

What can art do for ecological thinking?

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This issue of *The Ecological Citizen* has a partial focus on art, and the articles by artists all address, in various ways, the question of how art (or the arts) can contribute to ecological thinking. They argue that art can help to shift us out of our western- and human-centric modes of thought and experience; that it can mediate sensory and emotional responses to environments, other animals and plants; that it can channel nonverbal, extra- and pre-linguistic means of communicating, which takes us out of habits of thought formed by the very niche tool of human language; and that it can raise ethical questions and engage audiences or participants in thinking about ecological ethics. In this issue of the journal, Joe Gray reports on a seminar about invertebrate sentience (Gray, 2022). He quotes a remark made at that seminar by prominent marine biologist and octopus expert Jennifer Mather that, when talking about sentience in cephalopods, we must “start thinking of them themselves: not them in terms of what *we* know and what *we* are, but in terms of what *they* are” (in Gray, 2022: 204). The arts are particularly well placed to do this, not only with regard to octopuses, but other animals, plants and environments too – and much art does attempt to decentre the human, and to acknowledge and mitigate for (western) human biases.

Significant for the embodied politics of many artists is an understanding that the western scopic regime – the privileging of the eye and its corresponding detached objectification – is a part of the colonial acquisitive and assimilationist project. This awareness informs artworks that attempt to show the world from other animals’ perspectives. It is also intrinsic to an increased emphasis on nonvisual phenomena and sensory experiences, in their

approaches to ecological and multispecies representation. There is a plethora of sensory approaches to our relationships with the environment and other animals; many of these centre on the importance of fostering ecological empathy through sensory experience.

Art collectives Marshmallow Laser Feast and Keiken are two examples of the ways artists are working to challenge human-centred sensory experiences. Marshmallow Laser Feast imaginatively represent how other animals might experience their environments. Viewers of their virtual reality work, *In the Eyes of the Animal*, can fly through the trees or swim through the streams of Grizedale Forest (in the north of England) as a dragonfly, owl or frog (<http://intheeyesoftheanimal.com/>). The work is a composite of 360-degree drone footage, Lidar scans computerized tomography, photogrammetry and field sound recordings of the forest as well as the sounds the animals make – the hum of the dragonfly’s wings, the frog’s croaking. Binaural audio simulates the 3D quality of sound in real space, and a vibrating backpack adds a haptic dimension to the soundscape. Marshmallow Laser Feast is currently working on the artwork *Invisible Rainforest*, in partnership with The Eden Project, which promises further development of these ideas. The Eden Project is an eco-visitor attraction in Cornwall, England, that has two large biomes that simulate a rainforest and a Mediterranean environment. For *Invisible Rainforest*, an augmented reality experience within the Rainforest Biome is being developed, that will visualize rainforest worlds usually invisible to human eyes.

The art collective Keiken has developed wearable haptic and sonic ‘interspecies pregnancy bellies’ for their current ongoing project, *Bet(a)Bodies*. Audience participants can wear the silicon bellies that vibrate and emit sounds of different species’ young, within the context of Keiken’s various immersive multisensory environments and workshops that often incorporate augmented reality, virtual reality, and performance. In a recent exhibition at Eastside Projects Gallery in Birmingham, England, audiences were invited to put on these bellies and recline on water-filled cushions in a soothing environment. Premised on evidence that wearing a pregnancy belly produces empathic responses (regardless of sex or gender identification), Keiken’s artwork explores whether a belly that gives the sense of being pregnant with another species might help to generate more cross-species empathy. They extend a millennial idealistic and optimistic hierarchy-flattening of gender fluidity to other animals, in a queer performance of species fluidity. The work suggests removing hierarchies that place humans’ sense of their rights to live and reproduce above other animals’ rights.

These examples are heavily reliant on technology, which of course raises ethical questions about whether they are helpful or actually part of the problem – a question central to artists Heidi Morstang’s and art duo Touchstones’ articles about their work in this issue. Artist and filmmaker Morstang reflects on the ethics of making in relation to her film *Prosperous Mountain* (2014) and series of electron micrographs *Ringhorndalen* (2020), about the Svalbard Global Seed Vault. For her, these represent protection and conservation of global biodiversity beyond the human, and offer a portal into the deep time of

ecology. In her article, she discusses the dilemma posed by engaging in activities that raise ecological awareness, yet may also harm the environment (in whatever small way). She asks whether the ethical imperative to make work in ecological ways can be in tension with the need to communicate environmental issues to wider audiences. Artist duo Touchstones' article outlines the ecocentric method they have developed that foregrounds the ethics of making. Miche Fabre Lewin and Flora Gathorne-Hardy coin the term 'sympoiethics', which they define as a practice of making art that emphasizes ecological, ethical interconnectedness. It is central to their collaborations with each other, other beings and their environments.

Where Joe Gray's report discloses a love of insects, I have to confess to an enchantment with the invertebrate phylum Mollusca: molluscs (or mollusks, in its US spelling) – and especially cephalopods and mussels. One project I'm working on with digital research and design consultancy Etic Lab and art collective orphan Drift explores ways octopuses might see the world differently to humans; in another current project, I am adapting a fourteenth century epic poem called 'Pearl' from the perspective of freshwater mussels. I also pay a keen attention to others' artworks about these molluscs (there is far more art about the charismatic octopus, that has eyes and expressions we might interpret, than about mussels, that do not possess faces). Art and design studio Burton Nitta's *Altered Ways of Being* (2019), for example, aims to simulate the experience of being an octopus, as they put it, in the way the octopus brain is infused through its whole body, and in the extension of body and mind, through a series of physical and technological enhancements. They suggest that their 'mind-extension' helmet mimics octopus phenomenology by capturing biometric sensory data – temperature, brain waves from EEG sensors, pulse rate, moisture content – and translating them into a light and colour display. Octopuses and other cephalopods can produce complex displays of colour, pattern and texture on their skin. These displays have evolved to trick the eyes of their vertebrate predators and prey, but they also seem to channel creative responses to their environments.

A central problem for my own doctoral thesis is how to tell stories that account for the agency of these molluscs. My research investigates ways human sensory biases affect our narratives about agency. It is probably not pointing out anything new to readers of *The Ecological Citizen* to observe that human-centred definitions of language and intelligence skew the ways we define agency. Assumptions about agency are often based on human goals and methods of attaining them; but also about what we recognize. As primatologist Frans de Waal and philosopher Eva Meijer both point out, making direct comparisons between different animals' abilities or basing experimental set-ups on human abilities are not the most effective means of understanding other animals' agency (de Waal, 2001; 2016; Meijer, 2019). Echoing Mather's remark (quoted above), Meijer sums up this key point: "We also need to be careful not to use the human as a standard for measuring other animals, because this pre-excludes many of them, and makes it difficult to see them in their own right" (Meijer, 2019: 7).

In a talk given at a conference about octopus aesthetics, Mather (2020) describes how the standard test for animal cognition is the same as the test for human infant cognition: the capacity to recognize themselves in the mirror. Octopuses were long thought to be unintelligent as they repeatedly failed this mirror test. However, as Mather points out, for an animal that has no fixed shape and has eyes set at angles, that neither looks nor moves directly forward, the idea that they would recognize themselves in a mirror does not make sense. She suggests that their self-recognition is much more likely to be related to their highly honed olfactory-chemoreception sense, that enables them to detect a far wider range of smells as well as chemical and pheromonal signatures and traces in the water. Just as an octopus might struggle to pass a human mirror test, humans would fail an octopus 'mirror test' based on chemical recognition. How, then, can we humans even begin to think about what octopus aesthetics might be?

Mimesis, or imitation, is one of the ways we learn and make sense of the world; misapprehensions can stem from misrecognitions. It is easier for us to recognize ourselves in more similar animals: animals with a more familiar perceptual apparatus, who inhabit more similar kinds of environments, and who therefore respond to stimuli in more familiar ways. We look to recognize ourselves in other animals, when we look at them closely. Mathers' warning that "the vertebrate experience is of limited applicability only", for example, is one that is very hard to heed, for artists and scientists alike. Human tests of animal cognition are so often based on human assumptions that they should more accurately be described as testing animals for human cognition.

Although they evolved convergently, octopus eyes have similar structures to those of humans and other vertebrates; however, they focus more like a camera's eye and do not have the rods and cones that enable humans to see in colour. Octopuses produce elaborate colour displays but, counter-intuitively, it is unclear whether they can see the colours they produce for vertebrate eyes. It is easy to make assumptions about their displays being forms of semaphore communication, as they evolve to do in Adrian Tchaikovsky's sci-fi books *Children of Time* (2015) and *Children of Ruin* (2019). Some of their mussel relatives produce elaborate visual lures that stunningly mimic small fishes, which the mussels themselves cannot see at all; they have evolved these lures for the eyes of the larger fish the mussels are trying to attract. The mussels are better visually mimetic artists than humans, without being able to see their displays.

Returning to Mathers' mirror test, and trying to imagine from the sensory perspective of octopuses, we could compare this to the way humans produce complex pheromones to attract potential mates, but are unable to consciously make or read them in the way we can create and read visual signs. My own collaborative project, ISCRI (InterSpecies Communication Research Initiative), is based on research around octopus visual cognition, and premised on the idea of using aesthetic forms – artworks for octopuses. It is not about finding out the answer to the question of whether octopuses see in colour, but about inviting octopuses to communicate with us by responding to the artworks, should they wish to.

Rebecca Burrill's article argues that art is an expression of human aesthetic intelligence that is an innately ecological, nonverbal and reciprocal form of communication. She calls this extra-linguistic communication 'primary languaging', which she defines as embedded forms of gesture, song and dance inherent to communication between babies and mothers as much as between and across other animals, plants and ecosystems. Burrill argues that the sensory resonances, or 'felt resemblances', are 'perceptual metaphors' – and that these are ways we can communicate beyond our species-specific recognitions and languages, because of their dependence on a reciprocity that is deeply embedded and connected through long co-evolution in shared environments. As she says, "aesthetic intelligence is a process of communicating signs that have co-evolved and developed between entity and environment – place-other – from deep time". In the Netflix documentary *My Octopus Teacher* (Ehrlich and Reed, 2020), about a diver's relationship with an octopus, we see a play of reciprocal gestures and touch as octopus and man negotiate each other. An understanding of sorts appears to be reached between these two creatures, so alien to each other – evolved (recently at least) in such different environments – but we cannot know what this understanding might really mean for the octopus.

The interview between artists Joseph Walsh and John Cussans discusses art as a practice of the senses. They talk about performing close observations using all the senses, and being free from taxonomy or the burden of scientific proof. While naming helps us to identify, and to understand, it can also get in the way of understanding when the name or symbol replaces the real thing or animal – when the real thing becomes an abstraction. Cussans asks Walsh about what he's learning from practicing herb meditations. For Walsh, it is a more ecological kind of slow art practice, that nurtures a sense of kinship with other very different kinds of beings. The herbal meditation practice encourages people to ask, "what does this plant want?" rather than "what is this plant?"

For artist and filmmaker Rachael Jones, art can help makers, participants and viewers reconnect to landscapes or environments. She shows how she uses audio-visual materials not just as documentation or fieldwork recordings but to prompt thoughts on how we can connect and engage with the natural world. She aims to restore an idea of landscapes as environments we are immersed in and respond to sensorily, tangibly, rather than being something we look at from afar. She experiments with "what might emerge from working with people *in, through* and *with* nature, and how material approaches can help us to see ourselves as part of the same natural system". She does this by working with human and nonhuman participants, using ecological processes and materials such as plant-derived photographic pigments, and encouraging her human participants to explore their own multi-sensory relationships to local environments.

In short, these articles show ways the arts can help to imagine the world from other, nonhuman and ecological, perspectives; to reveal and question our human linguistic, intellectual and sensory assumptions and biases; and to engage more closely with other beings and environments.

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