnect with nature during a time of crisis. For a deeper dive, including step-by-step strategies, curriculum plans, and sample journal pages, take a look at the publication *How to Teach Nature Journaling* by John Muir Laws and Emilie Lygren. You can download this incredible, free online resource [here](#).

Taking journaling one step further, encourage children and youth to make models and mimic nature. For example, outdoor schools such as the [Squaxin Island Child Development Center](#) already encourage children to use found nature objects to help design their own classroom. “Sometimes the children build structures with the logs, sometimes the logs become drums,” says Sabrina Green, the center’s operations director. The classroom is composed of not four walls and a desk, but areas such as Root Ville, featuring the massive root ball of a fallen tree repurposed into a climbing toy, and The Village, a space full of waterproof shelters made by students and teachers. Perhaps something similar could be encouraged for designing spaces near home.

For more ideas, [Outward Explorers](#) was created as a response to the current pandemic to connect people to nature and, through nature, to themselves. It features short, clear, and colorful activity guides that families can use to get outdoors during social distancing — from scavenger hunts to building ‘beaver dams’ to creating ‘bee dances’—activities which help become aware of the different players in the natural world.

Finally, remember that getting outside doesn’t need to be complicated to be useful. Even jumping off a log or climbing a tree can do wonders for children’s mental and emotional health in an uncertain time. [Canopy](#), a nonprofit organization based in Palo Alto, CA, has put together de-stressing resources with trees to help children use nature play and time outdoors to cope with what’s going on,

such as [this breathing exercise](#).

As for climbing trees, [here's](#) an example from Claire Kamenski and her daughter, Ella, demonstrating what any parent of even very young children might do to support safe climbing in a near-by tree.

The methods mentioned here are just a few of the many methods for helping children and youth connect to nature while being sequestered at home. Using them may well have a powerful impact on their mental health and support their being resilient during this current crisis. In the end, letting nature bring joy and wonder into a social distancing world may be just the right way to realize the principal's words, "reset" and "remember". Most important, it might be just the right way to sustain us all!

Wonder and Earth Stewardship

By Lisa Sideris | Image: Stars and Mountains by Nikolaos Karatolos / CC BY-SA



Notes from the Editor:

There are few, if any, who have taught us more about the nature and value of wonder in cultivating earth stewardship than Lisa Sideris. In her latest book, *Consecrating Science*, she gives us all the many meanings of wonder – some not so useful, some even harmful, and some essential for understanding an overall way of being in the world that fosters earth stewardship. Here, in this essay, she clarifies this issue of the nature and value of a certain kind of wonder for the development of earth stewardship, by showing us the wisdom we have inherited from the nature study movement – a wisdom we can and should invest in our work with children and youth so as to nourish their development as earth stewards.

Does Wonder Develop Earth Stewardship? Answers from the Nature Study Movement:

The connection between wonder and children and childlike states is one we often take for granted. Yet wonder is also the province of scientists whose expert knowledge far exceeds that of the average layperson. How is it that the wide-eyed child innocently chasing fireflies in her backyard and the white-coated scientist sequencing genomes in the laboratory are participants in the same experience? And what is it that they experience, anyway? Is wonder an emotion or

a cognitive state? Is it a moral virtue, and if so, can it also become a vice? Is it innate and instinctive, or the product of careful cultivation? Should we think of wonder as a fleeting response or a settled disposition, a habitual way of being in the world?

As anyone who has dabbled in the history and varied meanings of wonder will attest, the answer to all these questions appears, improbably, to be “yes”. More than a century ago, proponents of the nature study movement which flourished in America between the 1880 and 1930 sought to understand these many facets of wonder in relation to children’s nature education. The movement arose as a feature of Progressive era child-centered

education that aimed to counter the deleterious effects of increasing industrialization and urbanization on children's moral, spiritual, and cognitive development. The goal was to instill in children a strong sense of love and sympathy with the natural world, and an abiding appreciation for nature's unknowns. Nature study advocates emphasized learning by doing, engaging the hands and the senses in lieu of dry recitation of facts and memorization of texts and taxonomies.

Leading advocates of this approach often disagreed about the extent to which its lessons overlapped with science instruction. Nor was there consensus on whether its overriding objectives were moral and philosophical, or straightforwardly practical. One proponent of nature study's relevance for applied skills like agriculture put it this way: "Teach [children] all you know of the milky way, but do not neglect to teach them the way to milk." Two of the nature study's chief pioneers were botanist Liberty Hyde Bailey and the writer and educator Anna Botsford Comstock, both associated with Cornell University. Although few people appreciated practical knowledge more than Bailey, he and Comstock argued that the true value of nature study was distinct from scientific training and practical application. Bailey encouraged scientific veracity in his lessons, but he endorsed nature study primarily as means to instill an enduring philosophy, a worldview grounded in profound sympathy with life. Nature study lessons need not have "direct practical application to the daily life," Bailey insisted in *The Nature-Study Idea*, "for the purpose of the effort is to train the mind and the sympathies and to develop in the child a correct view of nature."

Some nature study educators understood their mission to be the cultivation of innate tendencies in the child, traits laid down in our species' long evolutionary history. Children, they believed, were born naturalists. Living things were objects of fascination to our ancestors, these theorists argued,

and so it made sense that children's perceptions of nature are innately animistic and anthropomorphic. That is, children are predisposed to see the world, including inanimate features, as infused with human-like sentience. In this way, the child represented a kind of throwback to our biological forbears. The predisposition toward animism could incline the child to wonder at nature. But this inclination needed to be carefully shaped so as not to take the form of a human bias that regards nature simply as a mirror of our own preferences and values. In this way, nature study enthusiasts anticipated modern environmental debates about whether nature ought to be valued in anthropocentric ways, and whether it possessed inherent worth, apart from usefulness or appeal to humans.

Under Bailey and Comstock's influence, nature study sought to elicit a type of sympathy, even (or especially) toward creatures we might otherwise fear or avoid. What Bailey termed sympathy is actually much closer to a disposition that we today would call empathy. Empathy is not necessarily predicated upon sameness of experience. It demands that we think or feel our way into the experience of others who are truly alien to us. These others include nonhuman lifeforms, generally, but especially those we regard as radically different or frightening. Sympathy, as normally construed, might simply lead a child to fear and detest predators, and to identify with, or feel pity for, prey organisms caught in the predator's grip. True empathy aims to correct these biases. Comstock, for example, encouraged children to put themselves in the place of the predator, to imagine its hunger or appreciate its unique hunting skills, as a method of valuing creatures that elicit fear or distaste.

In seeking to cultivate proper forms of sympathy in children, Bailey sometimes drew a distinction between what he called "intrinsic" and "extrinsic" perspectives. The extrinsic perspective evaluates organisms primarily in terms of their usefulness or

beauty, as judged from an external, human standpoint. Bailey denounced the egotistical notion that everything in nature was made for human use or pleasure. The stubborn belief that humans occupy the central position in nature is nothing but “colossal self-assurance.” An intrinsic approach, on the other hand, strives to see the world through the eyes of other creatures, to know them in their own worlds.

The extrinsic perspective and a fixation on nature’s utility, Bailey worried, could prove injurious to the child’s development of wonder at the genuine otherness of creatures, and at the unknown more generally. A preoccupation with locating the function or use of everything in nature can banish a sense of mystery and deaden the spirit of inquiry. Young minds are above all impressed with nature’s mysteries, Bailey believed. The greatest scientists also admit to not knowing, he argued, for they understand that each discovery churns up additional mysteries in its wake, and that no amount of fact-collecting can dispel nature’s pervasive wonder.

Comstock also made (empathic) sympathy the centerpiece of nature lessons, and the counterpoint to utilitarian valuing. At its best, she argued, nature study allows the child to forget herself and her particular likes and dislikes. Encouraging an animistic belief that everything is alive and sentient could also foster appropriate and lasting forms of sympathy, so long as the child did not take her own experience and perspective as the sole point of reference. These educators sought to strengthen the child’s power to imagine the inner life in a whole range of natural entities. Bird study pamphlets, for example, instructed children to recognize in hens and roosters “at least ten different mental conditions or emotions with perfect distinctiveness.” “What does the flower think?” Bailey asked. What is the brook saying as it rolls over rocks and pebbles? These queries, Bailey suggested in *The Holy Earth*, were not childish questions at

odds with a scientifically informed perception, for “science constantly narrows the gulf between the animate and the inanimate.”

Many aspects of the nature study approach now appear remarkably prescient to us. Recent scientific studies are indeed blurring the line between animate and inanimate nature. Scientists have discovered that trees talk to one another by means of warning signals, and even appear to recognize their kin. Forests are “vibrantly alive and charged with wonder.” Some studies of children’s attraction to nature suggest that they have an innate predisposition to attend closely to nature and nonhuman life, as some nature study proponents held long ago. The biophilia hypothesis, first advanced by biologist E.O. Wilson, maintains that humans, and especially children, have an in-built affinity for the natural world, the product of our ancient intimacy with natural environments. Biology and culture work together to reinforce our biophilic responses. Positive associations with nature may reflect its adaptive value for us (flowers, for example, often signal the presence of food), while aversive responses to certain dangerous organisms, or environments, steer us away from life-threatening situations (think of widespread fear of spiders and snakes). Wilson’s turn to fiction with his 2010 novel *Anthill* fleshes out these ideas in the character of the story’s young protagonist, Raff, who is depicted as a primitive reborn, a “hunter-gatherer” naturally drawn to woods and streams.

Young Raff grows up to become an ardent defender of the bioregion of his youth. But the ethical transition from the biophilic child to the environmentally responsible adult is not guaranteed. Certain assumptions inherent in the biophilia hypothesis itself suggest the difficulties. For example, some of the most common and compelling expressions of biophilia cited by proponents of the biophilia theory are actually instances of biophobia: negative or aversive responses to predators, fear of heights, fire, darkness, open water, storms,

venomous creatures, and so on. It's easy to see how avoiding these encounters would generate adaptive benefits for us or our ancestors. But it's harder to translate these experiences into positive feelings for nature in its totality, rather than select parts thereof. Put differently, biophobia might reinforce our tendency—a tendency that troubled Bailey and Comstock—to see value only in that which we find beautiful or useful, or both. Children's perception that nature is frightening may be further intensified by well-meaning environmental education programs that expose young children to a host of environmental worries, ranging from climate change predictions to warnings about Lyme disease. As researchers on biophilia concede, biologically-engrained negative responses may be much easier to reinforce, and much harder to extinguish, than culturally-elicited fears.

It's probably less important to establish a biological basis for these biases than to recognize their role in steering children toward or away from the natural world. Proponents of nature study like Bailey and Comstock seem to have intuited how fragile the process can be of cultivating nature sympathy and wonder in children. They sought to guard against anthropocentric identification with nature that merely treats it as an extension of ourselves and our own interests and needs. They understood the value of developing animistic sensibilities in children, without making them overly sentimental or science-wary.

Concern with outdoor nature lessons gradually diminished in the twentieth century as the cold war era and the dawning space-race prompted concerns that American children were falling behind in math, science, and technology. For the most part, science and nature education is now conducted indoors, at a time when children and teens already spend far too much of their lives gazing at digital screens. But the legacy of the nature study movement endures in classic texts of the environmental movement and in recent trends

in children's education.

We can see this legacy in Aldo Leopold's call for a Land Ethic that values humans as plain members of the biotic community rather than conquerors who arrogantly claim to know "just what and who is valuable, and what and who is worthless" in natural systems. A good scientist, Leopold argues, knows that nature is too complex ever to be completely understood by science. We see this legacy in Rachel Carson's invitation to readers to imaginatively enter the worlds of alien creatures: "I wanted my readers to feel that they were, for a time, actually living the lives of sea creatures." And we see it especially in her conviction, as elaborated in *The Sense of Wonder*, that children should not be fed a steady diet of facts, at the expense of sensory and emotional education. "Once the emotions have been aroused—a sense of the beautiful, the excitement of the new and unknown, a feeling of sympathy, pity, admiration or love—then we wish for knowledge about the object of our emotional response." And we see the legacy of the nature study movement in the work of writers like Richard Louv and the No Child Left Inside Coalition, and in valuable resources like *Tomorrow's Earth Stewards*.

These modern initiatives address all aspects of a child's development—mental, physical, and spiritual—in ways that science education alone cannot. And in taking their cue from the nature study movement, they give wonder a central role as a quality that is both innate and learned, an enduring emotional response that replenishes the spirit of scientific inquiry and strengthens our moral resolve to care for Earth. Wonder, then, becomes the rightful inheritance of every one of us – an inheritance to invest in our development as earth stewards.

Professor Lisa Sideris of Indiana University Bloomington is well-known for her writings and research on ethics and the environmental humanities, and on the science-religion interface.

Her latest book, *Consecrating Science: Wonder, Knowledge, and the Natural World* explains how pitting science against religion can encourage a devaluation of the natural world.

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Featured artist: Jimmy Rouse

Artwork and stories by Jimmy Rouse. See more on his website: <https://portfolio.jimmyrouse.com/>



“This print is of my step-grandson Jackson in the Canadian woods. He was three or four at the time, insisted on not wearing clothes, grabbed a big stick, jumped up on a rock and declared, “I am Jackson, master of the universe.”



“This was done of my then wife and oldest son, Louie, when we lived in the Fells Point section of Baltimore. We had a nice back yard and indeed an urban garden. Suzan would tend the garden while Louie played outside. The yard was closed in by high walls and backs of other buildings and was very secluded from the noise of the busy street on the other side of the house which was a thoroughfare for pedestrians, lots of shops restaurants and bars, trucks going to the port, and even railroad cars that ran down the middle of the cobblestone street. It was an idyllic retreat. We loved it.”



“In this painting, those are my two grandchildren charging up the hill. The painting is a homage to an early painting hero of mine, Chaim Soutine. He was a Russian Jew who fled to Paris as a teenager because he was beaten in his village for making graven images. At the end of his life, he said there were only two things he wanted to paint, children and trees. I get that. What is more alive than children and trees.”

Jimmy Rouse was born and raised in Baltimore. He graduated from Yale University in 1967 with a B.A. in Political Science. From 1967-1968 he attended MICA in pursuit of his real love: art. Jimmy worked in various jobs to support his art habit. From 1981-1998 he owned and ran Louie’s Bookstore Cafe, a combination full restaurant and bar, bookstore, art gallery and classical music venue. Since selling Louie’s he has worked full time as an artist. In 2012 he co-founded Transit Choices, an advocacy group for better public transit in Baltimore. Now he spends his mornings working on that cause and the rest of the day painting, drawing or doing sculpture.

Overcoming Racism to Recolor the Outdoors

By *W. George Scarlett* | *Image of Black Lives Matter banner in Berlin by Levin Holtkamp*



There's a certain irony in the fact that where we find the most diversity in life forms, in nature, we often find the least diversity in human life forms – at least in the U.S.. In the U.S., go to national parks and many places where wildness is featured, and the predominant representation is white. And close to home, in cities across the U.S., racial minority children and youth whose families lack economic opportunities, compared to their white counterparts, are far more apt to have little connection to green spaces and to the wonders and benefits that nature offers. If, as Richard Louv famously put it, today's children and youth are apt to suffer from 'nature deficit disorder', this is all the more true for children and youth of color. And what researchers refer to as "environmental inequality" isn't just about not having access to green spaces and nature; it's also about perceiving green spaces and nature as unsafe and not offering positive opportunities for adventure, exploration, play, and all the other ways that

nature has such a positive meaning for so many children and youth who have been lucky enough to not have to deal with racism – institutional or otherwise.

As for the environmental movement and stories of great outdoor adventurers, ask what Henry David Thoreau, John Muir, Edmund Hillary, and Rachel Carson have in common, and a first

answer is likely to be that all four are widely recognized to be among the pantheon of environmentalists or outdoor adventurers. But a second answer, one that might not have been offered before recent events, is that all four are white people with roots in European, western culture. And as much as these four have been sanctified, their black counterparts go largely unnoticed. The adventures of John Francis ("Planet Walker") and Captain Bill Pinkney (who sailed solo around the world) provide worthy comparisons to the adventures of Thoreau and Muir. In a similar vein, Mathew Henson's reaching the North Pole with Admiral Peary is as noteworthy as Edmund Hillary's ascent of Everest with Tenzing Norgay. And while the comparison may not be exact, MaVynee Betsch's sharing her love of the ocean is comparable in important ways to Rachel Carson's doing the same. But despite their accomplishments, these Black adventurers and earth stewards go virtually unnoticed in the

writings and teachings about high adventure in the great outdoors and about the environmental movement.

The near invisibility of Black environmentalists and Black adventurers in the ‘Great Outdoors’ speaks loudly to perhaps the single most important fact about race and the environment – that the American narrative told about the environmental movement and the ‘Great Outdoors’ often excludes blacks. In the U.S., Black people appear in lots of images featuring sports and urban life, but hardly at all in images featuring people enjoying the great outdoors – hiking, fishing, skiing, and the like. And this absence of images matters – because it perpetuates the feeling that the great outdoors is a ‘white space’ where black folks aren’t welcome. Furthermore, it undermines one of the most important supports for environmental stewardship, namely, rich experiences of wonder and awe that cultivate caring for nature and for the health of our planet.

But why is this so? Why is it that Black people are so often missing in discussions and images of the environment and ‘Great Outdoors’? As Carolyn Finney writes in her groundbreaking book, *Black Faces, White Spaces*¹, “The dominant environmental narrative in the United States is primarily constructed and informed by white, Western European, or Euro-American voices” – and that narrative features white families taking hold of land – for example, the Oklahoma land rush of 1889 – and making good lives for themselves and finding in wilderness and nature both solace and high adventure. Left out is the other narrative, that of African-Americans who were promised land, then denied land – forcing many to move north to become urban dwellers in low-income neighborhoods. And part of this narrative is the sad legacy of the woods and nature being associated with assaults on African Americans, not by bears, wolves and other non-human animals, but by white, human animals – making the woods

and wilderness feel unsafe for African Americans. When John Muir looked down Yosemite Valley, he saw “God’s cathedrals”. When MaVynnee Betsch (see below) looked out from her ‘American Beach’ in Florida, she saw (in her mind’s eye) enslaved Africans being murdered by their slave owners.

Finney goes on to document how, in magazines and outdoor recreation literature, persons of color have been largely absent – so that Black children and youth in America have had few models to steer them to the great outdoors. Her conclusion is this: “... our unhealthy relationships with the natural environment are intimately linked to our unhealthy [black-white] relationships with each other.” One solution, she says, is to use, “...memory, as a way of evoking the past, (for it) becomes an important vehicle for involving the community in environmental preservation, conservation, and participation.” The previously mentioned example of MaVynnee Betsch offers a case in point (again, see below) — that African Americans allowing themselves to remember awful times, of slavery and the rest, can, paradoxically perhaps, help African Americans connect to nature and become earth stewards.

What of today’s Black leaders helping Americans of all colors connect to nature and foster their development as earth stewards? Happily, there are many, and the numbers are growing. Finney is an example – so too is Will Allen (urban farming), Brenda Palms Barber (“Sweet Beginnings”), and Majora Carter (“Sustainable South Bronx”) — all address the more current environmental issues for African Americans – issues pertaining not only to the health and happiness of families but also to sustainable practices needed to save our planet.

And what of today’s efforts to support children and youth of color being out in nature? Again, there is reason to be optimistic. As environmental educators Nina Roberts and Alan Spears explain, for well over fifty years, there have been a host of good programs (Outward Bound,

Student Conservation Organization, Beckwourth Mountain Club, — to name just a few), all fostering diversity and inclusion in outdoor recreation and stewardship related programs for children and youth. In their words, “While some people use language indicating ‘we need to start getting more people of color outdoors,’ the real need is to remind people ... to continue what has taken other professionals, and pioneers, decades to cultivate and endure.” And they go on to caution everyone not to think that people of color need to be ‘saved’ by getting them into the great national parks. There is plenty of nature outside of national parks where all can feel welcome (As an example, see Derek Lugo’s story below).

So, what can we take from these complex

storylines? I think one important takeaway is this: When it comes to the great outdoors and the environmental movement, while racism has figured prominently and continues to figure prominently in how people of color experience the great outdoors and how people of color contribute to the environmental movement, racism has not won out. On the contrary, the host of good nature-based and environmental programs where people of color are leaders suggests that increasingly racism won’t be the barrier it has been in the past — leaving persons of color in the U.S. to more freely connect to nature wherever nature may be, so that children and youth of all colors can more easily benefit from nature’s gifts, and feel supported in becoming earth stewards.

Films:

[Alex Bailey: Recolor the Outdoors \(Ted Talk\)](#)

[MaVynnee Betsch \(American Beach\)](#)

[Derek Lugo – The Unlikely Thru Hiker](#)

1. Finney, C. (2014) *Black Faces, White Spaces: Reimagining the Relationship of African Americans to the Great Outdoors*. UNC Press Books. Chapel Hill, N.C.
2. Roberts, N. & A. Spears (2020). *People of Color Have Always Been Outdoors. What Can We Learn from Past Decades of Engagement and Inclusion Work?* in *Bay Nature*, July, 2020.

When Young People Worry About Climate Change

By Maria Ojala | Image: *The Laundress* (1863) by Honoré Daumier Via [metmuseum.org](https://www.metmuseum.org)



Many young people today worry about climate change and what is happening to our planet. And those who worry cope in very different ways. Some ways lead away from positive actions and earth stewardship, while other ways forge a foundation for positive actions and earth stewardship. So how do we discover the differences? Most important, how do we support those ways of coping that lead young people to

make a positive difference by becoming earth stewards?

My research with young people living in Sweden, in the ages from late childhood to emerging adulthood, shows that young people are not passive victims of climate change related emotions that have been evoked in them in school or by media. Rather, young people deal

with these emotions actively by using various coping strategies. Because these coping strategies differ with respect to whether or not they promote well-being and engagement, those of us involved in supporting youth and their development as earth stewards need to shift our focus from young people's worries to the ways that young people cope with these worries. Doing so will help prevent the use of less constructive coping strategies and promote the use of more constructive ones.

What, then, do young people's coping strategies look like? My research shows the following: A small group cope by de-emphasizing the seriousness of climate change — arguing that media and researchers exaggerate the seriousness of the problem or that the negative consequences will only be visible in the far future, so why should they care. A larger group worry but cope by avoiding

information or by distracting themselves. These two groups cope, then, by using strategies not designed to support their becoming earth stewards.

Another common way to cope with the climate threat is to search for information, and think about what one can do to alleviate the problem, that is, using a problem-focused way of coping. Often this is about planning for and engaging in small actions such as stopping to eat

meat and telling parents to take climate change seriously. Although this way of coping goes together with a feeling of empowerment, which is something positive, in two studies this coping strategy also was related to general negative affect among the young. Perhaps this was

the case because these studies were conducted before the Fridays for future movement and the big climate change demonstrations, so the participants did not focus on collective engagement at all, only on small things that one can do in everyday life which perhaps put a too heavy burden on their shoulders.

Aside from the coping strategies just mentioned, there is another way that young people cope. This is by using meaning-focused coping, which is a strategy associated with both active engagement and well-being. To understand meaning-focused coping, one needs to shift from asking how young people regulate worries to asking how they promote hope. This hope can serve as a buffer and prevent worries from leading to low wellbeing or to undermining desire and ability to act. Meaning-focused coping consists of acknowledging the seriousness of the problem, but it also is about acknowledging there are reasons to be hopeful as well as opportunities to act to make a positive difference, no matter how small. This could be acknowledging that we have accumulated a great deal of knowledge about climate change – knowledge that will allow us to solve complex problems that we could not solve before. Acknowledging the positives

in this way can also take the form of trusting scientists, environmental organizations, politicians, that is, more powerful actors who can take on most of the burden for solving problems so that the young need not feel overburdened.

How, then, can the knowledge of these coping strategies be included in climate change education and communication, as well as in environmental studies? Firstly, research shows that young people who de-emphasize the climate change problem think that teachers and parents do not take their negative emotions about societal and environmental problems seriously, while the opposite is true for those young people who use meaning-focused and problem-focused coping strategies. Therefore, a first step is to acknowledge and take seriously the emotions that young people express when learning about climate change – and to not worry about young peoples' worries, but rather to acknowledge and validate their emotions. Doing so helps young people gain a sense of having some control.

In addition to validating the worries of young people, educators (and parents) can turn the discussion of global environmental problems into a discussion of values — such as the values of caring for animals and caring for those suffering from flooding, wildfires and other symptoms of climate change and environmental breakdown. To paraphrase scholars such as the philosopher Ernest Bloch and the educator Paulo Freire, to confront the dark is, paradoxically, a first step towards acquiring hope. This hope comes, then, from having a critical understanding of the current situation and a realization that something is missing and that we need to act.

Moreover, we need to focus on ways that cultural, discursive, and structural factors influence how young people cope with their negative emotions around climate change. The sociologist Zygmunt Bauman argued that people today have a hard time confronting negative emotions associated with societal problems and to do something

constructive with them because our neoliberal culture promotes mostly positive and pleasurable emotions. Negative emotions are seen as dangerous because they can disrupt the neoliberal system. A culture that only focuses on positive emotions and that is discounting or discouraging negative emotions can lead to young people distancing themselves from climate change or limiting themselves to only individualized problem-focused strategies and a privatization of hope. Doing so keeps them from making demands for much needed structural changes in the ways societies address problems associated with climate change.

In acknowledging that coping is influenced by larger societal factors I have argued elsewhere that there is a need to go beyond promoting “emotional competence” so as to promote “critical emotional awareness”. This implies critically discussing and asking which emotions are allowed in climate change discussions and education. Whose emotions are taken seriously and whose are not? Do we treat boys and girls alike? Why do certain groups of students feel guilt or shame while others grow angry? Why do we use distancing and individualized strategies and not so much collective strategies? Are there other ways of coping with emotions related to climate change? What are the sources to build constructive hope? What implications do our feelings and coping strategies have for engagement and education? In other words, a critical emotional awareness approach calls for generating a whole host of questions and a commitment to discussion about possible answers.

In response to this argument for a critical emotional approach, some might claim that young people being engaged by adults to think critically about their emotions are actually steered to feel whatever adults would like them to feel. I argue the opposite is the case, or can and should be the case, because truly promoting critical emotional awareness means providing young people with knowledge and tools to expose any attempts to steer and

govern them through emotions. As the educational sociologist Sarah Amsler puts it: “It is not about evoking the “right” emotions. Rather, it is about encouraging a critical understanding of why one experiences certain emotions and desires and not others”. And I would add that a critical emotional awareness approach fosters understanding of why one uses certain ways to cope and not others.

As is the case with many educational approaches, adopting a critical emotional awareness approach is demanding and requires thought, planning, and support. In order to help young people gain the strength to confront their worries and to take on a critical emotional awareness approach one can invite into the classroom actors who work in different ways to fight climate change and other sustainability problems regardless of difficulties and who therefore can be role models for the young. In addition and as scholars such as Michael Fielding have emphasized, it is important to promote friendships and “democratic fellowship” in the classroom. This approach hopefully leads to a trustful atmosphere that can aid learning about emotionally laden topics.

Another way to aid a critical emotional awareness approach is to take into account the developmental psychologist William Damon’s research about youth purpose. He found that the best way to experience meaning in life and to promote psychological well-being is to find a purpose that goes beyond a focus on oneself, that is, to commit to a bigger cause that includes other humans, society, or nature. Youth purpose also includes active collective engagement around this purpose. The big climate change demonstrations that have taken place in many different countries before the corona crisis, and that engaged a lot of young people, can be seen as a way to find purpose in life. The task for educators, therefore, is to think about and discuss how to include this youth engagement in climate change and environmental education. This is in line with educational theories such as “the

action competence model” where giving students the opportunity to act, preferably together, is a vital aspect.

All this is to say that a critical emotional awareness approach can lead to a number of valuable outcomes related to young people becoming earth stewards. Whether it be finding values worth fighting for, reasons to be hopeful, a higher purpose to define oneself, or some other positive outcome, critical emotional awareness most probably can serve young people well in their development as earth stewards.

Maria Ojala is an associate professor in psychology at Örebro University, Sweden. She has also worked as an assistant professor at the Department of Education, Uppsala University. Her research interest concerns how young people think, feel, cope, act, learn, and communicate about global problems, specifically climate change. Maria has also written extensively on hope and climate change. She has published articles in for example Journal of Environmental Psychology, Futures, Journal of Youth Studies, Environment & Behavior, and Environmental Education Research.

The Elephant-Human Relations Aid Program: Projects and Empathy for a Neighborhood of Friends

By Osita Achufusi | Image by Dariusz Jemielniak, via Wikimedia Commons



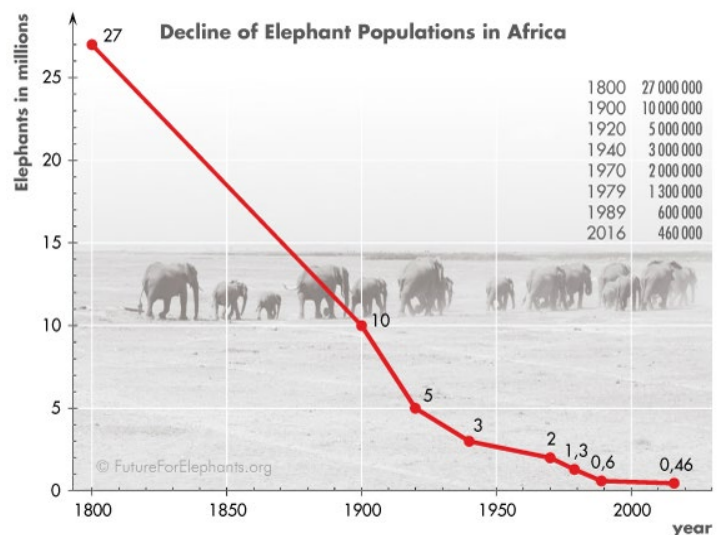
better relationships with, not just elephants, but non-human animals in general.

EHRA focuses on one specific cause of the declining elephant population, namely, humans mishandling areas of competition between elephants and humans for valued resources, specifically water. This mishandling led to an “us vs. them” mentality when it came to getting water, and people figured it

might as well be us – an impersonal and uncaring mentality defining a more general cause of the declining elephant population.

415,000.

That’s how many African elephants are left in the wild as of 2018, according to the World Wildlife Foundation. While this may seem like a sufficient amount, it’s not. Consider that an estimated 10 million of these gentle giants roamed Africa just a mere 90 years ago and that there was an approximate 111,000 drop in the African elephant population between 2006 and 2016, and suddenly 415,000 sounds dangerously low. And so, we need to understand what’s causing this crisis in order to find solutions. The Elephant-Human Relations Aid (EHRA) not-for-profit organization in Namibia does exactly that: They find causes and create solutions that provide insight into how we can effectively cultivate



As for EHRA's addressing the first, specific cause, despite elephants often being gentle enough to use their trunks to delicately lift a peanut out of a person's hand, they can get destructive when hydrating themselves. One of EHRA's projects, then, involves adult volunteers constructing walls around water points – such as pumps and tanks – in the Namibian desert. The walls built around water sources allow elephants to access water without damaging the infrastructure of the water distribution systems, thus preventing conflicts with the people who rely on the same resources.

As for EHRA's addressing the more general cause, the “us vs. them” mentality – one indicating a lack of empathy for elephants, EHRA undermines this mentality by having volunteers track and monitor the desert elephants, as well as record new births, deaths, and injuries. By doing so, EHRA's elephant management routine requires close observation by the volunteers, which allows them to know each elephant individually. By noting individual physical features and personality traits, volunteers connect with each elephant on a personal level and begin to empathize with them as they would with a friend.

Elephants are very well-suited to cultivate human empathy and care. They are well-suited because they often express strong emotions that many animals do not or cannot express so clearly — emotions such as love, compassion, grief, and joy. For example, when happy, these extremely intelligent creatures flap their wing-like ears and trumpet, and when grieving over the loss of a loved one, they sometimes take several minutes to pause over the place where the loved one died. There is even evidence that elephants perceive humans as cute: the part of their brain that lights up upon seeing a human is the same part that lights up in a human's brain when seeing a puppy. While these behavioral similarities may not definitively prove our kinship with elephants, other observations suggest that elephants do value their personal

relationships with people, and so, in return, we can and should do the same by valuing our relationships with elephants.

All this is to say that the specialness of EHRA is that it focuses not just on conserving elephant populations, but on prioritizing the elephant-human relationship (hence the name EHRA) through minimizing conflict and developing personal, empathetic connections with elephants. In doing so, EHRA volunteers – both the parents and the children – come to think of themselves not as “saving the elephants”, but as bonding and empathizing with them as their good neighbors, even as their friends.



Humor for Climate and Social Transformation

By Janot Mendler de Suarez and Pablo Suarez | Image by mathiaswasik, via Wikimedia Commons



Notes from the editor:

Humor has long been a support for children’s and youth’s positive development – and yet there is relatively little written about humor and the possibilities for using humor to engage children and youth in developing as earth stewards. In Janot Mendler de Suarez and Pablo Suarez’ essay, we gain insights into how humor works to motivate adults to address serious issues around climate change and environmental justice. Our job is to take those insights and figure out how they can be applied to our work to support tomorrow’s earth stewards.

What does humor have to do with serious stuff like climate change and environmental justice?

Short answer: everything. Most people associate ‘humor’ with laughter, fun, or jokes, but when we asked legendary cartoonist Bob Mankoff what he thinks of when thinking

about humor, he looked us straight in the eye and replied: Death. Professional humorists see the world through the lens of what’s absurd but real, what’s unacceptable yet accepted. That’s why they associate humor with risk and danger (which can certainly lead to death). There is a logical progression from ambiguity, to incongruity, to conflict that informs the creation of what others recognize in their work as humor and that can help to motivate us to reflect and act.

This power of humor to motivate came to us as a solution to our struggles to engage people to act when relying on science alone. As researchers and water resource systems managers turned humanitarian workers, our jobs involve a lot of communicating about the complexity of climate risks. However, when trying to talk science to disaster managers, we discovered (rather painfully) that we were extremely good at putting people to sleep. Guess what: research shows that showing research doesn't work!

Reflecting on a deeper level, it seems what we really need to figure out is how to embrace and harness conflict. What we're ultimately trying to do is to foster risk-informed decision-making. But this involves weighing the different priorities of different people and groups, and often struggling to resolve different objectives. If we avoid the clash of differing priorities and objectives, we prevent the sparks of illumination that need to fly to find viable solutions.

Take clashes over environmental justice as an example. The world's most vulnerable people are facing food insecurity, livelihood insecurity, and for growing numbers around the world, disaster-induced displacement. Tweaking the status quo is not a solution. The risks of uncertainty and instability are growing at an unprecedented rate, and the level of risk to humanity – including the very functioning of the biosphere, the earth's life support system – will continue to accelerate to the extent that the roots of inequity, and the related existential risk of climate change, are ignored. Clearly, collective action to make structural changes is needed. But how do we effect such changes when the priorities and objectives often clash?

Humor can help – in part, because humor deals so deftly with risk and conflict, and in doing so, humor can lead us to the edge of our comfort zone around conflict and in a way that is empowering, and thus feels safe. In other words, humor can serve as a sort of societal flight simulator to

harness the risk of conflict in making difficult decisions. Humor also allows us to objectify, to view ourselves as part of a system with its own rules and dynamics, which in a humorous light may not seem so immutable after all.

Humor can open a window on ourselves and the systems we might otherwise take for granted. Cartoonists develop an uncanny ability to create a parallel reality that sheds light on the contradictions, tensions, and general ridiculousness of our world. They notice what is unacceptable yet accepted, and we delight in their humor that challenges the status quo.

One area where cartoonists have made us laugh at the unacceptable is what's happening (and not happening) in response to climate change and what's happening (and not happening) with respect to the injustice visited on the most vulnerable who are least responsible for climate change. In making us laugh, cartoonists help to dissolve the denial and avoidance that prevents us from acting to address these heretofore intractable problems. By helping us bridge the gap between what is seen and unseen, spoken and unspoken, between what is and what could be and should be, through their humor, cartoonists keep us honest.

Humor that is inclusive, that reveals to us our role in a bigger system in an ironical or challenging light that makes us smile also makes us feel that change is possible. This may in part explain why we find that shared humor helps us feel more able to face the reality of climate change together, and also to engage in difficult conversations, on issues that could lead to conflict. Cartoonists use humor to make the strange familiar, and the familiar strange. Exploring the humor they create offers a safe space for discovery, and invites us to confront cognitive dissonance, and to engage in difficult conversations.

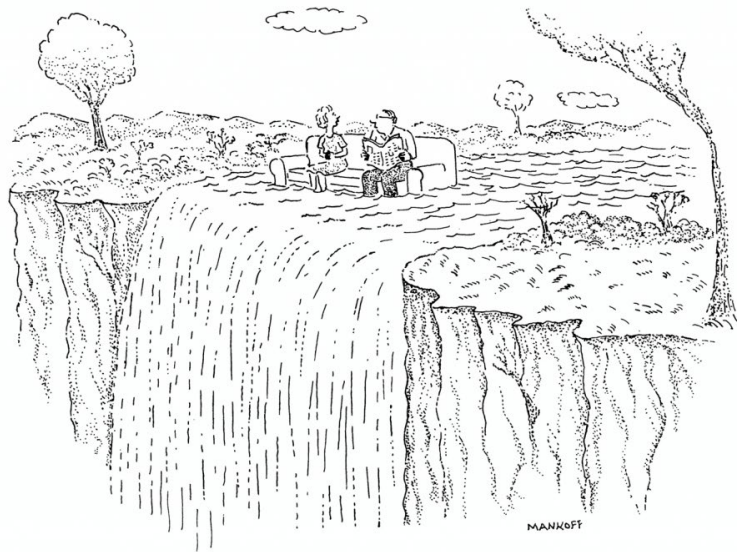
Put another way, cartoonists provide metaphors that mirror our cultural reality, metaphors that

invite us to recognize what in that reality is ridiculous, inexcusable, and in need of change. And in our collective experience of finding humor in the absurd and unacceptable, we are invited to become co-creators of new cultural metaphors. That is, when, because of humor, people are having a good time discussing serious stuff, hard truths become the focus for all involved, and shifts in thinking and relating can start to happen. Recognizing how the humor of cartoonists works to foster good discussion around contentious issues (such as climate change and environmental justice) led us to join forces with professional cartoonists to develop a facilitated method for co-creating visual humor as a means to confront risk and promote difficult discussions. This is a new method we call Cartoonathon!

Whether carried out virtually or in person, the “cartoonathon!” is a new modality of co-creative interaction which quickly engages participants in making meaning – from confronting ambiguity, incongruity and conflicting ideas to sharing ideas and collaborating for the purpose of designing meaningful actions. With help from Mankoff and the CartoonCollections.com team, we’ve begun to design and deliver virtual events for organizations in the humanitarian sector ([IFRC](http://IFRC.org)), international organizations (the [World Bank](http://WorldBank.org)), universities (Northeastern), and organizations focused on social and environmental responsibility (the [BMW Foundation](http://BMWFoundation.org)). Here’s how these events work:

After a brief welcome, we jump right in with a warm-up exercise in cartoon annotation. Participants are invited to review a curated selection of a dozen or so thought-provoking cartoons, comment and discuss in small breakout teams. Next, while participants experience informative presentations on the event’s theme via live stream, several cartoon artists attentively listen and in real

time, sketch original cartoons inspired by what they hear, including any “Q & A” or breakout group reflections. Their cartoons aim not to synthesize content or produce laughter, but to highlight cognitive dissonance and challenge what they have heard using creations that inspire critical reflection and meaningful dialogue. That is, the aim of sharing these tailored cartoons is to facilitate a meaning-making process that takes participants from “Huh?” to “HaHa”, to “Aha!”



“Brad, we’ve got to talk.”

CartoonCollections.com

For example, in a “cartoonathon!” on disaster risk financing with members of the Afghan government, when an official requested support to “bring the government to the field where climate related disasters happen”, participants nodded in acceptance, but one of the cartoon artists detected and [depicted](#) some underlying assumptions, with a drawing of a bureaucrat, busy at a large desk in the middle of a field of dried-up crops, observed by two official-looking characters, and in the caption one remarks to the other, “We put him in the field, but it didn’t help.” At first glance participants were confused (‘Huh?’), then smiled (‘HaHa’) in recognition of the likely future that awaited their proposal, and some burst out in laughter as

they reached a shared insightful realization ('A-ha!') — that merely being present is not enough for delivering solutions out in the field where disasters happen.

In the culminating step of a “cartoonathon!”, participants critically examine the draft cartoons and suggest ways to make them clearer, better, and/or more useful. Doing so becomes a bonding experience, which can lead to participants discussing how the newly-created cartoons relate to the problem at hand and to their own experiences — discussions that can trigger insights and proposals for next steps to solve problems.



“We can’t imagine what a spider thinks, Louisa, because it’s a whole different life style.”

CartoonCollections.com

Here’s another example of a cartoon working to promote meaningful discussion and an aha experience. The cartoon depicts a humorous conversation between mother and child about the spider’s different life style being what prevents us from understanding spiders. It offers a metaphor that, depending on the context, could be used to invite conversation about the tensions between human systems and natural systems, or conversations about cross-cultural differences in lived experience, or carried even further, about barriers that prevent us from seeing ourselves as part of one unified natural system within a larger interdependent

system- of -systems.

Countless cartoons about everyday risks and conflicts, originally conceived for other reasons, become eerily relevant when applied to opening conversation in the context of covid-19. This is in part because humor is a universal language. It is a reflection of the human spirit, a language for making meaning, that can help to bridge issues and culture. We recognize the metaphor and translate it according to our own context.

Two people may share delight in a specific cartoon, and while a shared experience of finding it funny can begin to shift the culture of a group, it can at the same time trigger processes of inner interpretation that may have different meanings and nuance, including nuance or meanings beyond what the cartoonist may have had in mind. By facilitating this process of cartoon-inspired dialogue around what strikes these chords of humor, we can harness humor to drive collective discovery, in ways that deepen conversation and enlarge the scope of collective insight.

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Footnote: For those wishing to make use of cartoons and their humor to support good discussion around complex and often contentious issues, the following content-specific creations by professional cartoon artists [Drew Dervavich](#), [Emily Flake](#), [Kaamran Hafeez](#), [Paul Bisca](#), [Peter Kuper](#) and [Rebeka Ryvola](#) can be found [here](#).

Book Review: The Hyena Scientist

Montgomery, Sy and Nic Bishop. *The Hyena Scientist*. (Houghton Mifflin Harcourt, 2018)

Review by Marion Reynolds



“Today is May 16, time 5:35.”

Kay Holekamp, hyena researcher extraordinaire, her student research assistant Ciara Main, and guests Sy and Nic head out on an early morning observation.

“Shortly after we move on from the den, we spot a low-ranking female, Baez, who offers us a piece of the puzzle that may help answer these questions: she poops. ‘Great!’ cries Kate, who reacts as if Baez has just offered her a treasure. In a way, she has: poop offers an easy way for scientists to see what prey species the hyenas have eaten, discover any parasites that infest their guts, and measure concentrations of many of the hormones that drive or reflect behavior. So each time a hyena poops and a researcher sees it, one of the team leaps out of the car . . . to collect it in a plastic bag for later study.” (Montgomery, p. 26, 2018). In this

case, Ciara, a student headed for graduate study in hyenas’ female-dominated species, collects the sample.

Science journalist Sy Montgomery and photographer Nic Bishop’s latest addition to the Scientist in the Field series, *The Hyena Scientist* dispels myths and misunderstandings about the true nature of the African spotted hyena, profiles the presence of women in science, and tells the story, through anecdotes and examples, of Kay’s decades-long research in the field. The unfairly maligned hyenas resemble dogs, but are more closely related to the

mongoose. Hyenas belong to their own family, the Hyaenidae.

Montgomery models what it means to be curious with her emphasis on science as an endeavor characterized by seeking answers to questions that arise in field research. In the poop collecting anecdote, the questions include: “Biologically, what drives this odd, rigidly regimented, female-dominated society? What role if any, do natural body chemicals like hormones play? How do the hormone levels of male hyenas differ from females, and how do high-ranking females’ hormones compare with those of low-ranking ones?”

Kay’s research team includes Dee White, data manager and research assistant; three student interns, Ciara Main, Jared Grimmer, and Amy Fontaine; research assistant Benson Ole Pion, a

local Maasai herdsman; and the all-important Kenyan support staff. Montgomery profiles each member of the team, who share a fascination for wild animals since early childhood. As guests, Sy and Nic fully participate in life in Fisi Camp, located in the Maasai Mara region of Kenya, south of the equator. Upon arriving, Jared escorts Sy and Nic about the camp. The tents are equipped with



Image: Hyena in Serengeti National Park, Tanzania. Photo taken by Thomas Fuhrmann, edited by Eva Heaps

three zippers, the confluence of which are stuffed with a sock so as to deter determined snakes from squeezing through the small opening. Next, Jared demonstrates the screened, open-to-the sky hot shower, and then on to the nuances of the similarly screened toilet. After a tasty dinner in the mess tent lit by solar-powered lights, they retire for the evening. “As night falls, the dark throbs with unseen voices: fruit bats beeping like electric alarm clocks, nightjars whistling like lonely ghosts, jackals calling with rusty-hinge squeaks. Insects and frogs chime, tick, pop, hum But it’s not until I am snug in my bed that I hear the nighttime welcome I’ve been waiting for: the haunting oooooOOO-Whoop! of a distant hyena, calling to her family in the night.” (Montgomery, p. 17, 2018)

A reader might wonder why, in addition to

adventure, study hyenas. “Hyenas, Kay maintains, are fascinating because they are just so different: not only from the reputation that precedes them, but from most mammals in general. Because their clans are dominated by females, hyenas break the ‘rules’ governing most mammalian societies – and that gives us a fresh way of looking at the more usual arrangement. And far from skulking, cowardly scavengers, spotted hyenas are among the most intelligent and social mammals on earth.” (Montgomery, p. 67, 2018)

Other titles in the award-winning Scientist in the Field series by Montgomery and Bishop include *The Snake Scientist*; *The Tarantula Scientist*; *The Tapir Scientist*; *Chasing Cheetahs*; *Quest for the Tree Kangaroo*; *Saving the Ghost of the Mountain, An Expedition Among Snow Leopards in Mongolia*; and *Kakapo Rescue: Saving the World’s Strangest Parrot*. Sy has worked with photographer Keith Ellenbogen on additional titles in the Scientists in the Field series.

In each book the story of the expedition features participation in the field research, interviews with the scientists and their teams, and the science of animals under study. Short chapters, full-color photographs, and lively writing make the information accessible to elementary age readers throughout the series.

Web Resources

-Kay’s research assistants and students blog from Masai Mara about their research: msuhyenas.blogspot.com

-Listen to the sounds hyenas make: hyenatalk.weebly.com

What if You Could Email A Tree?

By Ashley Lin | Image by Ellen Debreuil



If you don't know the name of the tree outside your house or apartment (or don't know if there is a tree outside your window), you're not alone. Most people don't think about finding nature when they look out their window at home or at their workplace, so they don't see nature. And not seeing nature, 'Nature' comes to be considered as something far, far away, something big and grand, and something "wild," untouched by human beings. In our search for the National Parks and old-growth forests and natural tidepools, we can forget that nature can be found in the trees right outside our windows. Which brings us to our

story.

When, in 2018, city planners in Melbourne, Australia assigned each tree an email address, they interrupted our nature-only and city-only ways of thinking. In the beginning, the city planners had intended for ID numbers and email addresses to be a convenient way of reporting problems with trees, like dangerous branches or storm damage. But by naming and giving contact information to one of the most visible pieces of nature within the city (and even

right outside our windows) city officials reminded citizens to reclaim the nature around them by connecting to the trees.

Melbourne's residents quickly decided that they were less interested in filing damage reports than they were celebrating and thanking the city's over 70,000 Eucalyptus, oaks, and elms — each of which were felt to be heroes in their own unique way. Whether they serve as a perch for local birds and squirrels, remind hurried passersby to slow down and breathe, provide welcome shade on hot summer days, or something else entirely, it

became clear that every tree had at least one secret admirer.

It wasn't that these city-dwellers hadn't been interacting with nature. It was that they had simply forgotten how to notice and express it. Emails made this much easier. And citizens wrote thousands of, not just ordinary emails, but love letters to their favorite trees. This one was typical:

Dear Green Leaf Elm,

I hope you like living at St Mary's. Most of the time I like it too. I have exams coming up, and I should be busy studying. You do not have exams because you are a tree. I don't think there is much more to talk about as we don't have a lot in common, you being a tree and such. But I'm glad we're in this together.

Perhaps a bit silly, but definitely heartfelt. By emailing trees, Melbourne's citizens remind themselves that they aren't separated from nature by the city; they are very much in nature and a part of nature. And that last phrase, "we're all in this together," suggests some sense of mutual responsibility to take care of each other.

So, if you don't know the name of the tree outside your window (or don't know if one exists), go take a look! Even if you don't live in Melbourne, it doesn't mean you can't give your tree an email address and write them. Express your love, gratitude, and companionship. Be silly. Be serious.

Just let the words flow and realize that nature is all around you. We're in it together.