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Becoming Buttercups: Fostering Eco-Empathy Through Metaphorical Creative Writing

Elisabeth El Refaie and Christina Thatcher

School of English, Communication and Philosophy, Cardiff University, Cardiff, UK

ABSTRACT

This article critically evaluates the concept of ecological empathy (or "eco-empathy"), reconceptualizing it as creative, embodied thinking that embraces paradoxes between emotion and cognition, body and mind, and the human and non-human. Drawing on cognitive linguistics, social and evolutionary psychology, and phenomenology, we argue that metaphor plays a crucial role in fostering this form of eco-empathy, by bridging emotional and cognitive understanding and facilitating the creation of new conceptual links. These arguments are tested by means of a qualitative case study, involving creative writing workshops, where participants were invited to respond to an eco-art exhibition by projecting themselves imaginatively into one of the exhibited wild plants. The analysis of metaphors used in the resulting poems, and of post-workshop interviews, demonstrated how the creation of novel metaphors led participants to develop a deeper understanding and emotional connection to their chosen plants, as well as encouraging greater engagement with the natural world more generally.

Introduction

Life on earth is under severe threat from climate change and pollution caused by human activity, yet irresponsible environmental behaviors and apathy are still common across the world. In response to this dilemma, several scholars have, in recent years, been promoting ecological empathy (or "eco-empathy"), broadly defined as "the understanding and sharing of the emotional experience, particularly distress, of the natural world" (Tam, 2013, p. 93). There is now a substantial body of evidence to suggest that eco-empathy can be enhanced through a range of interventions, including eco-art education (Asvina et al., 2021), reading animal narratives (Małecki et al., 2019), and viewing pictures of animals or plants in distress (Swim & Bloodhart, 2015). Furthermore, increased eco-empathy levels do, indeed, appear to have a positive impact on pro-environmental attitudes and behaviors (Berenguer, 2007; DiFabio & Kenny, 2021; Villalba-Briones et al., 2021; Wang et al., 2023; Yan & Cortese, 2023), although it is not clear how consistent and long-term any such changes might be (Ienna et al., 2022).

Empathy is considered by some to be the panacea to all kinds of social ills (e.g., Ehrlich & Ornstein, 2010), but others are more skeptical. The dramatist and theater critic Bertolt Brecht (1978), whose legacy can still be felt in much postcolonial theory today, famously railed against what he called "emotional infection," a crude form of empathy that involves the "automatic transfer of emotions" (p. 94) and that stifles critical reasoning about the social and political specificity of all experience. More recently, Paul Bloom (2016) criticized empathy for acting as a spotlight on the here and now, thereby favoring the individual over the many and the present over the future. Furthermore, because we are

CONTACT Elisabeth El Refaie RefaieEE@cardiff.ac.uk School of English, Communication and Philosophy, Cardiff University, John Percival Building, Colum Drive, Cardiff CF10 3EU, UK

instinctively more concerned about our own kin, empathy tends to be biased in favor of people who are like us and prejudiced against those we perceive as "other." If true, this would render the promotion of eco-empathy counterproductive, as it might encourage people to prioritize creatures that have human-like features while ignoring those that do not. This, in turn, risks turning attention away from the urgent need to avoid catastrophic environmental breakdown by making rational decisions for the benefit of all life forms, whether or not they appear to be "like us."

In this article, we defend empathy against these charges, arguing that, if properly understood and promoted, it can be an important tool for increasing engagement with nonhuman life forms and their habitats. Critically evaluating key insights from several disciplines, including cognitive linguistics, social and evolutionary psychology, and phenomenology, we challenge the dichotomy of automatic, pre-reflective emotional response to an individual creature on the one hand, and dispassionate, rational reflection on underlying socio-political structures of environmental destruction on the other. Instead, we conceptualize eco-empathy as a form of creative, embodied thinking that not only acknowledges but celebrates paradoxes between emotion and cognition, body and mind, the particular and the universal, similarity and difference, and the self and the other. Specifically, we argue that metaphor plays an essential role in promoting eco-empathy of this type, due, firstly, to its deeply embodied nature and, secondly, to its potential for creating new conceptual links across different areas of human experience (El Refaie, 2013; Goatly, 2017; Lakoff & Johnson, 1999; Lakoff & Turner, 1989). According to philosopher Ted Cohen (2008), empathy and metaphor are closely related, since "understanding one another involves thinking of oneself as another, and thus the talent for doing this must be related to the talent for thinking of one thing as another" (p. 9). Just like the talent for creativity more generally, the talent for generating new metaphors is not, we suggest, an innate capacity limited to a few gifted individuals, but rather "a common property of virtually all human beings" (Carter, 2016, p. 49), which is shaped by specific socio-cultural contexts and constraints, and which is thus amenable to strategic intervention.

The second part of this article reports the results of a qualitative case study designed to test these arguments. In a series of creative writing workshops in Wales, UK, participants were invited to respond to Seren Stacey's (2023) eco-art exhibition "Braenaru/Fallowing," which documents, through watercolor sketches, the plants appearing in the artist's front yard since she left it to fallow. Our analysis of the resulting creative writing and extracts from post-workshop interviews will demonstrate how participants' creation of poetic metaphors – developed by projecting themselves imaginatively into one of these plants – led them to acquire a new, emotionally inflected understanding of and compassion for the natural world.

This article, then, seeks to make an original *theoretical* contribution by reconceptualizing eco-empathy as creative embodied understanding, capable of transcending conventional distinctions between likeness and un-likeness. With the case study that follows we aim to make an original *empirical* contribution by demonstrating that greater eco-empathy can be fostered through creative writing workshops. The unique combination of two qualitative methods – conceptual metaphor analysis and theoretically informed thematic analysis – to analyze the data is also *methodologically* innovative, especially since most existing empirical eco-empathy studies use quantitative measurements.

Eco-empathy and embodiment

Empathy has been defined and operationalized in many different ways, both across and within disciplines, yet there is a growing consensus that it is a multi-layered construct, with spontaneous emotional "resonance" at its base, and higher levels involving more deliberate cognitive, imaginative, and/or motivational processes (Cuff et al., 2016). Evolutionary psychologists believe that empathy allows individuals to understand the motivations, feelings, and beliefs of others by unconsciously activating their own neural networks relating to similar states (Preston & de Waal, 2002), thereby enabling them to respond in a way that supports both their own survival

and that of their kin. Accordingly, empathic responses can be discerned across many species, albeit to different degrees of complexity. In de Waal's (2008) influential "Russian doll" model of empathy, the inner layer consists of innate, automatic processes of emotional contagion. Building on this is a second layer of "sympathetic concern," which involves a basic appreciation of the other's context and the cause of their emotions. Observable in many mammals, it is exhibited, for example, in comforting behavior directed toward a distressed individual. In humans and a small number of other highly evolved species, this has evolved into a final layer of "empathic perspective taking," involving both self-representation and theory of mind, and is manifested in fine-tuned targeted helping, as when a mother ape responds to a whimpering youngster by using her own body to allow it to clamber from one tree to another (de Waal, 2008, p. 285). Although there are instances of empathic acts across species, it is doubtless easier to match the motor and autonomic responses of another individual if it shares the same bodily features and lived experience.

Phenomenologist philosophers also insist on the centrality of the physical body and its interactions with the environment and with other individuals to the empathic process. Ever since the early 20th century, writers like Max Scheler (1970) have been arguing that we do not need to make a conscious effort to understand another person's psyche by interpreting their behavior and expressions; rather, a person's bodily state is "expressive" of their subjective experience, in the sense that their emotions can be perceived directly by other human beings, without the need for interpretation. Fuchs (2017) uses the term "mutual incorporation" to describe this form of embodied empathy: "In every face-to-face encounter, our bodies are affected by the other's expression, and we experience the kinetics and intensity of his [sic] emotions through our own bodily kinesthesia and sensations" (p. 32). Empathy is thus founded on the largely automatic and pre-reflective, embodied response to the other as a lived body just like one's own, a form of mutual affective resonance that gradually develops from very early childhood onwards, as the infant imitates the bodily expressions of its caregivers and experiences the corresponding feelings that this evokes. Fuchs believes that a more deliberate process of inferring additional knowledge about the other person's situation and imaginative perspective-taking may then be added to this sensory basis, thereby increasing understanding and potentially enhancing empathy. This "extended" empathy also accounts for situations where there is no direct, face-to-face contact, such as when we merely hear or read about another person's plight.

If shared physical experience is, indeed, at the basis of all empathy, as evolutionary psychologists and phenomenologists suggest, eco-empathy becomes more of a challenge, as it requires emotional resonance between individuals with often entirely different bodies. Intuitively, we might thus expect humans to be more ready to empathize with members of their own species than with nonhuman animals, but this is not necessarily the case. In an experimental study that measured university students' perceived similarity with and empathy for a fictional stranger in need, Batson et al. (2005) discovered that the ability to evoke nurturant concern (e.g., when the stranger was described as a child, dog, or puppy) was significantly more highly correlated with empathy than perceived similarity (e.g., another student). This suggests that the value of empathy lies in its ability to encourage selfless behavior toward the "other," although for this to occur, two conditions must be met: "(a) the target must be perceived to have some need for care and protection, and (b) the potential empathizer must value the target's welfare" (p. 24). In other words, if a human or nonhuman being is considered unworthy of our compassion, we are less likely to empathize with them.

It is perhaps not surprising that the nonhuman stranger used in Bateson et al.'s experiment was a dog, rather than, say, a rat, fish, or insect. Figueredo et al. (2022) discovered that people's empathic attitudes toward animals can be best understood as a series of concentric circles around our own species, based on coevolutionary relationships. Thus, the greatest empathy is typically reserved for species considered part of the inner circle of "Kith and Kin," followed by the category of "Domesticated Animals," with "Wild Animals" forming the outer-most circle. People are also apparently more likely to empathize with creatures that exhibit behaviors and social roles that are similar to those of humans, which have recognizable

bodies and faces, most notably eyes, and which are able to show emotion (Young et al., 2018), particularly if they also exhibit "cuteness," thereby appealing to our nurturing instincts (Zickfeld et al., 2018). Plants, which have none of these human-like characteristics, thus appear unlikely candidates for human empathy.

However, the growing body of research into the neurological basis of empathy demonstrates the ability of humans to vastly extend their empathic range and capacity, by tapping into mirroring mechanisms and embodied simulation processes that are automatically activated when we see, hear or read about, or even just imagine another individual's actions and emotional responses (Franklin et al., 2013; Gallese, 2003, 2009). Indeed, Gallese and Wojciehowski (2011, np.) believe that "the fictional worlds of art in general, and of narrative in particular" are "often more powerful than real life in evoking our emotional engagement and empathic involvement." This is because, both as creators/writers and as audience members/readers, our absorption in an aesthetic experience can temporarily liberate us from our ordinary, day-to-day preoccupations with the world around us, which in turn allows us to focus more fully on our imagination and the embodied simulations it elicits. A good example is the way animal and other non-human characters are often able to evoke intense empathic responses in cinema audiences, who may, as a result, experience lasting changes to the way they relate to flesh-and-blood members of that species (Gallese et al., 2020).

In phenomenology, there has also recently been a concerted effort to extend the notion of embodied empathy to non-human life-forms. Both Dillard-Wright (2015) and Hall (2022) suggest that feeling empathy for another species does not require an exhaustive understanding of what they are experiencing, and nor should we simply project our human experiences onto them. Indeed, the presumption that this is even possible "violates the integrity and uniqueness of the Other" (Dillard-Wright, 2015, p. 6). Instead, we must learn to be aware of and attentive to the bodily changes and expressions not just of animals, but also, as Hall (2022) suggests, plants: "Although plant bodies, and the gestures of their bodies, are very different from the human, it is this living body, and this shared existence as living beings, that provides the foundation for empathy between humans and plants" (p. 129). Cianferoni (2019) also believes that the fundamental level of our intercorporeal empathic experience is biocentric. Accordingly, what lies at the basis of all empathic feeling is the recognition of a sentient creature with a "lived" body that can grow, develop, age, fall ill, and die. This expanded notion of empathy would ensure a greater sense of responsibility for nature, and a recognition that "we only survive if the intra-connected community of all lived bodies survives" (p. 258).

Such well-considered empathic responses to nonhuman animals go beyond the form of emotional excess that Brecht termed "crude" empathy. Instead, they can be described as instances of "critical" empathy, defined by Bennett (2005, p. 10) as a "conjunction of affect and critical awareness" that is grounded "not in affinity (*feeling for* another insofar as we can imagine *being* that other) but on a *feeling for* another that entails an encounter with something irreducible and different, often inaccessible." A similar point is made by Sara Ebenreck (1996), who calls for greater appreciation of the contribution of the imagination to environmental ethics. She emphasizes the crucial role of symbol, metaphor, story and myth in fostering a form of "imaginative" empathy that "draws the listener/reader into participatory contact with paradoxical forms of knowing" (p. 11), by combining the "attentive and knowledgeable focus on an animal or other nonhuman being" with "imaginative envisioning of what is experienced from that other's viewpoint, while keeping alive a recognition of the limits of our imaginative knowing" (p. 13).

In sum, although empathy may seem to favor intraspecies solidarity, in fact, human beings have the capacity to go beyond such category boundaries by consciously adopting another's perspective, whatever species they may belong to. In the following section, we focus on the ability of metaphor to cultivate the kind of critical, imaginative empathy that Bennett and Ebenreck advocate, arguing that the fundamentally embodied nature of metaphor, and its ability to not only address but to positively revel in paradoxical meanings, make it an invaluable tool in the promotion of eco-empathy.

The role of creative metaphor in fostering eco-empathy

According to Conceptual Metaphor Theory (CMT), metaphors are fundamental to human understanding because they allow us to use our physical sensations and bodily engagement with the world to grasp more abstract or unfamiliar aspects of life, based on correlations in our everyday experience (Lakoff & Johnson, 1980, 1999). For example, as infants we learn to associate being picked up by a caregiver and acquiring the ability to stand up and walk with contentment and independence, respectively. When feeling physically and mentally well, we are able to resist the force of gravity and assume an upright posture, moving about freely in the world, whereas when unwell or depressed we tend to spend a lot more time curled up in bed. In a fight, the victor typically ends up being on top. Such repeated associative learning experiences form the basis of enduring conceptual metaphors such as "GOOD IS UP," "HEALTH IS UP," "HAPPINESS IS UP," "POWER IS UP," and their respective opposites (Gibbs, 1994, p. 414). Consequently, it feels completely natural and commonsensical to us to express our emotional state in terms of feeling "up" or "down," and to talk about "higher" and "lower" lifeforms, for example (Sternberg, 2017). Another case in point is our tendency to consider life as a journey, due to correspondences in experience between moving from one location to another and the passing of time, which generates highly conventional expressions like "we've reached a crossroads" and "he's approaching the end of his life" (Lakoff & Johnson, 1980). This may make it harder for us to empathize with creatures that are not capable of self-propelled motion, as this seems to be one of the main criteria by which we intuitively distinguish animate from inanimate objects (see Mellmann, 2010, p. 428).

Such entrenched metaphorical expressions are typically used and processed automatically and without much, or indeed any, conscious awareness, yet they have been shown to have a significant framing effect on how we understand and act toward key aspects of the world, including romantic relationships, crime, the economy, illness, and climate change (see Thibodeau et al., 2017). By the same token, the metaphors a particular community habitually uses to conceptualize the human-nature relationship are likely to shape its members' feelings about and behavior toward plants, animals, and their habitats. If we think of the earth merely as a passive "resource" for humans to use, consume, and exploit, for instance, it becomes perfectly normal and acceptable to talk about farmers "producing" meat, eggs, and dairy, without even mentioning the animals involved (Goatly, 2017, p. 55). Indeed, even the word "environment" is problematic, as its meaning of "surroundings" evokes the conceptual metaphor "IMPORTANT IS CENTRAL," thereby suggesting not only that humans are of greater significance than nature but also that they are somehow separate from it (p. 49).

Since human beings cannot manage without metaphors, it is pointless to call for their eradication from all discourses about the natural world. Instead, we should aim to go beyond the uncritical and automatic use of dominant conceptual metaphors by explicitly questioning them, or by introducing new ones that specify existing elements in an unusual way ("elaboration"), include elements that are not normally included ("extension"), or combine two or more established metaphors in unexpected ways (Lakoff & Turner, 1989). It is also possible to breathe new life into an established metaphor, either by expressing it in original verbal or nonverbal formats, or by highlighting a conventional metaphorical expression through repetition or recontextualization, for example (Hidalgo-Downing & Kraljevic Mujic, 2020). Another special type of creative metaphor that abounds in poetry is what CMT scholars call "image metaphor" (Lakoff, 1987), which maps one mental image onto another to create an *ad hoc* and often entirely unique perspective on a particular phenomenon; for example, if falling leaves are described as pages torn from a book. The enormous creative potential of metaphor means that it can help us cultivate a more thoughtful and empathic attitude toward the natural world.

In the mid-20th century, the literary critic Richard Harter Fogle (1949) developed a remarkably prescient theory of how "poetic empathy" works, suggesting that it requires writers to use sensation, intuition, and intellectual reflection to project themselves fully into the contemplated object, be it another human being or nature, animate or inanimate. This, he argued, enables the creation of "motor, kinesthetic, or organic imagery, so powerful in effect as to evoke kindred

impulses in the reader" (p. 149). Accordingly, a "sense of *body* must be present in empathy," involving, both for the poet and the reader, "a kind of sensuous imagination, which bases perception firmly upon our muscular, nervous, and organic processes" (p. 151). What Fogle is, in effect, describing is the use by both poets and their readers of their own perceptual and motor experiences as embodied human beings in order to think and feel themselves into another's perspective. When that "other" is a nonhuman animal or plant, poetic empathy thus inevitably involves a form of anthropomorphic metaphor.

Broadly defined, anthropomorphism refers to "the attribution of human characteristics to nonhuman entities" (Root-Bernstein et al., 2013, pp. 1578–1579), yet in fact the term encompasses a wide range of divergent perspectives, depending on what one considers to be the specific human traits that distinguish us from all other lifeforms. Anthropomorphizing may also take weaker or stronger forms, ranging from using explicit human analogies to explain natural phenomena at one end of the scale, to dressing a pet in baby clothes and pushing it around in a pram, at the other end. In education and the sciences, anthropomorphism is often treated with suspicion, because it is seen to preclude objectivity and cause undue sentimentality (Kallery & Psillos, 2004). By contrast, in the recent conservation literature, it is often lauded as an effective tool to promote empathy for endangered animals and their ecosystems (Tam et al., 2013; Yue et al., 2021). Chan (2012) maintains that, when used for this purpose, anthropomorphism must be supported by rigorous science and should focus on three main parallels between humans and certain animals: "1) high cognitive ability, 2) ability to suffer or experience pain, and 3) prosocial behavior" (p. 1890). Since empathy is known to be facilitated by the perception of similarity, Chan argues, anthropomorphism is likely to be most useful in cases of "non-charismatic" (p. 1891) animals such as hermit crabs, which do not exhibit many obvious human-like characteristics and yet can feel pain, for example. As Root-Bernstein et al. (2013) point out, however, limiting anthropomorphism to intelligent, prosocial, suffering animals in this way risks producing "an anthropocentric, two-tiered conservation agenda" that favors a small number of high-profile animals with particular human-like qualities over all other animal and plant species (p. 1578).

More importantly, we believe that Chan's proposal underestimates the ability of both empathy and metaphor to transcend common conceptualizations of similarity and difference. As we have argued throughout, human empathy is not restricted to those individuals and species we consider to be like us, since we are able to engage our imaginative faculties to adopt another's perspective, however different it may be, and nor is metaphor only about projecting human characteristics and emotions onto other creatures, based on actual or perceived similarities. Rather, both empathy and metaphor are essential tools of creative human emotion and understanding, enabling us to use the lived experience of our own bodies to access concepts, feelings, and perspectives that may otherwise be utterly strange and inaccessible to us. As Weil (2010, p. 15) puts it, if anthropomorphism is to go beyond "a form of narcissistic projection," it must enable us to "open ourselves to touch and be touched by others as fellow subjects" and to "imagine their pain, pleasure, and need in anthropomorphic terms," while acknowledging the fundamental unknowability of their experience. If used appropriately, poetic metaphors of all kinds thus have the potential to dismantle harmful prejudices and to emphasize instead the interconnections between all human and nonhuman lifeforms – what Borkfelt and Stephan (2022) call our "entangled vulnerabilities." The following section uses findings from a creative writing project to show how creating novel metaphors may encourage people to recognize the unique value of even the humblest plant species, thereby fostering eco-empathy.

Case study: creative eco-empathy writing workshops

Study design, data, and methods of analysis

The project, which was led by the second author of this article and approved by the ENCAP Ethics Committee at Cardiff University (230525ENCAP), consisted of a creative writing workshop that was delivered four times at Newton House in Dinefwr Park, Wales. Each workshop lasted two-and-a-half

hours and was attended by between 5 and 11 members of the public. All the subjects provided appropriate informed consent in advance of the workshop. Out of 27 total workshop attendees, 22 had at least some experience of or affinity for writing, while the rest self-identified as being interested in environmentalism or creativity more generally.

In this article, we focus on the main activity, which involved participants responding creatively to Seren Stacey's (2023) eco-art exhibition "Braenaru/Fallowing." This exhibition documented 15 wildflowers and plants that grew in the artist's small front garden between 2020 – when she first left the ground fallow – and 2023, when the exhibition went live. Nine watercolor sketches of these wild species were hung up in the space and six were displayed under glass, like pressed flowers or exotic specimens. The images were accompanied by just the name of the depicted plant in Welsh, English, and Latin; no other information was given. Participants were asked to choose one of the plants that featured in Stacey's watercolor sketches of the wild species growing undisturbed in her front yard, study it closely, and write down everything they could see for two minutes. They were then given the following prompt: "Write a piece from the first-person perspective, as though you were your chosen plant, growing in Stacey's garden now. Think about how you would feel, what you would see, and what it would be like to live as a plant in this place."

At the end of the workshop, 20 of the 27 participants chose to submit their writing for analysis. 11 participants also took part in a voluntary semi-structured interview approximately one month after the workshop, which focused on their responses to the workshop itself, and any changes in their thoughts or behavior they might have experienced since. Though empathy was not addressed explicitly in any of the questions, it came up unprompted in some answers and was then often explored further. For the purposes of this article, we focused our analysis on the seven participants (pseudonyms used) who submitted writing in response to the art exhibition and who also took part in the post-workshop interviews. This facilitated a deeper exploration of the interplay between creative expression, self-reflection, and any potential cognitive or emotional shifts occasioned by the workshop.[1]

Taking a CMT approach (Kövecses, 2010; Lakoff, 1987), we started by analyzing all the metaphors in a particular piece of writing in context, in order to identify thought patterns indicative of the writers' perspective on and feelings toward the natural world. We then assessed the creativity of individual metaphors, both in terms of the underlying conceptual mappings and the particular words used to express these. In a second stage of analysis, the findings from our metaphor analysis were confronted with the participants' own reflections. Using a theoretically informed thematic analysis (Braun & Clarke, 2006) and following Tam's (2013, p. 93) definition of eco-empathy, we examined the interview data for any evidence of increased "understanding and sharing of the emotional experience" of plants, animals, or other aspects of nature.

Analysis

Fogle (1949) suggested that "poetic" empathy requires writers to project themselves fully into another living body, and that is precisely what all seven workshop participants selected for this study did in response to the prompt to write from the perspective of a plant in Seren's yard. By way of example, we will share extracts from their creative work and interviews, which, taken together, demonstrate how embodying their chosen plants led them to increased awareness of the experience of wild plants as sentient beings under threat from human activity.

Creative writing about wild plants

While it is not unusual for people to anthropomorphize plants to some degree, by thinking and talking about their "preferences," or describing them as "happy" or "sad," for example, it is generally only the most attractive, large, or useful plants that are given this kind of focused attention. The plants that

[1]Further qualitative data in the form of audio recordings of the workshop discussions and end-of-workshop surveys were collected and analyzed; these will be discussed in a forthcoming publication.

prompted the creative writing in this workshop are considered by many to be no more than troublesome "weeds," even though many have significant medicinal properties, enhance soil fertility, and support a range of wildlife, as well as having an intrinsic value as unique life forms. By drawing on their own embodied experiences to empathize with their chosen plant's pleasures, needs, and suffering, the workshop participants thus went well beyond the conventional conceptual metaphor "PLANTS ARE HUMANS," extending, elaborating, or combining it with other metaphors, and often coming up with entirely novel ways of expressing these ideas. Many of the creative pieces used sensory imagery to convey what it would be like to be their chosen flower, using visual, auditory, olfactory, gustatory, and tactile metaphors, as well as kinesthetic (motion) imagery. In some cases, the plant was accorded human-like characteristics, memories, hopes, and fears for the future.

Writing from the perspective of his chosen plant, the red clover, Richard described it as pushing out of the soil into the "bright sunlight," tracking the sun with its bud, buckling under the weight of a bee, and being "nibbled" by a slug[2]

I push up and emerge into
the bright sunlight. Breathe
clean air, fighting, competing
for space.
My roots search for
food as my bud slowly grows
turning back and forth to
follow the sun. I bloom
beckoning hungry for insects
to feed, to pollinate me
before my time is done and
I return to the soil.
A bee lands bending my
stem lower. My leaves touch the
ground. A slug nibbles a leaf
then the bee takes off
and I spring erect once more.

What is striking about Richard's poem is the way it associates the space the red clover takes up with the time it spends alive. Since human understanding of time passing is closely bound up with the perception of our goal-directed movement through space, by far the most common metaphors of time across all known languages and cultures are spatial in nature (Lewandowska-Tomaszczyk, 2016). The growth and goal-directed motion of plants ("turning back and forth") occurs on a much slower timescale than that of both humans and many animals, however, making it hard for us to perceive plants as being truly alive. In everyday human perception, the focus of attention is more likely to be on the actions of the bee than on the impact of these on its host plant, for example. By assuming the red clover's spatial and temporal perspective, Richard's poem thus draws attention to its intrinsic value as a living being.

In her poem about the common sorrel, Elena also focuses on the plant's sensory perceptions and reveals a similar concern for the intimate links between space and time:

I wonder what it's going to be
being back again, if I am going
to stay
Returns always have an acrid feeling
bitter even
It's about taking time
not only space
Sometimes growing back

[2]The poems were transcribed and are presented here as they were written originally, including line breaks, capitalization, and punctuation. It is not always possible to determine to what extent these choices were deliberate.:

growing into
growing out

By describing the plant's feelings upon returning to Stacey's garden as "acrid" and "bitter even," Elena is mappings taste sensations onto emotional experiences. Although it is not uncommon for people to describe their own feelings in such terms, in this case, the conceptual metaphors "FEELINGS ARE TASTES" and "PLANTS ARE HUMANS" are combined to create a new idea. The second part of the poem makes explicit how the plant's growth in different dimensions ("back," "into," and "out") takes time, as well as space.

Another participant, Maria, endows her chosen plant, nipplewort, with the ability to experience change over time and to anticipate future events:

I am left to myself as we
all are now. It is a change
to not have to fight, to not
anticipate every touch as a
tearing up. The wind and rain
know how to wound but not
kill. Know how to heal the
wounds they make.

In the opening lines, the plant describes itself as "left to myself as we/all are now," free from human interference. It goes on to highlight how forces of nature, such as wind and rain, may cause wounds but they also possess the power to heal. This reflects the regenerative qualities of nature and contrasts this with the lasting destruction wreaked by humans. Richard, Elena, and Maria thus all show awareness of their chosen plant as a "lived" body that emerges out of the soil, grows, is wounded, destroyed, or deteriorates, and finally returns to the soil. Their poems underscore the interconnectedness of humans and plants, which confirms Cianferoni's (2019) intuition that intercorporeal empathic experience is, at base, biocentric.

In her poem about the creeping buttercup, "I-SPY," Megan goes one step further, attributing to her chosen plant not just an inner life but also a unique, individual character, including a sense of humor:

I stand tall for now
I-spy the cat crap under the bush
Haven't missed that at all
Haughty creature hiding in the house.

Here, Megan is imagining what it would be like for this wildflower to "stand tall," using an expression that incorporates the orientational metaphor "UP IS POWERFUL/PROUD" and thereby suggesting not just a physical but also an attitudinal stance. Describing the cat's mess from the plant's perspective, Megan uses the words "I-spy" rather than "I see," a reference, no doubt, to the guessing game that parents frequently play with their young children. Later in the poem, the plant's offshoots are termed its "babies," which reinforces the idea of the plant as a creature that is emotionally invested in its propagation. However, the buttercup's sense of confidence and pride at having returned to the garden is undercut by the words "for now" at the end of that first line, suggesting that the buttercup is aware of its temporary place in the garden and the threat posed by humans and their pet animals. This is echoed in later lines: "From experience, I may not survive/May be trodden on/Or turfed out." The poem also uses orientational metaphors of "up" and "down" and "inside" and "outside" to convey the plant's sense of occupying a vulnerable position, low down in the hierarchy of living beings from a human perspective (Sternberg, 2017), and on the margins of human affections – certainly in comparison to the cat, the "haughty" creature "hiding in the house," for example.

Many of the other creative pieces written by workshop participants emphasize the invisibility of "weeds" to the human eye, which places them at greater risk of being neglected or actively destroyed. On the other hand, hiding in the shadows of infamous invasive species such as Himalayan balsam, or

of larger, more attractive, but poisonous wildflowers like the foxglove, can afford plants some protection, at least for a while, as suggested in Catrin's creative writing about the bird's-foot-trefoil:

> I have been skulking at the side of the road. Hidden by Himalayan balsam and overshadowed by foxgloves.
> Pushed out of sight by nettles.
> Then came the pneumatic drills, the concrete, the tarmac.
> My seeds took flight, migrating beyond the hedgerows. The wind whispered them to a secret
> spot, calm and untouched by metal.
> Their feet touched down in the garden, imprinted upon the fragile soil.
> Migration over, nestled within an oasis of green.

The central conceptualization underlying the first few lines of this extract represents an elaboration of the conventional conceptual metaphor "(NOT) KNOWING IS (NOT) SEEING" (Kövecses, 2010, p. 256), in the sense that the wildflower is described as evading detection by deliberately keeping out of human sight ("skulking at the side of the road"). This metaphor is, once again, combined with orientational mappings which associate being "down" and "outside" with a lack of power and a sense of exclusion, as conveyed by the expressions "overshadowed by foxgloves" and "pushed out of sight" to describe the plant's situation. By contrast, the construction tools and materials ("the pneumatic drills, the concrete, the tarmac") that destroy the birds foot trefoil's habitat are anthropomorphized and given independent agency ("then came . . . "). They force the plant's seeds to take "flight," and to "migrate" to a place "untouched by metal," before eventually landing in the "fragile" garden soil. Associating anything that flies with birds on the wing is, of course, so conventional that it could be described as trite. However, perhaps inspired by the plant's appearance – and/or its name – Catrin uses an image metaphor with a more unusual focus on the bird's feet touching down and, "migration over," the seeds being "nestled" "within an oasis of green." This suggests a kind of reverence for this plant's ability to thrive amidst human disruption.

Another participant, George, used a similar expanded and elaborated version of the conceptual metaphor "(NOT) KNOWING IS (NOT) SEEING," and gave his chosen plant, the red clover, distinct human qualities. Again, George may have been partly prompted by this plants name – and perhaps by his own political persuasions – to imagine it as a kind of sleeper agent who, while hiding in the shadowy corners, is secretly preparing the ground for a revolution:

> This is the first time
> I've grown in Tycoch.
> A friendly bird
> dropped me as a seed
> into a forgotten part
> of this world
> where everything is ordered.
> The grass is fresh mown.
> The plants sown
> in measured rows.
> I will hide my dark purple cones
> in deep shadows.
> Slowly I will spread
> and colonize the corners
> before anyone knows.
> A botanical Trotsky
> I will change the world.

As in Catrin's poem, a bird features in Richard's creative piece, too, although here it does not represent the plant's seeds directly; rather, it is anthropomorphized as a political sympathizer, who enables this "botanical Trotsky" to colonize the strictly ordered and regimented gardens of Tycoch, a suburban district of Swansea, "before anyone knows."

A gentler and more harmonious relationship between nature and humans is envisioned by Dai in this excerpt from his poem about the bristly oxtongue:

I would whisper
My thanks,
If my voice
Were anything more
Than the caress of the wind
On my fractal form.

Reflecting on the plant's voicelessness, Dai expresses its desire to thank Seren Stacey for allowing it to take root in her yard, while recognizing that this is impossible, noting that the voice of this plant is nothing more than the sound of the wind brushing over its leaves. The poem ends with the bristly oxtongue addressing Stacey directly as "you:" "A silent moment,/ Between you and I/As we enjoy/Our moment in the sun." This portrayal emphasizes the possibility of transcending essential differences and relating to another living creature through the kind of "critical," imaginative empathy with the unfathomable "other" that Bennett (2005) and Ebenreck (1996) advocate.

Interviews

Analysis of the post-workshop interviews revealed strong emotional responses and a newfound appreciation of the great value of all living creatures, however small and insignificant they may appear to the untrained eye. Several workshop attendees reported an increased awareness of the interconnectedness of humans and the fragility of the natural world, and many also felt motivated to become more active in campaigning for better wildlife protection and conservation.

As a former businessman, who identified himself as a prose writer who "never really got into poetry," Richard was surprised by "how quickly" writing poetry enabled him to access thoughts and feelings that he normally preferred to keep locked up:

> And through my life, I've learned to put problems and emotions into boxes. So, if you've got an issue, you put it in a box, you close the lid and you push it over there until you're ready to deal with it. And I think what the poetry actually did was it kind of unlocked a load of boxes. [. . .] It kind of reinforced what I was already feeling, what was already in the boxes, got them out into the open if you like.

People may erect mental barriers to avoid facing difficult emotions relating to climate change and species loss, especially if they feel overwhelmed or powerless. If, as Richard suggests, poetry can "unlock" these previously compartmentalized "boxes," this could, for some people, be the first step toward a more empathetic approach to environmental activism, fueled by a sense of injustice rather than the more debilitating feelings of eco-anxiety or eco-depression (Stanley et al., 2021).

Elena found the act of imaginatively projecting herself into a non-human being "creatively speaking" "very interesting." In her view, there is nothing wrong with anthropomorphizing other beings "if it helps empathy." She explained that this process is "moving," "because it enlarges, you know, moving not only emotionally moving, but actually moving as a dynamic, you know it moves your point of view." This chimes with Fuchs's (2017) notion of "extended" empathy as a way of increasing one's capacity for compassion by consciously imagining what another living creature might be experiencing. It also serves to illustrate our argument that the act of creating poetic metaphors provides a means of breaking down entrenched conceptual boundaries between "us" and "others," "human" and "non-human," and "good" and "bad" forms of nature, for example.

One of the main ways that the workshop seems to have shifted participants' attitudes is by encouraging them to change the focus of their attention. In her interview, Megan spoke about how the workshop helped her be "a bit more careful about what I'm looking at, what I'm reading, how I'm spending my time. It really needs to be more purposeful." She described being more attentive to the natural world as a result:

> Today I sat and watched a spider spin its web. I thought I'd done that before but I don't think I ever had. Yeah, I've just keeping an eye out for things that are a bit more unusual. [. . .] Yeah, it's just being aware of them. How things keep going, don't they? The things just keep going, even though we have done a lot of destruction.

Catrin also felt that "concentrating on Stacey's pictures and then writing a piece from the perspective of the flower" helped her consider the importance of focusing on small details:

> What I gleaned from that was forget about the macro, concentrate on the micro. [. . .] whenever I do feel angry about something that I see on the news or you know, if you're worried about all these pointers that we're getting about what's happening in the world, I just think like, no, I have to think back down.

For others, feeling greater empathy for nature is just the beginning of a process that must eventually lead to practical action. Maria described how projecting herself imaginatively into a plant prompted her to think about "how as poets and as people we can benefit from just putting ourselves really in the place as much as we can of the other beings on the earth that we're impacting with our actions." Although she conceded that, in the short term, this might cause an increase in anxiety, she emphasized that "it's at least the first step, that empathy, having that empathy to move toward action." For George, too, it is clear that his role, and the role of other writers, is to instigate change. In his view, anyone who writes eco-poetry does so with the aim of "changing the perception of the reader" and "making people think again or see something in a slightly different way, you know:"

> The difficulty is getting at the ones who are on the fence or opposed actually. And you won't do that by preaching that. That means sometimes we gotta get something that they can empathize with, if you know what I mean.

Like Maria and George, Dai spoke passionately about how creative writing about nature can lead to concrete action. Describing his work as a "baby bird" that needs to be carried out into the world, he talked about how it can be used to start conversations and raise awareness, which, in turn, might trigger action:

> Awareness is important, you know, it's not the answer, but if a few people just sat down and thought: yeah this is bad, what can we do? Can we write to an MP, can we speak to a local counsellor, can we protest something? Great.

Discussion and conclusion

Eco-empathy, at least in its most basic, automatic form of emotional "resonance," is apparently easier to achieve if the target has recognizably human-like physical and social characteristics (Young et al., 2018). It is much harder for people to empathize with invertebrates or plants, for example, which have very different bodies and ways of living. The main argument developed in this article is that, by inviting people to create novel metaphors about non-human life forms, they can be encouraged to imaginatively embody less obviously appealing life forms, thereby promoting a form of empathy that crosses conceptual boundaries and is both emotional and critical (Bennett, 2005; Ebenreck, 1996).

Our case study findings suggest that creative metaphor-making, which draws on imagination and embodied experience, can lead to new connections being made between humans and the natural world, as well as inspiring individuals to engage with environmental issues in new ways. In particular, the participants' poems depict plants as having inner lives, feelings, and sensations, challenging the conventional view of them as passive organisms. They also explore how plants might experience time, growth, and change, highlighting their intrinsic value as living beings with their own rhythms and timelines. Additionally, the poems illustrate the vulnerability of plants to human interference, while noting their resilience and ability to adapt to challenging environments. The workshop participants were thus engaging in what the poet and environmental activist Helen Moore (2012) calls (RE) CONNECTION, "putting aside the conscious mind" and offering oneself "as a channel through which the Earth's voice and those of other species can be expressed."

This does not imply, however, that workshop participants fell into the trap of the kind of crude, naïve anthropomorphism and "narcissistic projection" that Weil (2010) warns about. Since the two things being compared in a metaphor are always both like and unlike one another, creative metaphor-making seems to encourage greater tolerance for – or even the celebration of – paradoxical ways of thinking about other species. Their interviews make it clear that, while projecting their own embodied experiences onto the plants, the participants always remained respectful of

difference and aware of the fundamental unknowability of other life forms. Several of them described how the act of creating and sharing their poetry enhanced their emotional connection to the natural world, as well as encouraging them to become more attentive to the specificity of all life forms, however small and apparently insignificant. Furthermore, several participants expressed an increased desire to participate in collective climate action, by starting conversations, raising awareness, and playing a more active role in campaigning and conservation. In this sense, the attitude reflected in both the poems and interviews can be described as one of "ecocentrism" (the conviction that nature deserves to be protected for its own sake), rather than "anthropocentrism" (the view that nature only has value insofar as it supports and enhances human life) (Gagnon Thompson & Barton, 1994).

In this study, metaphors were created in response to an artistic visual prompt, and then read out and discussed. Future research might ask what influence the eco-art exhibition may have had on individual participants' responses, depending, for example, on their affinity for the visual arts in general, and Seren's work in particular. Similarly, some participants in this study described themselves as experienced writers, while others did not; it is thus possible that the former made more intentional choices with the metaphors used in their poems than the latter. This raises the question of what impact, if any, the more deliberately crafted, intentional versus the spontaneous, unintentional act of creative metaphor-making may have on eco-empathy. Finally, it is important to remember that eco-empathy is a fundamentally social process, both in the sense that an individual's responses will always be shaped by learned values and expectations about who should rightfully empathize with whom, and in which situations (Ruiz-Junco, 2017), but also because all human creativity, meaning-making, and embodiment is based on collective understanding. Thus, providing a forum for people to share their fears about the looming environmental catastrophe through their poems, and, together, resist powerful vested interests in distracting people from the urgent need for radical socio-economic change, may well turn out to be one of the most significant aspects of our workshops.

In sum, the acts of engaging with visual prompts, imagining the experience of another creature, choosing, and crafting metaphors, and then presenting one's work to others and discussing associated thoughts and feelings may all contribute in different ways and to different degrees to the development of eco-empathy. Future studies might focus on untangling the effects of and potential interplay between these different processes.

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