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RESEARCH-PRACTICE ARTICLE

Shimmering with Deborah Rose: Posthuman theory-making with feminist ecophilosophers and social ecologists

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Abstract

Drawing on a posthuman lens we walk — with Deborah Bird Rose and her conceptual framing of *shimmer*. We explore shimmering as incorporating a sensorial richness, as beauty and grandeur, as constantly in flux, moving between past, future and back again. Shimmering has potentiality in a posthuman context in its encompassing of spiritual and ancestral energies and illumination of the human (settler) story of exceptionalism. By theorising shimmer with this posthuman lens, we acknowledge and honour the eco-ethico consciousness raised by Australian ecophilosophers and ecofeminists such as Deborah Bird Rose and Val Plumwood, and the social ecologists who have continued to walk with them. In order to disrupt anthropocentrism and present a moral wake-up call that glows from dull to brilliance in these precarious times, we bring to environmental education the potential of holding the shimmering past tracings of theory along with us on our journeys.

Keywords: shimmer; Deborah Bird Rose; posthumanism; ecophilosophy; ecofeminism; social ecology; environmental humanities; deep ecology; Anthropocene

Shimmer: An Introduction

Shimmer comes with the new growth, the everything-coming-new process of shininess and health, and the new generations. (Rose, 2017, p. 54)

We are walking through a damaged, mechanistic, concrete landscape. Through the noise of urban pulsations, the voice of Deborah Bird Rose trails, as it speaks to us from past recordings. We breathe in, we breathe out. We find the glare of the white sand blinding as we walk towards the beach, the shimmering glow as light dances on water (Figure 1a–d). We consider Maggie MacLure’s concept of wonder and ‘glowing data’:

We cannot know where wonder resides — not simply ‘in’ the data; but not only ‘in’ us either. As noted at the outset, it is both material (resonating in bodies; indissociably attached to the materiality and the singularity of objects) and virtual — a matter of potentialities and thresholds. (MacLure, 2013, p. 231)

Walking-with Deborah on a February day, her words resonating in us and in our data:



Figure 1. Series of photographs walking-with Deborah Bird Rose.

the extinction cascades, the extinction vortexes' . . . Alongside some sparkling broken glass, pieces of puzzle catch our eyes, strewn across a concrete path, from a puzzle of the globe — fragmented, scattered, shattered — fragmenting ecosystems — cascading extinctions . . . 'not only life and life's shimmer but many of its manifold potentials are eroding. (Rose, 2017, p. 55)

Knotting in with the ideas of Deborah Bird Rose, having just learned of her recent passing, we are ruminating with the Yolngu concept of *bir'yun* (shimmering) as presented by Rose (2017). Rose worked deeply with this concept to highlight and encourage an awareness of the fragile state of our Earth within the Anthropocene, particularly the ever-increasing cascade of the extinction of species.

The term bir'yun [translated from Yolngu as 'brilliant' or 'shimmering'] — which does not distinguish between domains of nature and culture — is characteristic of a lively pulsating world, not a mechanistic one. Bir'yun shows us that the world is not composed of gears and cogs but of multifaceted, multispecies relations and pulses. (Rose, 2017, p. 55)



Figure 2. Series of photographs from concept development workshop of 'Theories of lines, knots and knotting'.

We are drawn to the sense of loss, of grief, of beauty, and of gratitude. Ecological pulses come from and enable new possibilities of the experiences of ancestral power. The pulses of ancestral experience and ancestral aesthetics lure our attention and offer rewards. Our senses are heightened, and we attune to the brilliance.

We started this journey a number of months ago when we first came together at Coogee Beach in New South Wales, Australia. At a shared theoretical workshop, we discussed the possibilities for developing key concepts that would guide our discussions on theory mapping in environmental education. We took a walk along the coast and encountered a deep coming together of ideas. We walked, photographed and mapped our encounters of the urban place (Knight, 2018). Shimmer is one concept that speaks to us from this experience. Visually, when we think of shimmering, we think of the image of light shimmering on water or the deep cosmos of the shimmering stars. We see shimmering as encompassing light, cell vibrations, molecular vibrations, and a potentiality (Figure 2a–d).

By conceptualising shimmer with a posthuman lens, we hope to promote awareness and an understanding of the magnificence of our biosphere but also highlight the destruction and devastation of the consequences of human greed.

Meeting again, both physically and then virtually, we use shimmer with the possibility of connecting the arts with the sciences, in its knotting of a sensorial richness, a beauty and grandeur; this moving beyond dualisms within ontological thinking is also a significant alliance with posthuman thinking (Malone, 2017, 2018). By remembering the lines, knots and knotting (Ingold, 2015)

of different disciplines — arts, sciences, humanities, ecologies — we embrace difference and the intermingling of unlike that leads to shimmer. Looking through both owl eyes and eagle eyes as we gaze at future horizons, we see grief, loss and hope in the Anthropocene. Are we ‘staying with the trouble’ (Haraway, 2016) — being with and holding a multitude of intra-acting phenomena in their theoretical multiple potentials (Barad, 2007)?

In our conversations about the lines, knots and knotting (Ingold, 2015) of shimmer, we describe shimmer as vibrating light, perceived visually but also perceived using other senses, the felt senses of cell vibrations and molecular vibrations in everything on Earth. In shimmer there is a connotation of the possibility of becoming; there is always an energetic flux and constant changeability. We see shimmer as potentiality illustrated by lightning that is comprehensively entwined with the ecobiological world when lightning strikes stimulate fire, an integral part of Australian ecosystems. Lightning reveals all in one flash, but we are not aware of what comes before or what comes after. Living beings and ecosystems are intertwined with both ancestral and future generations. Shimmering thus also encompasses these spiritual and ancestral energies. Shimmering comes into play as the light of life, and the dark of extinction. We honour the lines, knots and knottings of the past as we consider ways of working toward the future (Ingold 2007, 2015).

As we write together, first we weave multiple stories and understandings, inspired and challenged by the concept of shimmer and the work of Deborah Bird Rose. How do we think with shimmer, how does it inform our theoretical understanding of existence? Following on, we analyse theoretical perspectives within environmental education past, present and future, and how shimmerings from the past can guide us through the tumultuous time of the Anthropocene.

Exploring our Shimmering Connections

We are five non-Indigenous women who make our homes in the country of Gumbaynggirr, the lands of the Nyangbal people of the Bundjalung Nation, the lands of the Dharug and Gundagarra people, the Wurundjeri peoples of the Kulin Nation. Three of us are migrants to this continent. This recollection of our lives weaves multiple stories and understandings, inspired and challenged by the concept of shimmer and the work of Deborah Bird Rose. How can we think with Deborah Bird Rose? How can we think with shimmer as a concept that informs our theoretical thinking and mapping? How does shimmer bring into existence old and new traces of theory?

Lisa: I first became entangled with the writings of Deborah Bird Rose whilst undertaking a Master’s Degree in Social Ecology. Her writings were meant to introduce us to the intersection of Indigenous cultures and ecopsychology, but what that particular article did was introduce me to the intersection of Australian Indigenous culture and, well, everything. As an immigrant from a privileged minority world country (the US) to another privileged minority world country (Australia), this opportunity to have my eyes opened to the oldest continuous human culture on the planet was mind-blowing.

The concept of shimmer introduced by Rose deeply resonates with love for the Australian environment and aligns with a posthuman positioning where our interrelationship with the ‘more than human’ is embraced. It draws our attention to the stunning, vibrating pulse of life, and the magnificence of the biosphere. It connects us with everything else past and present and yet also highlights the destruction and devastation occurring as a result of our actions within this Anthropocene epoch. Rose (2017) talks of the shimmer that comes through ancestral power, the shimmer of the Earth, and how our thinking moves back and forth from the spiritual to its expression in the physical, the material ‘is-ness’, of life on earth.

*Marianne: After prolonged drought, highly unusual for the subtropical rainforests in the North-Eastern NSW, the dry soils were wreathing and the leaves of many trees and plants were dull and drooping. This morning the forest came alive, and within a few hours there was transformation with the droplets of rain, shimmering and glistening in the sun. There was a pulsing between the dullness of the old (dry) and the shimmering of the new (wet). The dullness associated with the heat and drought had passed and the forest had reawakened, a renewal, shimmering once again, and it captured my eyes. This rainforest remnant is part of the Big Scrub Rainforest, which was the largest subtropical rainforest in Australia prior to European settlement (Parkes et al., 2012). Aboriginal peoples from the Bundjalung Nation, who are the custodians of this land and have been for thousands of years (Gahan, 2017), embrace the interrelationship of humans with the ‘more than human’ both past and present. This land with deep ancestral connections was decimated by white settlers in the 19th century resulting in less than 1% of this forest remaining as scattered remnants within the Big Scrub Rainforest area (Parkes et al., 2012). These remnants themselves are recognised as critically endangered ecological communities (Parkes et al., 2012), and within these remnants are endangered species both plant and animal, including species of flying fox. I have cared for flying fox babies (the grey flying fox — *Pteropus poliocephalus*) who fell to the forest floor with exhaustion when their mothers failed to return from their visits to local orchards as they had been shot by farmers. These magnificent ancient animals, loved by Rose, are affectionate, intelligent and integral to Australian ecosystems as pollinators and seed dispersal agents. It is with great sadness that we heard of the rising temperatures impacting on flying fox communities in North Queensland, Victoria and South Australia where tens of thousands of flying foxes died from record-breaking temperatures in the Australia summer, 2018 and 2019 (Kim & Stephen, 2018; Field & Gibson, 2019). This is also the summer when Deborah passed.*

In her article ‘Multispecies Knots of Ethical Time’, Rose (2012) reflects on the interplay of life and death, after Margulis and Sagan (2000): ‘Life, therefore, is an extension of itself into new generations and new species. And from an ecological point of view, death is a return. The body returns to bacteria, and bacteria return the body to the living earth’ (Rose, 2012, p.131). How often do we need to hear this message before we, particularly those of us coming from a minority world reductionist, rational tradition, begin to grapple more constructively and creatively with the largeness of this existence? With the idea that the shimmer is bigger than human awareness or capacity to understand it?

Julie: About six years into my time working as an educator at the historical Quarantine Station on Sydney’s North Head — Car-rang-gel salt water country — I noticed that often when I was down by the harbour beach talking to students, a raven would come sit in the tree above my head and loudly utter its drawn-out moaning cries. Sometimes, this would go on for a number of minutes and eventually the students and I would move on. At some point I realised that out of all of the education guides who spoke to students under that tree, this only happened when I spoke. Was it the timbre of my voice? Maybe it didn’t like my American accent? Perhaps it was because I was familiar as I was there every day? I began paying more attention to the raven and our intra-action and began consciously responding to it. I stopped, observed it carefully and spoke to it when I was alone or when the students were also there, all of us looking up at it, listening, waiting for it to become silent before addressing it. In ‘Ravens at Play’, Rose, Cooke and van Dooren (2011) write about a series of encounters with coyotes and ravens on a research trip in Death Valley, California. Evoking Haraway, they elaborate on their experience of the ‘contact zone . . . a region or recognition and response’ (p. 328) with these fellow creatures in this profoundly geologically potent realm at one of the lowest places on the planet. As a native of California who grew up in the desert, the resilient intelligence and presence of the

coyote resides in my psyche as a trickster from Native American cosmologies and a slinking presence just over the fence of my backyard. As a newcomer to the land of Australia, the raven keening above my head at work resonates as an energy which seems to both question my presence and purpose and initiates me into being here. In this, do I begin to approach the inner deep listening — the ‘dadirri’ of which Miriam-Rose Ungunmerr-Baumann (1988) speaks, or ‘elohi’, the all-encompassing intertwining of being in and being from the land which Burkhart (2019) describes? The work of Rose paved the way for my own nomadic experience of learning the land of Australia and developing awareness to its many resilient, wise, creative cultures, while pulling on threads reaching across the Pacific Ocean to my homeland, and the wisdom-keepers, there. It invited the possibility of discovering/rediscovering contact with those nonhuman energies which have informed how I know myself of this earth, and the shimmer of existence.

In exploring the relationship between flying foxes and the pollination and survival of multiple woodland species, Rose describes a symbiotic process of being, decaying and becoming of multi-species intra-actions, asserting: ‘If we were to hold ourselves open to the experience of nonhuman groups, we would see multispecies gifts in this system of sequence, synchrony, connectivity, and mutual benefit’ (2012, p. 136). Rose’s concept of shimmer incorporates Stengers ‘reciprocal capture’ as an ‘event, the production of new immanent modes of existence’ in which neither entity ‘transcends the other or forces the other to bow down’ (Rose, 2017, p. 51). What is the synchrony, the connectivity between flying foxes and eucalypts, or ravens, schoolchildren, and a displaced American? How do we hold ourselves open to the ‘reciprocal capture’ with the nonhuman and what happens when we do?

Bronwen: I was first introduced to Deborah Bird Rose in 2009, while researching for my PhD on ancient rock art frescoes in the Department of Indigenous Studies at Macquarie University. I remember my first vision of Deborah with her long flowing hair and mysticism; her sensitive and insightful writing as well as her physical presence has had a lasting impression on me. My supervisor turned to me and said, ‘Isn’t she just wonderful!’ and encouraged me to write through a similar lens. To me the shimmer is a merging of principles, objects or ideas that interconnect life forces to create something unique. It’s the point where the heavens interrelate with the earth; the sky merges with the sea and where female and male life energies connect.

Before our work together, this author had explored ‘creativity’ through an investigation of diverse traditional rock art frescoes. In art, shimmer is seen as being one with nature, using imagination and focus on the life force, to connect to nature through inspiration and creativity. Similarly, in ancient Chinese philosophy, life’s circulating energy is believed to live in all things (Tan, 2015), and shimmer is seen as the union of ‘Yin-Yang’. Yin represents the feminine in all matter and space, whereas Yang represents masculinity and solidness in all living things. Shimmer becomes the intersection between yin and yang energies, which are not fixed positions, but vibrating life forces.

In the ancient art of Chinese brush painting and calligraphy, the principle of moving energy (life force as breath), known as ‘chi’, is in the four classical treasures of ink, stone, water and brush (van Leeuwen, 2000). Learning how to hold the Chinese bamboo brush when creating art forms is an important skill and once mastered, the artist uses their breath (chi) to gather all of their body’s energy into their forearm before releasing their breath simultaneously with the black ink on absorbent paper. This ancient skill can be traced back to the time of the literati, having been practised through 4000 generations of artists.

In an earlier publication (Wade-Leeuwen, 2013), ‘Bow-Me’ (life force) in Australian Aboriginal Dharug dialect is another example of shimmer as an Indigenous way of being. The author explores how early Aboriginal people breathed through song lines during the creative process of making,

and how early pictographic stone carvings show how the star constellations above captured the shimmer of the skies. Geoffrey Samuels (2011, personal communication), a local Indigenous Elder, shared insights with the students about being on ‘Country’, demonstrating how these combined energy forces from the sky, the land and the sea are not dissimilar to the ancient Chinese concept of yin yang. As part of this research study (Wade-Leeuwen, 2016), 14 local Aboriginal and Torres Strait Islander artists created their own individual artefacts based on the shimmer that comes from being on country.

Karen: In first exploring posthumanism and feminist new materialism, I felt persuaded by the challenge set by Bird Rose and her colleagues to respond, re-configure, re-read and re-present my thinking in order ‘to re-cast human stories within the context of larger synergetic time frames and processes’ (Rose et al., 2012, p. 3). I was deeply moved by her use of shimmer and the Yolngu term bir’yun and how it might bring into ‘light’ past knowledges. Like the ancient waters of the Australian Great Artesian Basin that takes two million years to flow underground from Cape York in Northern of Queensland to Coober Pedy in central Australia, these knowledges often flow in the darkness, along unknown pathways for many years before they move from dark to the light, from the dull to brilliance. She reveals that the light demands more truthful accounts that shift the positioning of humans as exceptional and the Earth merely as body to rape and plunder, extolling ‘a catastrophic assault on the diversity, complexity, abundance and beauty of life’ (Rose, 2017, p. 55). I am touched by the words of van Dooren and Rose (2016) when they speak of the lively ‘relational awakenedness’ that new forms of relational and participatory intra-action can bring to worldly encounters.

Haraway (2016) moves us from the spiritual to the physicality of Earth when she invokes the concept of symbiogenesis in which living things — ‘dynamic organizing processes’ — are ‘looped, braided, outreaching, involuted, and sympoietic’ (p. 61). We understand this to mean there are no firm boundaries between humans, or between humans and ‘more than human’ creatures; rather there is a constant and provocative shimmer of intra-action among our biological constitutions. After all, humans (and ‘more than human’) shimmer with more microbes in their bodies than their own species’ cells (McFall-Ngai, 2017). We are never far from our kindred spirits; the energies that flow form our being with others. And yet the human story is often one of separation, exceptionalism, exemption, as if humans exist like an island somehow outside of the existence of others and the complex ecosystems of the planet.

As Neimanis, Asberg, and Hedren (2015) state: ‘In the context of the Anthropocene, we no longer have the luxury of imagining humanness and culture as distinctly separate from nature, matter, and worldliness’ (p. 68). These understandings are crucial as environmental educators look forward; however, more crucial is the question of how we came to be burdened with some knowledges moving forward but have left some behind. What are the lines, knots, and knotting that shimmer between past theories of environmental education and those we are embracing now?

Shimmering Lines, Knots and Knotting in Social Ecology

During our theory-building workshops we often came back to talk about the influence of social ecology as being a significant shift in the way our knowledges were shared about the human-environment relationship. Social ecology engaged questions of what it meant to be human and to know our humanness through a oneness with the planet. These ways of thinking and learning resonate with current thinking in posthumanist education as proposed by Snaza and Weaver (2014) and other posthumanist environmental educators. But, what knots to pull at, which lines to follow?

One of our authors is a graduate of the Social Ecology program at Western Sydney University (2015–2018), and notes that she does not remember talking much about past legacies of influential theories in environmental education. Even though another of our authors had recently been lecturing in social ecology, she felt there were only very quiet whispers of past theorising, theory shimmering ever so softly on the landscape in the western districts of Sydney. On a cursory foray into this history, we found that in 1938, Milla Alihan referenced social ecology in the title of her book *Social Ecology A Critical Analysis* (Alihan, 1938). In this context, sociologists borrowed from the field of ecology to understand the processes of human behaviour as played out in communities, society or cities, but seemed not to have considered human interaction with/within the processes of the natural environment or larger planetary ecologies. In 1953, avant-garde architect Erwin Gutkind, originally from Berlin and a participant in the Bauhaus school, authored *Community and Environment: A Discourse on Social Ecology*, declaring ‘man and environment are one’ (p. 79). In thinking on how cities were planned and how humans interact with and in them, Gutkind called on a synthesis approach towards ‘wholeness’; to rediscover the ‘I-Thou’ relationship (1964, p. 28) and integrate it with the burgeoning ‘I-It’ tendencies of the modern world. As conceived of by Martin Buber (1937) ‘I-Thou’ is characterised as a mutually adaptive, intimate relationship between man [sic] and nature and all that is. And while much of Gutkind’s thinking focuses on how humans interact with each other, it is the call for synthesis as an agent for social change — ‘all searching and conducted in a spirit of adventure, not shirking the responsibility of exploring hitherto unknown and seemingly unrelated fields’ (Gutkind, 1953, p. 32) — which also opens to ways of knowing beyond the human and brings us into the realm of ‘shimmer’. As Gutkind quotes Tze Chi: ‘It is the height of folly to wear out one’s intellect in an obstinate adherence to the individuality of things, not recognizing the fact that all things are one.’ (Tze Chi, as cited in Gutkind, 1953, p. 79)

As an articulated critical social theory, social ecology is closely identified with the theory work of Murray Bookchin (Hill, 2011). Marxist, then anarchist, then ‘communalist’, Bookchin was an acute observer of human impact on the planetary system and called for a recognition of the unjust, hierarchical relationships in human society as played out in industrialised, capitalist economies. He insisted on focusing on the constructive capacity of decentralised, small-scale communities and systems of production to create a more equitable and healthier existence for the planet and all of its inhabitants (Bookchin, 2002, 2007). Writing about the emergence of the multidisciplinary Social Ecology program at the University of California, Binder, Sokols, and Catalano (1975) suggest that the program sought to work across disciplines to learn through real-world problems in their community, having been born out of the ‘idiosyncrasies of context’ (p. 41) and deeply cognisant of the interplay between the human and nonhuman.

In Australia, social ecology as an area of study grew out of an innovative systems approach to teaching agriculture at Hawkesbury Agriculture College (HAC), which placed experiential learning at the heart of their programs (Macadam & Packham, 1989), with staff and students coming together to ‘learn their way through’ (Bawden & Macadam, 1990, p. 142) by responding holistically, and in community, to real-world problems (Macadam & Packham, 1989, p. 366). Chronicled by Hill in ‘Social Ecology: An Australian Perspective’ (2011), the Agriculture program at the HAC evolved through various permutations to encompass an increasingly cross-disciplinary approach and began attracting a broader range of students. As a result, in 1987, a new program was formed at the University of Western Sydney (now Western Sydney University) as Social Ecology, which fostered an approach to learning founded on the premise of self-knowledge as the starting point for constructive learning with, and meaningful action in, the world. Stuart Hill, Foundation Chair of Social Ecology, framed it as a ‘transdisciplinary metafield’ (Hill, 2011, p. 18), seeking to engage more consciously and constructively with existence as an interdependent planetary system.

Shimmering experiences of social ecology delve into spaces overlapping, the borderlands, the in-between of disciplines and paradigms, simultaneously knotting and unravelling the threads

from so many divergent worldviews. Ecology, biology, systems thinking, cognitive science, environmental sciences, applied philosophy, depth psychology, new economies, sociology, holistic sciences, health studies, critical learning theories, Indigenous ways of knowing, eco-feminism, cultural studies, political science, ancient wisdom traditions, social and environmental activism, embodied and creative arts practices — in the knot of a social ecological approach to making meaning of existence on this planet, these threads are all there. The tangle of disciplines and worldviews have resulted in a flowing, shifting, always changing web of onto-epistemological possibilities (Barad, 2007) for grappling with, living in and consciously being with the complexity (Malone, 2017). So, when Braidotti (2018) advocates for a transdisciplinary humanities approach to our understanding of and response to the complexities of the contemporary world, social ecology provides tendrils of the ways in which these grapplings have existed in the past.

Social ecology, as a theoretical approach to thinking about and learning how humans interact with each other and nonhumans in an interconnected and interdependent planetary system, opens to questions and celebrates emergent understandings. It heralds a systems' awareness (Bateson, 1972; Capra, 1996) and considers how we can 'be' in them. It seeks to hone in on relationships, what is in-between, the connections, and what we might not have words for. It opens to rocks that listen (Povinelli, 1995), and whales that play. It is all that we do and do not know, can and cannot know, should and should not know, and the frustration and freedom therein. It pays attention to raging wildfires in tropical far North Queensland, fish dying around the world in waterways devoid of oxygen, and celebrates when the bees and native creatures do return because someone somewhere has reforested their land or created a nature corridor. It fronts up to and fossicks in the overwhelming, the paralysing grief, and also the wonder and awe. It considers the myriad responses of the planetary dwellers. Its light shimmers in our ideas we are placing it in our greedy bag (Malone, Duhn, & Tesar, 2019) of shimmering theories for environmental education.

Shimmering Lines, Knots and Knotting in Eco-Feminist Philosophy

While grappling with new posthumanist and new materialist theories in environmental education, Malone remembers being drawn to her 1996 doctoral thesis. What intrigues her most is past writings that located the tendrils of ecophilosophy within its lineage. Ecofeminist philosophers such as Val Plumwood and Carolyn Merchant featured widely in the arguments put forward that there was an imperative for humanity (white capitalist settler humans) to change their way of being on the planet. These humans lacked recognition that they were not exceptional creatures, that environmental ethics was an essential link between theory and practice, and that humans needed to translate thought into action, worldviews into movements. The dominant worldview influencing the field of environmental education at the time was an entrenched structure of hegemonic values and processes based on 'human exceptionalism'; the human story of contemporary industrial societies that reinforced separations between ethics and morality. The argument was that environmental educators needed to shift outside of this dominant view and engage with theories that could support a new ecological paradigm, one that could expand human sympathies to include the 'more than human' (Malone, 1996). Environmental ethics was argued as essential to a shift to valuing of, and compassion for, all forms of nature — nature having valid rights that need to be considered. When reading Braidotti's (2013) book *The Posthuman* for the first time there is a realisation that posthumanism is not a new theory, notwithstanding the influence of theorists such as Spinoza, Deleuze and Guattari and postcolonial theorists (Braidotti, 2013). This is also the continuation of the lineage of the ecofeminists, decades before they had already laid the foundations. Their past labours shimmer in our thinking and theorising.

A cosmological dimension, according to Eyerman and Jamison (1991), was the worldview from which a social movement constructed its historical meaning and its utopia. It becomes the

ideology or common belief held by its members (Malone, 1996). In environmentalism and for many environmentalists in the late eighties, environmental education was building momentum as having the potential to be part of the socio-ethico-ecological movement that had been initiated by the work of ecofeminists and ecophilosophers in the sixties and seventies. This was evident in the articulation of a new environmental worldview, an alternative way of viewing nature-society relations. Cosmology served as a translation process and popularised systems ecology to the extent that the process of studying ecology became a discourse in the public arena and was used as a process for social and political action (Eyerman & Jamison 1991; Hays, 1987). It was from the work of Carson (1962), Commoner (1972), Bookchin (1974, 1993) and Goldsmith (1992) that ecology was transformed into a kind of social philosophy, or as Eyerman and Jamison wrote in 1991 (Malone, 1996):

As a break from the old conservatism which separated nature from society and acted on a continued separation — that is what wilderness preservation is all about — the environmental movement presupposed an ecological society, and by presupposing it, by conceptualising it, acted to achieve it. (p. 71)

It was the environmental movement that was providing the space for the science of ‘ecology’ to move beyond the realm of scientific theory and to be considered a way of life in that ‘the movement provided the social context for a new kind of knowledge to be practiced’ (Eyerman & Jamison 1991, p. 73). The new ecological worldview, the utopia, became the glue that bound the members of the movement together; it was a cognitive identity to which all who participated in the movement subscribed (Malone, 1996). Environmentalism and the environmental movement gave rise to a new philosophic discipline devoted to the interrelations between people and nature (Fairweather, 1993). This new philosophy — ‘ecophilosophy’ — was concerned with thinking about nature and our relationship to it. In 1973, Norwegian philosopher Arne Naess began to promote *ecosophy* or *deep ecology* as a comprehensive, integrative academic inquiry (Malone, 1996). Naess (1973) stated:

in so far as ecology movements deserve our attention, they are ecophilosophical rather than ecological. Ecology is a limited science which makes use of scientific methods. Philosophy is the most general forum of debate on fundamentals, descriptive as well as prescriptive, and political philosophy is one of its subsections. By an ecosophy I mean a philosophy of ecological harmony or equilibrium. (p. 99)

According to Mathews (2012), what Naess provided in his 1973 paper was a contrasting of ‘shallow’ and ‘deep’ ecology. Mathews wrote that the ‘shallow ecology’ movement:

was the movement to protect and preserve the natural environment for purely anthropocentric reasons, which is to say for the sake of its utility for humanity. The deep ecology movement, by contrast, was the movement to protect nature for biocentric reasons, which is to say, for nature’s own sake. Stewardship and cooperation might serve as a basis for a shallow ecology movement that sought to preserve natural resources for human benefit. (p. 3)

Shallow ecology, according to Mathews (2012), could not serve as the basis for an environmentalism that valued nature for its own sake: stewardship and cooperation were only compatible with a mere ‘sustainable’ makeover of Earth’s environment, and did not guarantee Indigenous people’s sovereign rights, a maintaining of long-term biodiversity or the slowing down of the extinction of species, all things ecophilosophers (especially ecofeminists) were fighting hard to maintain. These questions of moral consideration for the environment were being strengthened theoretically through the work of a number of intellectuals, including Peter Singer, who was arguing that

any creature that possessed sentience could claim moral consideration. Singer's book *Animal Liberation*, published in 1975, launched a worldwide animal liberation movement, helping to disrupt the stubborn claims of a human-animal divide based on human exceptionalism.

The development of this deeper ecophilosophy, 'deep ecology', required a new sort of science (O'Sullivan, 1987) that reflected values more sympathetic to nature, values that were guided by ethical concerns. Science and ethics (particularly ecological ethics) until this time had been traditionally seen as separate and mostly incompatible. According to Rolston (as cited in Fairweather, 1993), philosophers had considered there to be two sorts of natural laws: 'prescriptive ones from morality and ethics, that take an imperative stance in declaring what ought to be; and descriptive ones used in science and history that are indicative of what is' (p. 6). Ecophilosophers claimed that the separation of these two natural laws provided the opportunity for science and technology to forge ahead in an unchecked 'autonomous force'. What we now come to name as the Anthropocentric force of capitalist agendas have caused havoc on the planet. The dominant scientific paradigm that has continued to persist is one based on the mechanistic science of the 17th century where, as Hobbs (as cited in Merchant, 1992) asserted, 'all people are by nature unfriendly, hostile and violent. In the state of nature, everyone has equal right for everything, for "Nature has given all to all"' (p. 66). Environmental ethics introduced through the environmental paradigm sought to acknowledge the 'right to exist' for all of Earth's entities — a debate that served to counteract this dominant position. According to Merchant at the time (1992), 'Environmental ethics are a link between theory and practice. They translate thought into action, worldviews into movements' (p. 63). Yet, as we have come to see play out over the past 25 years, the dominant worldview, one entrenched in a structure of hegemonic values and processes and based on 'human exceptionalism', has continued to dominate capitalist and corporate agendas.

A new worldview or environmental (ecological) paradigm, advanced by the work of environmentalists (see Catton & Dunlap 1980; Fien, 1993; Gough, 1992; Merchant, 1992), contested these assumptions in what emerged as an opposite position to the dominant worldview. Catton and Dunlap (1980) identified four assumptions underpinning a new environmental (ecological) paradigm:

Humans are exceptional species. However, they still depend upon other life forms for their survival. Human affairs are influenced by social processes. However, they are also influenced by the biophysical environment which often reacts to human activities. The biophysical environment imposes constraints upon human affairs (e.g. human health and survival are possible only under certain environmental conditions). No matter how inventive humans may be, their science and technology cannot repeal ecological principles. Thus, there are limits to the economic growth of human societies. (pp. 17–18)

The basic tenet of this emerging shift in philosophical and theoretical thinking was the expansion of human sympathies to include the 'more than human'. Environmental ethics was a valuing of, and compassion for, all forms of nature — nature had valid rights that needed to be considered. Devall and Sessions (1985) summarised these two positions as an ecological consciousness that was in sharp contrast with the dominant worldview. Ironically (or maybe not so), the (re)emergence of a posthuman ethic that now dominates much of the theorising around the Anthropocene can be seen to have strong tendrils back in time to these early sentiments. Critique, for instance, of the 'children's nature movement', which has been influential in reconfiguring a 'new' nature education (Malone, 2016a, 2016b), have shown that the recent focus in environmental education on children's disconnection to nature is a classic reinvention of Rousseau's 'education of Nature' (Taylor, 2013). This supports a process for redefining one's sense of attachment and connection to a shared world or to enhance an alternative way for knowing and enlivening 'multiple ecologies of belonging' (Malone, 2016b).

Freya Mathews (1999), in her editorial for a special Australian perspectives issue of *Worldviews: Environment, Culture, Nature*, argued during this time there was a deliberate silencing of ecofeminist philosophies and Indigenous perspectives that did 'not share Western fantasies of transcendence' and were conflating the human-nature disconnect, showing that a settler society like ours was deeply and unselfconsciously anthropocentric:

Our anthropocentrism is accordingly ambivalent. Loud and brash as our national persona is, insistently masculinist as our posturings to the wider world are, there is a vulnerable underside to this culture, an introspective and self-doubting subconscious, that is manifest in our habit of understatement, self-deprecation, irony and reticence. We are split between 'transcendence', a conscious commitment to modernity, to the certainties of our European heritage, on the one hand, and a subconscious surrender to the authority of a landscape that patently exceeds us, on the other. (Mathews, 1999)

It was these deeply masculine patriotic settler discourses that marked the critiques and beginnings of a national and international wave of radical ecophilosophy that Val Plumwood helped establish in the early 1970s (Mathews, 1994, 2000). Ecofeminists at this time continued to disrupt normalising views of nature and the means through which Western political tradition subjugated not only nature, but also woman, people of colour, working class peoples and so forth. The lack of moral considerability was the cornerstone for reproducing binaries such as nature/culture, human/animal, mind/body, reason/emotion, spirit/matter, civilised/primitive, theory/practice, science/superstition, mental/manual, white/black, masculine/feminine (Mathews, 2012). This allowed Western civilisation to legitimise domination through anthropocentrism and to construct 'nature' as a moral nullity. The theoretical work taken up by ecophilosophers and ecofeminists at the time was to deconstruct these nature/culture binaries as a key to not only 'liberate' the natural world but to show how binaries worked to marginalise a range of groups within society. This ecofeminist argument was presented by Val Plumwood in her 1993 classic, *Feminism and the Mastery of Nature*. Ariel Salleh joined Plumwood in mounting an ecofeminist critique of deep ecology (Salleh, 1984, 1992), with many ecofeminists accusing deep ecology of a masculine bias. This article and the theoretical work of many feminist posthumanist stands on the shoulders of these woman and argues that posthumanistic and postanthropocentric theoretical approaches provide the ideal realm to consider the 'potential to contest the arrogance of anthropocentrism and the exceptionalism of the humans' (Braidotti, 2013, p. 66).

Realising the shimmer between new and old theories provides space to return to old ways of knowing and for redefining one's sense of attachment and connection to a shared world — or to enhance an alternative way for knowing and enlivening multiple ecologies of belonging. And while there is great sympathy for the 'environmental movement', in particular a Gaian view of deep ecology (with which the child-nature movement and critical environmental education is often clearly aligned), the authors support Braidotti (2018) when she warns that a masculinist deep ecology is potentially a regressive movement reminiscent of these same sentimentalities of the romantic phases of European culture; that is, the Earth deserves the same ethical and political considerations as humans. When applied, this approach 'humanizes the environment' and becomes 'a well-meaning form of anthromorphic normativity being applied to non-human planetary agents' (Braidotti, 2013, p. 85).

From Dull to Brilliance and Back Again

"From dull to brilliant" can be read as an account of ecology: the Earth shimmers' (Rose 2017, p. 54).

The interconnectedness of all things, the entanglement, the assemblages of things and entities have been central to many Indigenous cultures for tens of thousands of years, including Australian Aboriginal and Torres Strait Islander peoples. There is no separation, no binary in Indigenous Australian languages: ‘people and place are all in it together’ (Whitehouse, 2011, p. 296). Deborah Bird Rose, throughout her life, highlighted this ancestral connection held by many Australian Aboriginal peoples, including ancestors of other species (Rose, 1996, 2017). Indigenous and local knowledges are paramount in the way we understand the natural world (Rose et al., 2012). In looking at the theoretical histories of the environmental movement, particularly in the context of Indigenous theories with a focus on Deborah Bird’s Rose concept of shimmer, it seems pertinent to highlight her work in consultation with Aboriginal peoples in Northern Territory regions relating to ‘Indigenous Australian philosophical ecology’ (Rose, 2005, p. 294). She looked at Aboriginal totemism to illustrate the connections between human and more than human as ‘constitutive kindreds’ (p. 295). This construct of totemism (Bennet, 1986; Morton, 1997; Peterson, 1972) relates to the interrelationships and benefits among species, in contrast to the Anthropocentric view that focuses on the benefits of other species to humans. Rose describes these connectivities as being ‘recursive . . . an ecosystem that flourishes through looped and tangled benefits’ (Rose, 2005, p. 298). The Aboriginal peoples of Victoria River recognise the exceptional knowledge among the ‘more than human’ and how species communicate their knowledge to a range of beings including humans; illustrated by the following: ‘When the little finch sings out, the emu lifts its head’ references the coming of cold weather; and ‘When the brolga sings out, the catfish start to move’ references the time when the rivers start to flow again after the first rains’ (Rose, 2005, p. 298).

Rose (2005) aimed to align Plumwood’s ‘Philosophical Animism’ (Rose, 2009) with the philosophies of the Victorian River Australian Aboriginal Elders who were Rose’s teachers. These Aboriginal Elders used the term ‘culture’ as an inclusive term where the ‘more than human’ has, and lives by, culture. With this thinking, the Earth itself has ‘culture and power within it’ and we are all culture creatures (Rose, 2013a, p. 100). The Aboriginal concept of Country is ‘all culture . . . an entangled matrix of multispecies situatedness’ (Rose, 2013a, p. 100). According to Rose there is no nature/culture binary in Aboriginal culture. Country is entwined in the past, present and future. Country is like a system that is ‘self-organising’, mobilising humans and the ‘more than human’ into action (Rose, 2005, p. 303).

Humans enhance their intelligence not by stepping out of the system and trying to control it, but by enmeshing themselves ever more knowledgeably into the creature-languages of country. (Rose, 2013b, p. 104)

Drawing on her conversations with Aboriginal Elders, Rose urges us to pay attention:

It seems that if communication is to occur, people have to learn to understand many, many other creatures, paying attention, for example to the multitude of creature languages — the sounds, smells, and behaviour, the flowering trees, the seasons, and the comings and goings of birds, insects and other creatures, and the silences too. (Rose, 2013b, p. 105)

Aboriginal knowledge and theories provide brilliance and shimmer in the increasing bleakness of the Anthropocene.

Posthumanism, agential realism and assemblage theory are other theories that shimmer. Flourishing underground in the fields of social ecology, ecophilosophy, ecofeminism, and more recently the environmental humanities, they propose possibilities for adopting a new ecological worldview, constructing a shifting environmental paradigm and eco-ethics that has now been predominantly taken up in the theoretical work of posthumanists, although dissecting these theories is beyond the scope of this article. There is now a global intellectual response within a range of

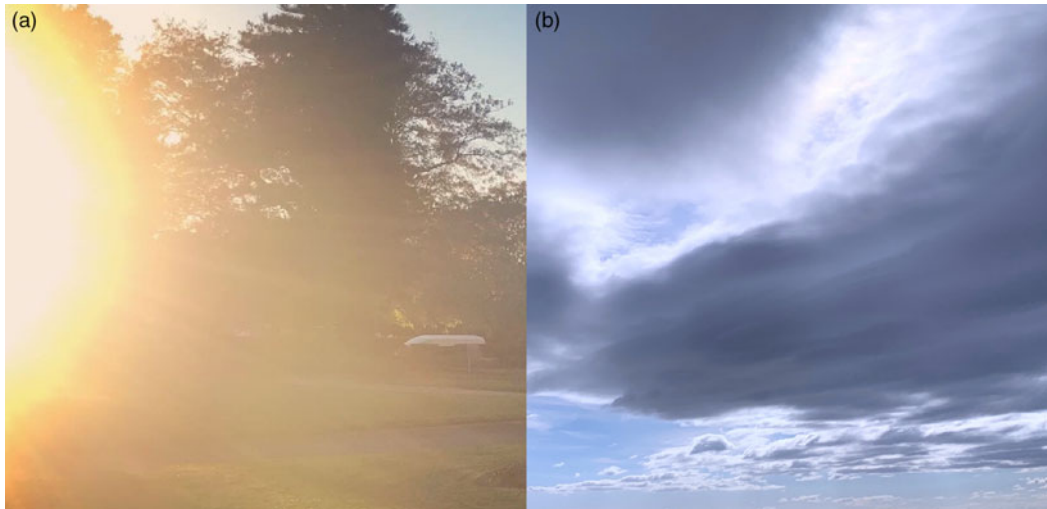


Figure 3. Walking-with and illuminating shimmer in the sensorial beauty of the Earth.

interdisciplinary fields to the clarion call of the Anthropocene. Understanding these shimmerings is to acknowledge and honour the eco-ethico consciousness raised by Australian ecofeminists such as Rose and Plumwood, and the social ecologists who have continued to follow in their footsteps by interrupting anthropocentricism and presenting a moral wake-up call to illuminate the ongoing impacts of an impending ecological crisis.

The seed of all these tendrils, Rachel Carson's (1962) *Silent Spring*, which highlighted the devastation surrounding human activities on the Earth, resonated and influenced profoundly the emerging environmental movements and the emergence of the deep ecology movement (Zimmerman, 2014), where organisms are represented as 'knots in the biospherical net' (Naess, 1973, p. 95). Lovelock's Gaian theory, where the Earth is viewed as a self-regulating system (Lovelock, 2000), appears in the distance, only to be entangled in these starting points and with Indigenous theories. Bookchin (1974), Carson (1962), Lovelock (2000), Naess (1973), Plumwood (1993), Mathews (1994), Merchant (1992), and Rose (1996) entangled pasts and presents, intra-acting, shimmering with Barad (2007) and Bradiotti (2013).

There is no set order or knowledge about what must precede one idea with the next; it is an entanglement of theoretical ideas swirling around in space, many stories told over time, with time, during time, intra-acting through time and space. We come to know them, dance with them, set them aside, only to return to them and wonder why we had not seen their shimmer, their brilliance in the darkness.

As the planet enters the sixth great extinction event in its history, the significance of extinction, particularly animal extinctions, has emerged as a topic of urgent philosophical and ethnographic inquiry, as has been evidenced through the work of Rose (2013a) and many of her colleagues in the environmental humanities: 'The Anthropocene unmakes the idea of the unlimited, autonomous human and calls for a radical reworking of a great deal of what we thought we knew about ourselves' (Rose *et al.*, 2012, p. 3).

In this article we have illuminated the shimmer of past intellectual fervour to demonstrate the time and effort of the ecological struggle; but many, it seems, still fail to heed the warnings that are becoming more apparent as we move through the Anthropocene. As millions of school students around the world strike to demand action on climate change (Watson & Slee, 2019), it seems that economic priorities dominate, and anthropocentric views still prevail. This article attunes and brings attention to the shimmering, sensorial beauty of the Earth and the interconnection of

all things, the energy that is here now, has always been here, and will always be (Figure 3a,b). We explore environmental education theories from our past and present to find those that will challenge, trouble and disrupt, and help us move into a rapidly changing and uncertain future. A posthumanist perspective takes seriously the need to stop the anthropological machine and contests the production of absolute dividing lines between humans and other worldly matter. We, like Deborah Bird Rose, hope that ‘an encounter with shimmer may help us better to notice and care for those around us who are in peril’ (Rose et al., 2012, p. 3) and that includes the Earth itself. We are all a witness to the Anthropocene (Haraway, 1997), and the stories we tell while walking bring a shimmer, a light, a possibility for new ways of thinking.

Storytelling is one of the great arts of witness, and in these difficult times telling lively stories is a deeply committed project, one of engaging with the multitudes of others in their noisy, fleshy living and dying. It is the aim of lively ethnographies to seize our relational imagination. It is an engagement with the joys, passions, desires, and commitments of Earth others, celebrating their éthea in all their extravagant diversity. (Van Dooren & Rose, 2016, p. 94)

We are not letting go of the past but taking the past forward with us into our theoretical work of the present and the future in and with environmental education.

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