

Peer Review Article

Nurturing Transformative Capacities:

An Introduction to the ECOTarot as Method and Practice Supporting Sustainability Transformations

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Abstract

Climate science points to the need for rapid and substantial social change. Such a fundamental social transformation requires new methods, paradigms and practices that address not only structural, technological, and systems change, but attend to the "inner"/subjective dimensions of transformation. In this paper I develop links between models of change in sustainability transformation literature that include "inner" dimensions of change and Climate Focused Socially Engaged Art, a subset of socially engaged art practice that addresses climate disruption. I then introduce a novel social art practice that attends to these inner dimensions: the ECOTarot. Since 2017, I have performed more than 1500 climate future readings with my ECOTarot deck in public settings throughout the United States and internationally. I found that the structure and form of the ECOTarot method catalyzes an intimate exchange where a new climate future story, connected to the seeker's life, is co-produced. By outlining the methods of the ECOTarot and placing them within inside-out transformation research for sustainability, I add to literature that insists upon "messier"

research methods that reflect lived experiences of our world and acknowledge the importance of senses, emotions, belief and imagination in processes of change. By making the links between Sustainability Transformations theory and Climate Focused Socially Engaged Art practice explicit, I encourage further research and investigation into art methods so that they may be leveraged more fully toward sustainability transformations.

Keywords

climate focused socially engaged art; inner transformation; ecotarot; holism; sustainability

Introduction

Climate scientists and scholars increasingly acknowledge that efforts to mitigate and adapt to human-driven climate disruption¹ though necessary, are not sufficient. Rather, the transition ahead of us will also require massive social and cultural transformation (Bentz, O'Brien, et al., 2022; Büchs & Koch, 2019; O'Brien et al., 2021). Defined broadly as a process of structural and systems change, transformation involves “a change of fundamental patterns, elements and interrelations in the system...and fundamental alterations in sense-making, worldviews, political and power relations, social networks, and ecosystems, physical infrastructure and technology respectively” (Feola, 2015, p. 382). Such fundamental social transformation requires new methods, paradigms, epistemologies and practices that address not only structural, technological, and systems change, but attend to the "inner"/subjective dimensions of transformation (Ives et al., 2020; Koenig et al., 2024; Manuel-Navarrete, 2015).

The connectedness of interior, exterior, and spirit worlds have long been made by Indigenous knowledge holders, storytellers, and scholars (Battiste & Henderson, 2021; Cajete & Little Bear, 2000; Goodchild, 2021; Kimmerer, 2013; Nelson, 2017; Nelson & Shilling, 2018; Orlove et al., 2023; Smith, 1999; and others). Furthermore, First Nations, Aboriginal and Indigenous activists and scholars have documented the ways that colonialist and extractivist thinking has separated us as a species; from our connections to land, to our communities, and to our full selves (Liboiron, 2021; Whyte, 2017; Whyte, 2020). Many scholars sharing these knowledge traditions assert that there is a vital need to address and heal this social and personal fragmentation through a transformation of our fundamental values and perspectives, so that we are walking in the embodied knowledge that we ourselves are nature.

¹ These methods to mitigate and adapt include: the development of carbon capture technologies, increased use of renewable energy systems, and supporting new/old methods of planting and harvesting food.

Within sustainability transformation literature, experimental art practices that engage with publics and “arts-based research” have been identified as potentially significant influencers of “deeper realms of leverage” within transformations (Abson et al., 2017; Muhr, 2020; Woiwode et al., 2021). The importance of reflective and relational methodologies and ethical, affective and aesthetic knowledges brought to bear within arts practices is now being called upon to help deepen human-nature connectedness (Ives, 2018; Muhr, 2020; Mullen et al., 2023), and motivate change (Lange, 2018; Wamsler, 2021). At the same time, that calls for embracing and integrating other “forms of being and knowing” (Gram-Hansson et al., 2022; Siquieros, 2022) are increasing within sustainability transformations literature, in the larger solutions-focused field of Sustainability both the arts and Indigenous perspectives are often overlooked, marginalized, or erased. I contend that this is in part due to the perceived “messiness” of approaches that embrace affective, aesthetic, embodied, and experiential knowledges, and their resistance to evaluation through traditional disciplinary tools that insist upon neutrality, value theoretical abstraction, and discount making as a form of thinking.²

In this paper, I develop theoretical and methodological links between sustainability transformation literature, Indigenous Knowledge Systems and Climate Focused Socially Engaged Art (CFSEA), a subset of contemporary art practice addressing climate disruption. As an artist/scholar, I introduce the emergent methodologies of one artistic practice, while making a case for transcending disciplinary strictures in the interest of meeting the complex needs of the challenges before us. This effort resonates deeply with the evolving field of Awareness-based Systems Change with its focus on research practices that embrace all aspects of knowing: cognitive, emotional-relational, embodied, and spiritual-intuitive, and its foundational connection to social arts practices (Koenig et al., 2021).

I begin by considering a proposed model of change drawn from a comprehensive review of sustainability transformations literature (Wamsler et al., 2021). Then, I briefly introduce CFSEA, and offer a case study of a “transdisciplinary, transgressive, and transcendent” (after Vogel & O’Brien, 2022) climate-focused arts practice: the ECOtarot. This process-based creative research practice is a public performance activity that utilizes a custom ecologically themed tarot deck to offer “climate future” readings in a variety of settings. I explore how the ECOtarot, which emerged through a deeply intuitive practice that I have cultivated for more than 40 years, aligns with theories of change and transformation related to sustainability. In this paper, I posit the ECOtarot as an example of sustainability transformation research, analyze components of its method and then situate it alongside other art methods and

² In addition to scientism and epistemic violence/hegemony discussed by other scholars like Kimmerer, 2013 and Whyte, 2017.

practices that enact elements of change and transformation toward sustainability.³ My larger research goal is to elucidate methods of art creation and engagement, to encourage greater leveraging of climate focused arts practices in sustainability spaces.

Values That Inform This Research

I am a desert dweller who has been stewarding a small area of land in the Mojave Desert that was stolen from its original inhabitants, the Cahuilla, Chemehuevi, Serrano and Western Shoshone peoples by the US government and re-distributed through the homesteading process.⁴ Over the decades I have resided here, this arid land has humbled me and taught me many lessons. Over time, I have been invited into ceremony and developed relationships with Indigenous knowledge carriers in Lakota, and California Bear Clan traditions. These connections to the land, beings, and teachings ground and inform my life ways.

In my creative and scholarly research, I am committed to developing anti-colonial practices. I ground these ongoing efforts (Janssen et al., 2018; Jenik, 2018; Jenik, 2019; High, 2024) in an understanding of colonialism as an ongoing force of oppression, not a historical event. As a White settler, my approach to anti-colonial sustainability science includes seeking out accountability through having my work undergo community peer review by Indigenous scholars; acknowledging and citing published Indigenous thinkers; only sharing wisdom that I've been encouraged to share; working in realms that do not solely privilege rational thought, but embrace relational, transcendent, affective, and proprioceptive knowledges; and engaging in an ongoing self-reflexive process. I acknowledge that I can't begin to reconcile the harm that has been and continues to be done in my name as a U.S. citizen, and that this process necessarily reveals many contradictions. I remain open to and inviting of correction as I add my voice to others moving in this direction.

A Proposed Model of Change in Sustainability Literature

In recent decades, and increasing in frequency over the past 20 years, sustainability scientists focused on transformations have turned toward "inner transformations" as an important, and even vital component of social-ecological-technical change related to human-driven climate disruption. Following from their comprehensive review of sustainability related literature (covering 2002–2020) that bridges "inner" and outer transformations, Wamsler et al. (2021, p. 8)

³ I use the terms “practice” and “method” interchangeably throughout this paper.

⁴ The Homestead Act of 1862 began a process of redistribution of land that was responsible for westward expansion in the US, which lasted through 1976.

propose "an integrated model of change that can serve as an agenda and roadmap for future research, practice and policy in the [sustainability] field." They make a strong case for a new research and policy agenda that focuses on the complexity of inner and social dynamics, which they argue are often downplayed or ignored in favor of more instrumental or behavioral approaches to transformation. Their proposed model of change, which emerges from their literature review, focuses on a cluster of "transformative qualities or capacities," including *awareness, connection, insight, purpose and agency* (emphasis mine) that work with intermediating factors (subjective well-being, self-efficacy, cognitive dissonance, and trust) to influence inner states (values, beliefs, emotions, and paradigms). This model of change aligns in an uncanny way with the 5 movements of the U-process introduced by Otto Scharmer: co-initiating, co-sensing, co-inspiring, co-creating and co-evolving (Scharmer, 2018; Seneque et al., 2024), as well as other models of change like the 9 dimensions tool proposed in Vervoort et al. (2024).

Awareness/Co-Initiating

According to Wamsler et al., the capacity of *awareness* can include presence, attention, self-awareness, and self-reflection. I also include "tacit knowledge" and intuition in this category. Tacit knowledge, according to Gibbons (1994) includes unwritten, unspoken, and often hidden knowledges held in practice within communities and individuals. A focus on engaging tacit knowledges in climate communication means that we acknowledge that people's knowledge about climate change, and their decisions about how to think and act in relation to it are shaped by more than climate data and projections or news reports. Authors who discuss the importance of tacit knowledge (Hochachka, 2019; Leichenko et al., 2022; Manuel-Navarrete, 2021) make a case for identifying the frames and values people hold and building processes of change from this standpoint. For Scharmer and other awareness-based systems change practitioners, the concept of co-initiating involves uncovering common intent through listening to oneself, others, and what emerges (Scharmer, 2018; Seneque et al., 2024).

Connection/Co-Sensing

Connection is an important transformational capacity that has been discussed at length in a broad range of sustainability literature. The capacity of connection is also a key ethic underlying many Indigenous Knowledge Systems through the concept of Relationality, and the insistence on a holistic conception of our world where nature and humans are fluid within the whole (Gram-Hanssen et al., 2022; Mullen et al., 2023; Orlove et al., 2023). Bearers of these knowledges (Battista, Goodchild, Henderson, Kimmerer, Krenak, Liboiron, Nelson, Whyte, Wilson, and many others), which have been protected and stewarded through centuries of colonization, have much to teach as we seek to transform our culture to support all beings and entities who find home on planet Earth. Often referred to in sustainability literature as "other ways of being, learning, and knowing"

(Nelson, 2017; Vogel & O'Brien, 2022), Indigenous knowledge systems are distinct across thousands of tribal entities. Scholars are situated and speak from the perspective of their own tribal knowledge systems (which always include place specific language) even as they acknowledge commonalities across these distinct systems that center relationality and connection with land, ourselves, each other, and all beings, over abstract outcomes. Because these knowledges are commonly passed through oral communication over time in relation to a specific place, they have been marginalized within modern academic discourse which focuses on reproduceable and generalizable knowledge, written documentation of evidence, and the distancing of the researching subject from the object of inquiry. These teachings, which have been shared with me in ceremony and through personal relationships and deepened in the course of my engagement with Indigenous scholars, challenge me and other scholars to radically re-think knowledge production as site-specific (not generalizable), collective (not individual), trans-systemic (Battiste & Henderson, 2021) and processual (not outcomes oriented).

In the U-process, co-sensing involves multi-dimensional observation and use of all of our senses. Co-sensing comes about through the opening of the mind, heart and will (Scharmer, 2018). Particularly in relation to the heart dimension, co-sensing reflects the role of affect as a driver for connection. Coinciding with the affective turn in Science and Technology Studies (Kerr & Garforth, 2016), sustainability transformations scholars have been widening their frames of understanding and analysis to include emotions (Hamilton, 2022; Moser, 2020). There is a utility to this attentive shift, as emotions are seen as powerful motivators and de-motivators of action (Moser & Dilling, 2007).

Insight/Co-Inspiring

For Wamsler et al. (2021), *insight* encompasses sense-making and perspective-taking. In the U-process, co-inspiring calls for a "space of silence that allows for emergence" (Seneque et al., 2024, p. 182), making space for insight. These capacities are explicitly called for in Moore et al. (2014; following Olsson et al., 2004) a text that proposes an analytical framework for understanding deliberate social-ecological transformations. Here they offer four phases of system transformation: triggers or pre-transformation; preparing for change; navigating the transition; and institutionalizing the new trajectory. In the Moore et al. (2014) text, preparing for change involves sense-making, visioning, and gathering momentum. Speculative and imaginative activities are included in this category, as well as processes that enable the "emergent future whole" (Scharmer, 2018).

Purpose and Agency/Co-creating and Co-evolving

Finally, *purpose* and *agency* involve the activation and reflection of one's values and intentions, a future orientation (purpose), and the co-creation of meaning

and action-taking (agency). A growing number of researchers insist upon the importance of co-production of knowledges within research settings, with an eye to this type of research having a greater impact on sustainability outcomes (Norstrom et al., 2020; Seneque et al., 2024). Co-creating and co-evolving research practices are not only processes of producing new knowledge, rather these processes force a re-thinking of how knowledge is created and used in the pursuit of sustainability (Abson et al., 2017). Because of this, the process also creates conditions that support emergence of new paradigms and possibilities where one does not only encounter ones' research subject but is also encountered by them and transformed in the process (Koenig et al., 2024; Wamsler et al., 2021).

Art and Transformation

Encountering Wamsler et al.'s proposed model of sustainability transformations research and the U-Process as an artist/scholar, I immediately recognized core tenets of my art practice and the subfield of CFSEA. Since Wamsler et al. (2021, p. 8) lament that little is written about interventions and enabling environments that support transformational capacities and call for developing environments that nourish a sense of interconnection, I became curious about the relative absence of arts-related publications in the literature cited in their comprehensive review (with only 3% of articles coming from philosophy and the arts). Furthermore, in sustainability literature that takes up the arts, authors are often focused on "arts-related research practices" or arts education programming, not on contemporary art practices.⁵ By introducing the category of CFSEA and the methods and practice of the ECOTarot, I invite deeper understanding of how contemporary art practices contribute to "inner" transformations toward sustainability.

Climate Focused Socially Engaged Art (CFSEA)

I use CFSEA to describe a subset of work by Socially Engaged artists that addresses and is motivated by human-driven climate disruption. Socially Engaged Art is an area of contemporary art production that traces its roots to Community-based Arts, Participatory Art, and Relational Aesthetics. It finds its recent (Western) history in the early 20th century with art movements such as Dada, the Situationists International, and Fluxus, and is generally understood to be grounded in experimentation, responsive to political realities, and engaged directly with publics, often beyond the walls of institutions (Apostol & Thompson,

⁵ I am referring here to omissions within literature in the field of sustainability.

Environmental humanities scholars, art historians, art theorists and artists themselves have been writing about contemporary arts practices that engage with sustainability for some time (see Bloom, 2022; Demos, 2016; Boetzkes, 2019; Gomez-Barris, 2017; among others).

2020; Bishop, 2023; Kester, 2013). Many globally situated feminist artists in the 1960s, 70s, and 80s, were purposefully questioning frameworks of power and understood the need to reach beyond the artworld in order to develop awareness and encourage action around a broad range of social issues including violence against women, the US war machine, and environmental issues (Lacy et al., 2010; Lippard, 1997). These socially engaged artists (many of them women and feminists) have been working consistently on environmental issues since that time and are now joined by a large and growing set of CFSEA practitioners. Many CFSEA practitioners, including myself, have shifted their practices in recent years toward addressing climate issues, acknowledging the critical need to help usher in just social and cultural transformations.

Examples of CFSEA work include: *High Water Line* (Eve Mosher, 2007–present) “a public performance of drawing a blue chalk line around areas of a city or region indicating its future flood and storm surge vulnerabilities made more frequent and more dangerous by climate change” (Mosher, n.d.); *Swale* (Mary Mattingly, 2017-present) “an experiential and co-educational edible landscape built on a deck barge that utilizes marine common law in order to circumvent local public land laws” (Mattingly, n.d.); and *Making the Best of It: Dandelions* (2016–17, Marina Zurkow and Valentine Cadieux) where the artists led participants to explore “what it might mean to ‘make the best of it’ (‘it’ being climate change), using dandelions to think through eating differently, nimbly, with sadness, resilience, and even joy” (Zurkow, n.d.).⁶

To follow, I introduce the ECOTarot, an example of CFSEA in action, and discuss the elements of its method in relation to Wamsler et al.'s proposed model of change emerging from "inner" transformations in sustainability literature. I do this to more firmly locate artistic practices that have developed separately from these theories and dialogues as significant partners in "inner" transformations for sustainability.

The ECOTarot Practice

The ECOTarot is a novel social art activity that I began developing in 2014 and have since evolved and iterated in public sites throughout the US and internationally.⁷ During the past decade, I have come to understand the

⁶ It is important to note that in addition to these more recent examples of socially engaged art practices related to climate disruption, there is a rich legacy of artists who have been working in ecological and environmental art for decades (including Newton and Helen Harrison, Betsy Damon, Kim Abeles, Beverly Naidus, Carolina Caycedo, Basia Irland, Emily Johnson, Agnes Denes, and the hundreds of artist members of ecoartspace and the ecoart network).

⁷ Public venues include farmers' markets, public plazas, parks, pedestrian thoroughfares, cultural centers and galleries in Los Angeles, Joshua Tree, San Diego, Oakland and Berkeley, CA; Dallas, TX; NY, NY; Phoenix, Tucson, and Oracle, AZ; Akron, OH; Philadelphia, PA; Detroit, MI; Atlanta, GA; Abiquiu, NM; Scotland; Finland; Iceland; Chile; Mexico; Portugal; Canada; online.

ECOTarot as an art practice, a speculative exchange, a public performance, a collective improvisation, a tool for addressing ecological grief (Cunsulo, 2017; Norgaard, 2011), a novel climate communication method, a contemplative pedagogy (Gram-Hansson et al., 2022), a cultural probe (Gaver et al., 2004), an innovative data elicitation tool, a platform for enacting “right relations” (Goodchild, 2021; Gram-Hansson et al., 2022), a transformation system (Seneque et al., 2024), and a research technique for intervening in climate science discourse. Though the scope of this paper does not allow for a complete elucidation of each of these aspects of the ECOTarot, I enumerate them to acknowledge the expansive potentials and possibilities embedded in a single arts practice.

Below I discuss the components of the ECOTarot method: the deck, the spreads, and the reading, and consider the ways that each methodological component nurtures the transformational qualities and capacities called for in sustainability transformation literature as outlined in Wamsler et al. (2021).

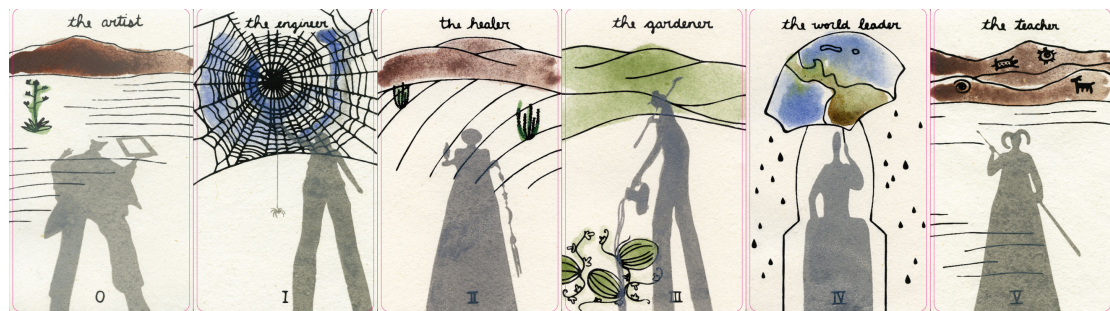


Figure 1: Images of a selection of ECOTarot Major Arcana cards.

The ECOTarot Deck

The ECOTarot deck serves as a boundary object, attracting the interest of people from many backgrounds and bridging art, climate science, spirituality, and futurity.⁸ The tarot, for those unfamiliar, is a cultural form, now often associated with esoteric and occult practices, that is traced to 15th century Italy. Over the centuries that followed its introduction, the cards’ imagery and uses evolved as they travelled, reflecting the culture, symbols and practices of each new context (Genetti, 1997; Pollack, 2009). The use extended beyond a card game, *tarocchi*, to fortune-telling and mediumship when taken up by Romani people who spread the practice as they migrated (Chaudhuri & Ward, 2025).

Traditionally, the structure of the tarot is comprised of 78 cards organized into major arcana (archetypal symbols) and minor arcana (numbered suits in

⁸ A term used in a number of fields to indicate a concept or thing that people from many different perspectives and disciplines feel they understand and can make use of (Leeds-Hurwitz, 2014).

ascending order). The most well-known deck of the 20th century, the Smith-Rider-Waite deck, is what I refer to throughout this text as the "standard tarot" because of its overwhelming popularity in contemporary culture. Though the Smith-Rider-Waite deck is familiar to many, the practice of creating new decks and performing readings was taken up by artists and esoteric practitioners throughout the 19th and 20th centuries and has veritably exploded in the 21st century (Smith, 2024; Tea, 2017; Umipig, 2018). Other writers have addressed the reasons for this phenomenon (Montell, 2024; Tea, 2017; Tideliu, 2024), but here it is important to note that what may once have been seen as a fringe practice has entered mainstream cultural consciousness in recent years. Coming from a lineage of tarot practice (my mother was a professional psychic), I understood the tarot as a guidance system used to navigate uncertainty and imagined it could be useful in our contemporary climate context.

The symbols on the ECOTarot cards (see Figure 1) emerged through a research process (conducted in dialogue with climate scientists) that evolved the popular vernacular knowledge system of the tarot by placing it in relation to climate science and ecological value systems and archetypes. Though the deck exists as a work of art in and of itself, it was created as a platform with which to perform "climate future readings" in public spaces. A note about its materiality: the ECOTarot deck was developed and produced over the course of two years (2015–2017) by me, with the support of artist Molly Koehn. Each of the 78 ECOTarot cards is screen-printed on paper handcrafted from locally harvested agave plants, recycled cotton, and linen and then hand painted with natural pigments. This materiality is important as the feel of the deck grounds the querents⁹ in their bodies, and traces of these bodies are imprinted on the cards as they are passed from one set of hands to another.

The process of creating the ECOTarot deck began with the re-conception of most of the 22 major arcana cards to reflect our current climate challenges. I wanted the readings to be recognizably related to environmental issues in ways that many of the original archetypes are not. Over the course of several months, I worked with a dynamic grid I created on my art studio wall that reflected traditional meanings and interpretations of the tarot, and a series of important "actors" and values related to our unfolding climate futures. During the time I took to focus in, step back, and iterate, the major arcana archetypes of the ECOTarot took shape. These archetypal symbols aid in sense-making and envisioning processes (Moore et al., 2014) that are part of the nurturing *awareness*, even as they serve as portals to the unconscious (Robertson, 1987) and so they needed to be recognizable to a broad demographic of people (see Table 1 for a selection of these symbolic and interpretive transpositions). Concurrent with this period gestating the ECOTarot symbols, I sketched out designs while Koehn was learning papermaking techniques. The final imagery on

⁹ Querants are people receiving tarot readings.

the major arcana cards consists of line drawn illustrations featuring shadow figures in various poses, and recurring motifs reflecting desert ecology (see Figure 1 for examples of this imagery). I chose desert ecology and shadows (caused by the sun's brightness) to "place" the imagery in my specific locale, acknowledging the importance of place and land in the formation of knowledge (Liboiron, 2021; Nelson & Shilling, 2018).

Std. Tarot Symbol	ECOTarot symbol	Std. Tarot interpretation	ECOTarot interpretation
The Fool	The Artist	infinite possibilities and potential; leap of faith	experimentation, Creativity, resourcefulness
The Magician	The Engineer	using past experiences to create a new future	intention and will; ability to manifest large plan
The High Priestess	The Healer	intuition, spiritual insight	balance with natural cycles; inner wisdom, spiritual prowess
The Empress	The Gardener	divine femininity; receptive, nurturing	fecundity; fertility; prepared and focused on growth
The Emperor	The World Leader	divine masculinity; security, ambition, power	power, authority, successful management, stability
The Hierophant	The Teacher	religion, higher education or learning; guidance	earth as teacher, considering long-term impact
The Chariot	The Bicycle	forward momentum and movement	self-discipline, momentum, austerity
Justice	Justice	fairness, responsibility, law and order	climate justice; fairness and accountability
The Wheel of Fortune	The Life Cycle	destiny, fate, aligning with higher purpose	values interdependence; downstream thinking
Death	Extinction	signals an ending that can't be avoided; catalyst for change	tipping point' threshold event; profound cultural transformation
The Devil	The Profiteer	hedonism, addiction, greed, subconscious	greenwashing; disaster capitalism, short-sighted solutions
The Tower	The Superstorm	breaking down old patterns and belief systems	reckoning; event that forces change; truth teller
Ace of Cups	Ace of Water	new beginnings in love, romance	we are water, water is life; new honoring of sacred power of water
V of Cups	V of Water	grief, sorrow, loss	loss of sea ice; coral bleaching

IV of Pentacles	IV of Earth	financial stability and solvency	small scale and organic farming; tradition
VIII of Pentacles	VIII of Earth	hard work, apprenticeship, work is main focus	extreme extraction
III of Swords	III of Air	heartbreak, despair, pain, poor health	increased frequency and intensity of atmospheric rivers and microbursts
VII of Swords	VII of Air	deception, lying, manipulation	airpocalypse
VI of Wands	VI of Fire	courage, negotiation, high-stakes situations	new battery technologies/ increased storage for renewables
IX of Wands	IX of Fire	roadblocks, sickness or injury; delays	fatal global heat wave
Page of Cups	la poeta del agua	good news afoot; romantic messages	Rachel Carson, writer
Knight of Pentacles	la guerrera de la tierra	patience, slow forward movement in right direction	Berta Cáceres, Lencan activist
Queen of Swords	la guía del viento	authoritative figure, cuts straight to the point	Alexandria Ocasio-Cortez, US congress
King of Wands	la jefa del fuego	person of importance, success, change	Margo Robbins (Yurok), fire steward

Table 1: Examples of the standard tarot and ECOtarot symbols and interpretations.

Furthermore, foregrounding *connection* with the land, the 40 minor arcana ECOtarot cards (Ace through 10 in each of four suits), reflect the four elements: Air, Earth, Water and Fire which stand in for the standard tarot suits of Swords, Pentacles, Cups, and Wands respectively. This transposition made sense because one common layer of tarot interpretation refers to the elements and the conditions (cognitive, embodied, affective, and transcendent) each element represents. The minor arcana card imagery is comprised of simple line drawings that feature multiple instances of windmills (air), crystal formations (earth), a river and its deltas (water), and the rings of the sun (fire) that reflect their assigned number. This pared down imagery, compared with other tarot decks, embraces simplicity, discipline and restraint; values I have found are important when enacting one's responsibility to land and community.

In the ECOtarot, the sixteen court cards, represented in the standard tarot as pages, knights, queens, and kings, become *las poetas* (the poets), *las guerreras* (the warriors), *las guías* (the guides) and *las jefas* (the chiefs), respectively. I utilize Spanish text to acknowledge the existence of multiple languages and worldviews and to situate the deck in the context of the Americas, where it emerged. In a tarot reading, the court cards may be interpreted to represent oneself or a "type of person" and in the ECOtarot an additional layer of

interpretation assigns each of these cards to an ecological heroine. For example, *la jefa del fuego* (the leader of fire) is aligned with Margo Robbins (Yurok) founding leader of the Cultural Fire Management Council, a group that works to (re)introduce Indigenous ways of tending the earth with fire. In this way, I call attention to those who have been undertaking transformational practices. The overall aesthetic treatment of the deck, with its materiality, symbolism, and a palette that evokes the natural world, awakens the querent's senses, offering a heightened experience.

ECOTarot Spread/s

In tarot reading protocol, the “spread” refers to the order and structure of a reading. Readings may include any number of cards, which are then interpreted in relation to the meaning embedded in each card's position. Thus, each reading results in a layered narrative that emerges through overlapping symbolic and associative systems read in relation to one another. For the ECOTarot practice, I developed several custom spreads: a two-card spread (the simplest and briefest reading); a five-card spread, and an eight-card spread (offered only by appointment to people already engaged with environmental issues). Creating the spreads involved continuous iteration, as well as pulling from my experience as an innovator of narrative and performative systems (Balsamo, 2016; Curran, 1999; Jenik, 2001; Jenik, 2016).

An example of the way this structuring works: the ECOTarot two-card spread finds the cards divided by the querent into two piles; the first card drawn from the left represents what will unfold in the larger world related to climate change in the arc of the querent's lifetime. The second card drawn from the pile on the right then represents a role for the querent, or a helper card to assist them in navigating the world invoked in the first card.

Meanings of the ECOTarot cards, as with all tarot, are not fixed or absolute; they evolve in conversation with the querent, and aggregate meanings as each new card is revealed within the context (spread) of the reading. Interpretations emerge in relation to the position the card falls, both in the spread and in relation to the other cards in the spread. Additional layers of meaning may include whether a card is drawn right-side up or reversed; the frequency of a type of card that appears in the spread (minor arcana, major arcana, or court card); and the directionality of the figures pictured in each ECOTarot card's illustrations (i.e. where they are facing or pointing). As many different interpretations are possible, in the end, it is the querent who makes meaning from the placed cards, a true co-production of knowledge.

ECOTarot Readings

An ECOTarot reading is, at its core, a relational experience. It positions the reader and the querent in the same space of uncertainty, unknowing, and yet possessed of all the knowledge, experience, beliefs, emotional capacity, and

creativity that we carry as humans through our everyday existence. We, the reader and the querent, are both facing a shared climate future, and are witnesses to each other's understanding of what that means. For some querents, just offering a contemplative space to face human-driven climate disruption together brings tears and other strong emotions to the surface. The ECOTarot taps into emotions, experiences, and identities neglected by reductive scientific processes. It has been argued that these "inner" dimensions are exactly what is needed to tap into *purpose* and *agency* and motivate action (Moser & Dilling, 2007; Vervoort et al., 2024; Wamsler et al., 2021).

Each ECOTarot reading begins with an exchange of names and a brief introduction to my approach to tarot. Querents are then invited to shuffle the cards "in any way you want for as long as you want" and imbue the cards with their thoughts and feelings surrounding the changes happening in our world. While they handle the cards, I circle the mesa, them, and myself in smoke from sustainably sourced palo santo wood.¹⁰ This portion of the reading resembles a "traditional" tarot reading with the exception that the querents in an ECOTarot reading are not asking a question about their love life, health, fame, or fortune; an ECOTarot reading presumes that everyone is asking about their climate future, or what will unfold in their lives in relation to the changes going on in our world. In the brief pre-ambles to the reading, ECOTarot querents are encouraged to share associations and resonances they bring to the cards which add to interpretations I have evolved over my years of practice. It is within this interpersonal exchange that their co-created "climate future" story emerges.

An Example of an ECOTarot Reading

To illustrate my assertion of the ECOTarot as a system for nurturing transformational capacities, I offer a brief recount of a recent ECOTarot reading with K (see Figure 2). The reading is conducted in person, in public on an outdoor patio of a coffee shop. Storm clouds loom overhead as we settle in; they choose which spread they want, I offer my preamble, they shuffle the cards, and I place five cards face down on the cloth-laden table. Before turning over the first card I

¹⁰ We have been asked by our Indigenous relatives to cease the use of sage, palo santo wood, and other sacred medicine plants unless we have grown them ourselves, been gifted them by Indigenous practitioners or are assured that they have been harvested in alignment with sacred harvesting techniques. See the film *Saging the World* (Ramirez et al., 2022) that tells the story of the Indigenous-led efforts to protect white sage.

share the meaning of the position of the north¹¹—what they know about what is unfolding in our world—then turn over the card: the IV of earth. The earth cards, I explain, are related to all the magic and mystery of life potential we find on the earth. I expound upon this and then relate that this specific card represents traditional methods and approaches to agriculture. A conversation begins as K shares with me the deep knowledges they are stewarding and enacting around agriculture and food systems. The tone of the reading shifts from one of fear and uncertainty (that they express they have been feeling lately), to one of reverence of all they know about the abundance of the earth. It's an exciting and fortifying exchange, where I learn of their commitment to traditional foodways as they share how much they have benefitted from being in relation with the land and those who have stewarded these practices over time. After they finish speaking, I ask to move on, and remind them that the cards exist in relation to each other, so we will be revisiting this first card later.

I turn to the second card and share that it is in the position of the south, which in the five card ECOTarot reading represents the seat of the self, and emotions around climate impacts; how they are feeling about what is unfolding. The second card is turned over to reveal *la poeta del viento* (the poet of the wind or air), in a reversed position. I discuss the meaning of the air cards in an upright position—depending on where they fall and which card appears, they relate to the shift from fossil fuels to renewables, air quality, and thought or social dynamics (like the swords in the standard tarot). This is a card of communication—*la poeta* is the poet, the artist, the musician, the storyteller—but it is reversed, which indicates, in this position, some negative emotions. I relate my interpretation of frustration, fear, over-thinking, occluded vision, along with trouble speaking or communicating. K speaks very tenderly about how they have been feeling lately, finding themselves not making sense and feeling confused. I listen intently, holding space for all that is being shared.

We move on to the third card, in the position of the west, and I share that this position relates to the physical and practical; how their environment is affecting them at this time. The X of fire appears; a very intense looking card completely filled with orange fire rings of the sun. I share some interpretations of this suit: an increase in wildfires and the climate heating up, but also that these fire cards reference creativity and innovation (like the wands suit), with the X card indicating the end of a cycle, transcendent completion. K shares about the crossroads in which they find themselves, the feeling of shedding things and

¹¹ The five-card spread is laid out in relation to the cardinal directions (N, S, W, E) with a center card indicating the querents' "climate future." The meanings of each position (What one knows about what is happening with our climate, what one feels about what is happening, how the changing climate is impacting one's life at this moment, a new perspective on the changing climate) are drawn from cultural associations in North America that have evolved within esoteric practices and align with Indigenous teachings of the medicine wheel (McKinney, 2023; Nelson, 2017; Paul, 2023) that have been shared broadly with the larger culture.

leaving them behind for good that is happening in their life. They share their understanding of fire as both a destructive, but also a regenerative force, and their feeling that they will be leaving a lot behind in this next step they are taking. I underline that the card indicates this is a creative time and encourage them to step into their creativity to help guide them further into whatever is next. This is the first I have heard about this being a time where they feel a need to make an important life choice, so I hold that piece of information with care.

The fourth card is in the position of the east, the new day, and in the ECOtarot this represents a "new perspective" that K could consider as they move through this time and into their climate future (represented by the center card). *La jefa del viento* (chief of the wind or air) appears when I turn over the card. This offers an opportunity to talk about leadership, as the card is asking them to consider stepping into a position of authority. What follows is a heartfelt recounting of the ways they have resisted leadership in the past, and how they are feeling pulled by it now. We talk about what developing a new perspective on leadership would entail, and what type of leaders are needed in our world. K shares their disappointment in current world leaders, even as they acknowledge the importance of leadership in the climate space. We laugh a bit as they share another message they had received from a mentor that encouraged a similar consideration. We reflect on the ways that this particular leader, relating to air, is a strategic, thoughtful leader skilled in engaging with social dynamics. I share another layer of meaning embedded in the cards: *la jefa del viento* asks us to consider the qualities of Swedish youth climate activist Greta Thunberg. K shares their thoughts about Thunberg's courageous leadership, which opens up another way of thinking about "preparing" to be a leader, since Thunberg, as a teenager, had no preparation.

Finally, we turn to the center card. I explain that the center card is one possible climate future; it can picture what will unfold in the larger world as it relates to climate disruption in the arc of K's lifetime, or a role for them. It could also respond in some way to what may have been present for K while they were shuffled the cards. I turn over the card and we see *la guia del agua* (the guide of the water), another court card. She is reversed. This card represents an iconoclastic, visionary leader related to water. I share that in the ECOtarot, water symbolizes both water-related phenomena (floods, droughts, etc.) and water systems, while it is also associated with the Cups suit in the standard tarot which represent emotions. The reading cracks wide open, as K shares that the crossroads where they are is deciding whether or not to accept a position of leadership at an agency that stewards a major watershed in the northwest! Using the space of intimacy and honesty we have created together over the last 45 minutes, they open up about all their concerns and reticence around assuming this role. Using the language we have developed together, that brings in the larger world and the fullness of them as a person, they speak to the moment and their place in it. With humility they express gratefulness for all of the leaders who have mentored them, and we discuss the importance of imagining a new type of leadership that is equal to this time, and not just repeating the type of

leadership that leads to burnout and separation. The reversed card can relate to their hesitation to step into the role, or perhaps a delay in stepping into it. They share that they have some time before they need to start, and we discuss how they intend to use that time. Finally, I reveal that *la guia del agua* is associated with Nobel Prize winning economist Eleanor Ostrom. K's face lights up as they recount their knowledge of this impressive and dedicated scholar of the commons.



Figure 2: Post-reading images of K and ECOTarot reading and 5 card spread.

We wind down by considering the reading as a whole. I reflect that all four elements (earth, wind, fire and water) are represented in the reading, a rare occurrence that indicates they know how to balance and work with each aspect of self/collective (body, mind, soul, heart). As well, we notice that three of the five cards are court cards, centering human forms. I share that this indicates to me that they will not be doing their work alone but will be surrounded by others, and will need to rely on other's skills, talents, and capacities to step into all that is being asked of them.

A soft rain starts to fall as we finish up the reading, taking pictures and sharing a blessing with each other as we continue on our life paths.

As one can see from this account, were I to draw the same cards in the same positions in the same spread (a highly unlikely occurrence), the reading would still be different because of the personal nature of what the querent shares, and how the reader responds. Much of the ECOTarot reader's role involves radical listening (McKinney, 2023), where I listen to the whole person, taking in many details of their countenance, self-presentation, posture, speech, gestures, etc. Listening is an important element of enacting “right relations” called for by Indigenous knowledge holders within sustainability transformation literature (Goodchild, 2021; Gram-Hansson et al., 2022; Nelson, 2017) and also figures as a central activity in awareness-based systems change theories and practices (Koenig et al., 2024; Seneque et al., 2024). I liken this radical listening to a type

of improvisation where I am holding many possibilities at once for how to respond and the cards and system are an extension of my body, enabling me to be part of an exchange that helps the querent hear the voice inside themselves. The ECOTarot method helps the querent *connect* with themselves more deeply than they may be used to, reflecting back to them things they already know but need to hear and to root into in order to move through these times. As one can see from the anecdote of K's reading above and Table 2 below, the methods of the ECOTarot work together to foster transformational qualities of awareness, connection, insight, purpose and agency, and resonate with U-Process stages.

Transformation qualities and capacities (Wamsler et al, 2021)	U-Process stages and principles (Scharmer, 2018; Seneque et al., 2024)	ECOTarot methods
AWARENESS <ul style="list-style-type: none"> • presence • attention • self-awareness • self-reflection 	CO-INITIATING <ul style="list-style-type: none"> • listen to oneself, to others, to what emerges • listen to what life calls you to do • high impact container / set the tone 	<ul style="list-style-type: none"> • use of archetypes • one-on-one readings • invitation to participate • low barrier to entry (free, held in public) • special space for reading (mesa)
CONNECTION <ul style="list-style-type: none"> • compassion • empathy • kindness • generosity 	CO-SENSING <ul style="list-style-type: none"> • get out of one's bubble • all of senses activated • suspend voice of judgement, connect with sense of wonder • heart and mind open • generative listening (from which something can emerge) 	<ul style="list-style-type: none"> • elements of minor arcana • radical listening • holding/making space • intimacy of reading • proprioceptive and material elements (smells, touch, etc.) • holistic practice (multiple overlapping meanings that can't be parsed cleanly) • process is oral/relational
INSIGHT <ul style="list-style-type: none"> • perspective-taking • sense-making 	CO-INSPIRING/PRESENCING <ul style="list-style-type: none"> • emerging future • willingness to let go of fear, be vulnerable • connect to the emerging future whole 	<ul style="list-style-type: none"> • use of spreads (structure) to address cognitive, affective, physical, anticipatory states • connecting cards meanings (sense-making) • imagining future related to cards drawn (envisioning) • space to experiment with ideas that are not fully formed, safe space for reflection
PURPOSE <ul style="list-style-type: none"> • activation • responsibility AGENCY <ul style="list-style-type: none"> • empowerment • courage • hope • passion 	CO-CREATING <ul style="list-style-type: none"> • crystallizing • prototyping the new (not a plan but something done to get feedback) CO-EVOLVING/ CO-SHAPING <ul style="list-style-type: none"> • relinking parts and whole (micro/self and macro/world) 	Interpretive readings are: <ul style="list-style-type: none"> • pluralistic (use of different languages, symbolic meanings from different cultures, ritual elements) • interactive (the core of the reading is a verbal and energetic exchange) • co-created climate future narrative

Table 2: Transformational qualities, the U-Process stages and the ECOTarot.

Observations and Next Steps

After conducting more than 1600 ECOTarot readings, I have begun to report on the impact of the work through mixed methods of participant observation, photographic imagery, and a small pilot study. Though largely anecdotal at this stage, early observations contribute to the understanding of the powerful potential of the arts' role in social transformation related to global environmental change. An ECOTarot reading differs considerably from an interview or survey responses to questions about climate change in its intimacy, proprioceptive engagement, and disruption of usual patterns and grooves of thought through the introduction of chance related to card selection. Throughout the course of the brief and structured engagement there is room for cognitive dissonance, contradictions, complex and intense emotions, and a multiplicity of meanings to come forward (Bentz, 2020; Moser, 2019). Furthermore, bringing aesthetic considerations to the fore, through the beauty-full and care-full creation of the ECOTarot deck and setting, as we share fears and anxiety around what scientific models predict about our future, can serve to remind us of the beauty of life surrounding us at all times, and enhance our *awareness* of our current moment, in which there is still time to act (Solnit & Lutunatabua, 2023).

Each ECOTarot reading elicits significant, intimate, and often lengthy narratives from the querent about what they know (cognitive), feel (affective), believe (spirit) and are doing (material/embodied) related to climate change. Querents have often expressed that they have never told anyone what they are telling me. Importantly, querents share details about personal plans and beginning efforts or directions to address climate change in their lives. I've listened intently to a desert denizen share an elaborate invention for recycling shower water, the president of a seminary share his visions of a climate-justice centered theological school, a young fashionista relate her understanding that she and her friends need to move away from purchasing wasteful "fast fashion," a Mayan healer describe how her community of indigenous women is organizing to resist the privatization of water in their village, and many, many young people expressing their desire to step into leadership in the political, activist and climate change policy space. These are just a few examples of the ways that the ECOTarot method fosters a sense of *agency* and *purpose* (two of the transformational capacities identified by Wamsler et al., 2021).

Perhaps most striking is the general attitude of querents upon completion of a reading. Since beginning this practice, I have been surprised at the extent to which querents leave a reading feeling inspired, rather than depressed, fearful, or anxious. In fact, a small pilot study (N=19, see Figure 3) using a survey instrument immediately following readings (Jenik, 2022), accurately reflected my anecdotal observations. In the survey, which also collected basic demographic data, participants were asked to choose the top three emotions they felt after receiving their ECOTarot reading.

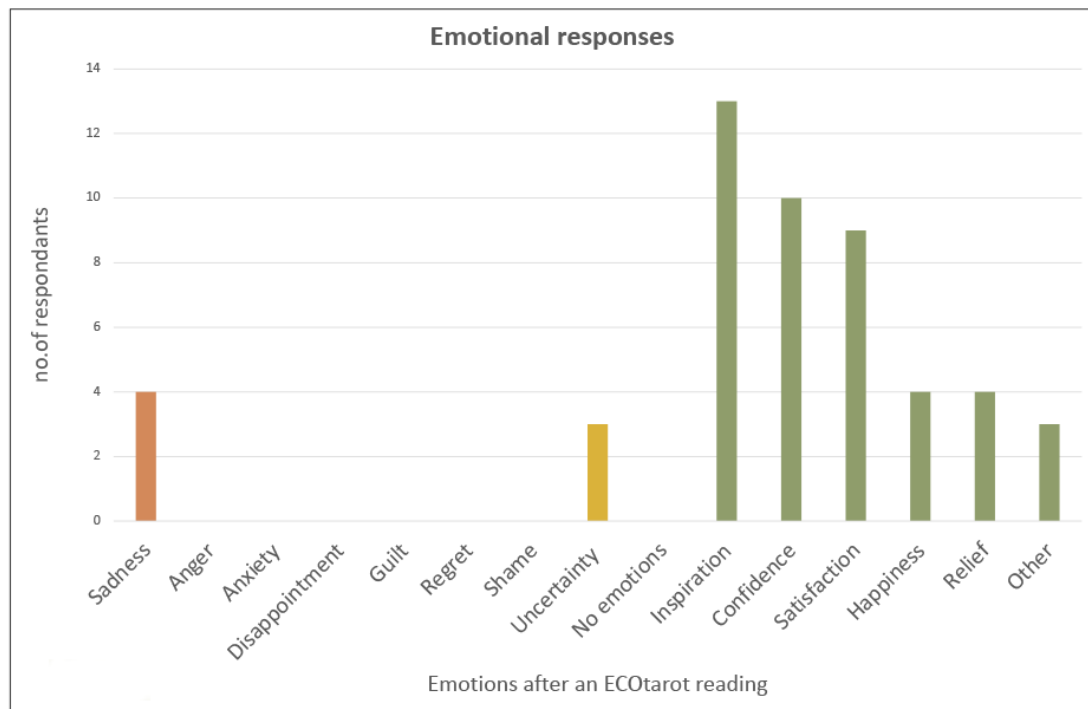


Figure 3: Data from Pilot Study (N=19) of post-reading survey instrument.

These responses were not the outcome I expected, as I do not personally feel “upbeat” about our planet’s future, nor are the card meanings overwhelmingly “positive” as they reflect increasingly dire consequences of human-driven climate disruption drawn from climate science and reported in Intergovernmental Panel on Climate Change (IPCC) reports. Instead, similar responses emerge, time after time, from this multi-sensorial exchange. And, in the process of undertaking the readings, I have been transformed; the result of the cumulative, collective knowledge of all kinds, that is so generously shared with me.

In the aggregate, the hundreds of ECOTarot readings I have conducted reflect a high level of social will related to global ecological change that I intend to capture and report in future phases of research. Undertaking qualitative data analysis of transcripts of recorded readings, greatly expanding the sample size and breadth of questions in a pre- and post-reading survey instrument and comparing the ECOTarot method with other arts-based methods used in the sustainability transformations field will result in rich new insights and a deeper understanding of “inner” transformations supporting sustainability transformation. Additional research to catalogue and analyze other CFSEA works is also planned, to shine a light on this whole class of activity that is under-leveraged within sustainability solutions spaces and is ripe for collaboration with willing sustainability researchers. With this work, I join with a chorus of voices calling for further research on co-production processes and “embedded and embodied forms of learning and engaging climate change” (Bentz, do Carmo, et al., 2022; Norstrom et al., 2020; Seneque et al., 2024).

Conclusion

Though it was not born from a desire to enact theories of transformation driven by global environmental change, the ECOTarot method addresses much of what is called for within a broad range of sustainability transformation literature. During my more than seven years performing with this method in public settings, I have found that the ECOTarot is an effective intervention and an enabling environment that nurtures transformational qualities and capacities called for in Wamsler et al. (2021). As an artist working in an academic institution, I was initially frightened by what others would think when I decided to embark upon this practice, but I pushed through my fear, understanding that the world is demanding something different from us at this moment (Koenig et al., 2024). I was supported in taking this step through the clarity I gained in ceremony and encouraged further in exchanges with beloved community.

I hereby invite any amateur tarot readers reading this paper to take the risk of offering this practice to your social networks, or perhaps even publicly.¹² For those of you not versed in tarot, I challenge you to fold this or another knowledge co-creation method into your research toolset and see what happens. This is not just a playful undertaking. As we break free of the strictures of academic disciplines and take on unorthodox research practices, we open space for other forms of knowledge, resisting the epistemicide enacted by Western thought.

The ECOTarot, though a unique artistic practice, is not alone in its alignment with these necessary “moves” in research practice. There are hundreds, perhaps thousands of CFSEA artists and arts processes being undertaken globally (Apostol & Thompson, 2019; Bloom, 2022; Davis, 2015; Demos, 2016; Gomez-Barris, 2017; Serafini, 2022). Research partners are needed to collaborate with these artists, to analyze their methods and capture and reflect their impacts. This will necessitate increased attention to research on synthetic, holistic, “messy” practices, increased advocacy for arts and arts-based methods within research initiatives, a greater commitment to funding open-ended research projects that do not have predictable outcomes and being open to innovations in research reporting. This means drawing from an expanded range of epistemologies that acknowledge inner and outer experiences of systems, thus bridging affect, will and action. The ECOTarot and other CSFEA arts methods are nurturing transformational capacities, preparing the ground for massive societal change toward a just and sustainability world, and supporting individuals, communities and our own selves as we navigate these paroxysms of change.

¹² A reproduction of the original deck was created, with a how-to guide, to support the proliferation of the practice.

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