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Theorizing non-western ontologies towards a pedagogy of animist praxis

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Abstract

This paper explores the role theorizing non-western ontologies play in developing pedagogies that center on animist praxis as a valid and necessary approach to problematizing environmental challenges in the environmental sciences and humanities. The ongoing call for this transdisciplinary pedagogical approach continues to suggest that the challenge of the Anthropocene is an ontological challenge arising from modern humans' abstraction from a more-than-human planetary community – rooted in the substance ontology of Euro-Cartesian metaphysics. The central focus of this pedagogy seeks to understand how theoretical examination of and self-reflexive engagement with the metaphysics of animist ontologies dismantle the primacy of dominant Euro-Cartesian assumptions in the classroom about the nature of reality and nature-knowledge relationships that inform systemic practices of environmental control.

In privileging Indigenous and Earth-centered epistemologies, this paper suggests how a pedagogy based on animist and other relational ontologies can assist students in experiencing themselves as part of an ecological web that values transspecies agencies – examining how theorizing and critical reflection on animist understandings of personhood, kinship, and the ambiguity of ontological between species can radically alter students' approaches to environmental work and reshape their relationships with other species.

Introduction

The academy as a social setting is structured according to established worldviews and paradigms that inform a set of beliefs that guide the instruction and actions of individuals who subscribe to and participate in this social setting. "These beliefs include the way that we view reality (ontology), how we think about or know this reality (epistemology), our ethics and morals (axiology), and how we go about gaining more knowledge about reality (methodology)" (Wilson, 2008, p. 13). What role does interdisciplinary and transdisciplinary theorizing of non-western ontologies continue to play in developing pedagogies (within mainstream academia) that problematize environmental challenges in the environmental sciences and humanities utilizing animist praxis or practice?

Over two decades ago, Potawatomi botanist Robin Wall Kimmerer, following in the footsteps of scholars of Native Science such as Greg Cajete (2000), among others, called for a more pervasive incorporation of non-western worldviews and environmental practices such as Traditional Ecological Knowledge (TEK) into mainstream science education and biology (Kimmerer, 2002). Since that time, departments such as SUNY College of Environmental Science and Forestry, where Kimmerer is director emeritus of the Center for Native Peoples and the Environment, the Traditional Ecological Knowledge Lab in the School of Forestry at Oregon State, alongside numerous other Environmental Studies Departments, Native American or Indian Studies Programs across the United States, (including other similar such programs in countries such as Canada and Australia) have fostered increasing interest among ecological and social science communities to include Traditional Ecological Knowledge systems (TEK) and Indigenous Knowledges (IK) in the study of the environmental and social impacts of contemporary ecological challenges like climate change (David-Chavez & Gavin, 2018; Wolf et al., 2024).

Despite the increase in interest to include Indigenous and other non-western knowledge systems and voices in scientific research and teaching institutions, many institutions continue to assume that scholars and scientists educated in classical interpretations of the natural sciences are sufficiently equipped to adopt a diversity of animist and or Indigenous epistemologies and to integrate the epistemologies of these ontological assumptions into their scholarly purview (Hird et al., 2023). Addressing this concern during a two-day workshop—entitled *Elevating Indigenous Knowledges in Ecology* hosted by Traditional Ecological Knowledge Section of the Ecological Society of America (ESA), Wolf et al. (2024) emphasize that notwithstanding the decades of transformation that has taken place in individual academic disciplines and schools of thought that without more comprehensive "holistic structural and cultural changes" (Wolf et al., 2024), enthusiasm to incorporate TEK and IK into environmental sciences risks perpetuating historical and ongoing exploitative academic perspectives and practices (Elkington, 2023).

Within the above context, this paper firstly serves as an ongoing decades-long conversation with educators (within the environmental sciences and humanities specifically) who continue to assess and reassess—how the philosophical

foundations of particular forms of universalized western ontologies and ensuing pedagogies continue to form part of an extractivist knowledge economy (Tachine & Nicolazzo, 2023) that reinforces a market-driven logic in the scientific and social study of environmental and climate change (David-Chavez et al., 2024; West et al., 2020, 2021, 2024). Change that disproportionately impacts human and more-than-human communities that do not find this universalized worldview mutually compatible with their own (David-Chavez & Gavin, 2018). Wolf et al. (2024) have bracketed the critical underlying epistemological frameworks embedded in this universalized form of western science, as settler science, which continues to underpin the foundations of the academy of the west, or settler-colonial institutions. Sullivan and Hannis (2016) state that while this particular form of modern ontology, most commonly associated with the philosophical and scientific principles of Euro-Cartesianism—has become universalized—and is, in turn, universalizing, it is itself culturally and historically particular (including to the history of western philosophical thought), and therefore does not translate universally across cultural contexts (p. 6).

From this standpoint, educators seeking to institute holistic cultural and institutional change must continue integrating a broader and increasingly transdisciplinary and ecologically centered pedagogical approach to practice-based theorizing (Dawes, 2023; Tan et al., 2023) of the differences and pluralities of non-western ontological assumptions across departmental curricula. "From a cross-cultural perspective, cultural and historical differences generate plural ontologies: or, at least, a plurality of discourses regarding what entities are considered to exist and how they are knowable, as well as the attribution of moral considerability and status to these entities" (Sullivan & Hannis, 2016, p. 5). This plurality of discourse about ontological assumptions informs diverse communities' beliefs about themselves as part of material assemblages constituting a broader representation of ecological worlds.

Although not contemporarily novel, this discourse, which is cyclically emergent, requires continual construction and reevaluation as ongoing resulting perceptions continue to inform relational approaches to environmental problem-solving (West et al., 2024). In privileging Indigenous and Earth-centered epistemologies, philosophies, and science, this paper suggests that a pedagogy based on animist and other relational ontologies can assist students (future environmental activists, thinkers, and scientists) in experiencing themselves as part of an ecological web that values transspecies agencies. In light of these concerns and this ongoing debate, this paper seeks to briefly revisit the role of teaching animist ontologies from the perspective of praxis 1.) clarifying what is meant by western, and then second 2.) reviewing the merits of engaging with explicit and implicit theory across disciplines, and lastly 3.) exploring the limits of theorizing embodied lifeways and ecologies.

Written in North America from within the western academy as a site of exploration, the questions in this paper are conceptually inspired by recent theoretical and methodological developments in Post-Qualitative Research (St. Pierre, 2021), Critical Posthumanism (Braidotti, 2019; Ferrando, 2019), and New Materialism (Barad, 2007; DeLanda,

2016). This paper draws from Indigenous philosophies and recent scholarly work on Indigenous research principles and methodologies (Chilisa, 2019; Wilson, 2008; Kovach, 2012). Here, Indigenous refers to peoples and communities with longstanding and/or continuous connections to land, whose culture and spiritual practices are informed by and tied to that land (Shaw, Herman & Dobbs, 2006). Theoretically, this paper draws from the philosophies of social, cultural, and environmental anthropology that evolved out of the discipline's ethnographic engagement (amongst Indigenous communities) with animist cosmologies, resulting in the theoretical framework known as the "ontological turn" (Descola, 2013; Viveiros de Castro, 2015; Willerslev, 2007; Haalbraad & Pederson, 2017) or anthropology beyond-the-human (Kohn, 2013) that continues to inform the study of New Animism. Lastly, the author draws from direct observations of teaching in classical and interdisciplinary classroom settings within the academy.

Reality beyond the limits of the western scientific paradigm

The specific western philosophical tradition from which the now universalized western scientific paradigm emerged during the European Enlightenment, has been accused of a great many things – including the formulation and formation of a hubristic worldview that envisaged the metaphysical separation of mind from the body and soul (Carter, 2021). An ontological worldview whose supremacy is premised on the uniquely soul-bearing human culture existing outside of and transcendent from the mutuality of all other planetary cultures and beings (Sahlins, 2023).

Commonly identified as Cartesian ontology, this worldview "stripped living creatures of the presence of soul so as to make humans exceptional in these terms, creating pacified objects and automata of beyond-human others" (Sullivan, 2019). Dominant forms of first Catholic, Anglican, and then Protestant Christian theology and their symbiotic relationship to the evolution of empiricist natural philosophy (Gaukroger, 2001, 2006; Matthews, 2008) are similarly accused of reinforcing this worldview and of propagating an ideology of human positionality of dominion that has led to the widescale societal justification for the endless consumption of natural resources, including all parts of the geosphere and all forms of animate and inanimate life that exists upon and within it (Merchant, 2019).

Since early modern philosophers and scientists envisioned the world as made out of nonexperiencing matter, it seemed clear that no natural (that is, material) process could possibly give rise to human minds/souls. The only alternative, they thought, was to assume that souls were created supernaturally by divine fiat. Consequently, human minds came to be seen as essentially unrelated to the world of nature around us (Mesle, 2008, p. 9).

With the evolution of this particular formation of a new European worldview (Tarnas, 2010), where the being of the human mind/soul is unrelated to the world of

"nature", came the bifurcation of nature, where the divinely infused transcendental nature of the human is set aside from the mundane and earthly immanence of the rest of creation (Sahlins, 2023, p. 11). The problem, according to philosopher of science, Isabelle Stengers, however, does not concern the mind but rather the theories that we have chosen to privilege that determine that nature is bifurcated (Stengers, 2011, p. 58). Theories that, despite the plurality of the evolution of Europe's cultural history—and this history's associated metaphysics have become embedded in the most basic western academic assumptions that form the foundation of many of our academic disciplines concerning the nature of reality as defined in the environmental sciences and humanities (Kocku, 2022).

Modernist philosophy of science implies a bifurcation of nature into objects having primary and secondary qualities. However, if nature really is bifurcated, no living organism would be possible, since being an organism means being the sort of thing whose primary and secondary qualities – if they did exist – are endlessly blurred...what sort of metaphysics should be devised that would pay full justice to the concrete and obstinate existence of organisms? (Stengers, 2011, p. xiii)

When we limit our understanding of the nature of being to what has become a universalized worldview of Cartesian ontology, we limit our understanding of reality to a culturally particular worldview that erases most other worldviews. Recognizing Cartesianism's ongoing prominence and influences on environmental and scientific disciplines does not preclude the recognition of Europe's intellectual heritage of resistance to ontological dualism primarily through social theory and the evolution of the environmental humanities, which at various points in the history of modernity have been heavily influenced by Indigenous philosophies, epistemologies and cosmologies (Graeber & Wengrow, 2021).

My reading of Euro-continental schools of social theory—including philosophy, history, and anthropology—is that they tended, at least initially, to focus on addressing human cultural and social concerns. Thinkers like Gilles Deleuze, Michel Foucault, Giorgio Agamben, and Antonio Negri, many of whom were positively or negatively influenced by Marxist theory (Laurence, 2016), focused much of their early work on human society's relationship to structures of power. These thinkers included concerns for the environment that relate to resource accumulation and labor production with a Marxist bent.

With the interdisciplinary convergence of sociology, anthropology, and science, western scholars like Bruno Latour, Michal Callon, Pugliese, Tim Ingold, Jason Moore, Isabelle Stengers, and Anna Tsing, amongst others, showcased the environment for its own sake. The flourishing of continental, Australian, and North American-based feminist studies, specifically eco-feminism, helped bring social theory and ecological critique together, moving the scientific study of ecology and environment into an even deeper relationship with the humanities. Feminist scholars like Judith Butler, Carolyne Merchant, Donna Haraway, Catherine Keller, Freya Mathews, and Val Plumwood,

to name a few, contributed significantly to what would come to be known as the collective field of environmental humanities, whose influence over time has extended to the environmental sciences.

The environmental humanities encompass an array of disciplines that preceded and helped define it. These disciplines include environmental history, environmental philosophy, eco-theology, eco-criticism, environmental ethics, and eco-psychology (Merchant, 2019). Significant scholars within environmental philosophy include notables such as Bron Taylor, Michael Zimmerman, Murray Bookchin, and Gary Snyder. As it has grown in influence and sophistication, the environmental humanities (and its influence on environmental science) have drawn upon the works of many who preceded the advent of the field itself, including figures such as the historian Lynne White Jr.; the philosopher Holmes Rolston; and environmental writers such as John Muir, Rachel Carson, Aldo Leopold and the founder of deep ecology Arne Naess.

Parallel to the flourishing of the above, the work of Alfred North Whitehead and the Deleuzoguattarian project (Deleuze & Guattari, 1987, 1996) reinvigorated academic discussions on process thought and process-relational ontology in England, North America, Australia, and Europe, respectively. Whitehead's process thought allowed postmodern Euro-American thinkers to reinvent their cosmologies, theologies, and epistemologies, while the Deleuzoguattarian project can be seen as having reinvigorated cosmological understandings of postmodern metaphysics (Griffin, 2008). Whitehead and Deleuze each engaged in a reimagining of how the metaphysical process of western thought and its material and nonmaterial modes of becoming interrelated. These two philosophers, emblematic of diverse yet connected positions that western philosophy can represent, demonstrate the complexity of the intellectual lineage of the western philosophical tradition and that tradition's ability to engage in an alternate perspective of ontology. As a mathematician, Whitehead was a philosophical empiricist concerned with thinking through the spatiotemporal processes of nature as defined by and denied by a particular history of western philosophy. Whitehead believed that "we habitually observe by the method of difference" (Whitehead, 1979, p. 4). Despite the long intellectual heritage of resistance within the environmental humanities to dualistic Cartesian ontologies, these ontologies' persistent prominence in the academic discipline and practice of mainstream environmental science remains at odds with animist and Indigenous worldviews (Hird et al., 2023).

The ontological turn: Engaging with explicit theory

The above discussion of the ongoing prominence of Cartesian ontology in scientific disciplines, despite Euro-American philosophy's ontological bend toward ontological extension or plurality, reintroduces the question of the role of theorizing non-western philosophies and ontologies to inform a different approach to environmental praxis. How do we, as Harvey (2018, p.35) and Morrison (2013) suggest, build on the teachings and ontological assumptions of

western-non-western post-Cartesian scholarly practices – to support a praxis of human-non-human relationality in which environmental scientists, researchers, activists, and scholars recognize not only the rights of nature but also the role of alive, more-than-human agencies in shaping the future of climate adaptation and environmental decision-making beyond-the-human.

Ontological assumptions denote what entities can exist, into what categories they can be sorted, and by what practices and methods they can be known (i.e., epistemology)...It suggests the parallel existence of different ways of understanding how reality is constructed, how the world and its entities can be known, and what constitutes appropriate ethical praxis in relation to these entities (Sullivan, 2016, p. 157).

Even as the hard sciences evolve towards a greater understanding of material complexity (Dodds, 2012; DeLanda, 2013), scholars have recently argued that the Cartesian worldview continues to, directly and indirectly, inform a single dominant reality about the nature of biological materiality that assumes that earthly matter lacks animism (soul), autonomy, and agency when problematizing environmental challenges (Hird et al., 2023). In contrast, in the ontology of an Indigenous worldview, there may be multiple realities, each of which comes into existence by acting on relationships with those realities. "This idea could be further expanded to say that reality is relationships or sets of relationships. Thus, there is no one definite reality but rather different sets of relationships that make up an Indigenous ontology" (Wilson, 2008, p. 73). Thus, if the dominant or even lingering belief about the nature of reality in environmental studies assumes a narrow scope of ontologies based on the bifurcation of ecological relations between species, humans, and other forms of materiality, then this assumption will continue to inform extractive research practices and methods that lack relationality in cross-cultural and other research settings.

The transdisciplinary theorization of animist praxis informed by decades of evolving theoretical frameworks put forward by Indigenous and Euro-American scholars in Anthropology, New Materialism, Posthumanism, and Feminist Studies continues to counter an academic culture of monolithic ontology, even if it has yet to be holistically integrated into the academy as a whole. Scholarship whose epistemological foundations focus on the relations between entities continues to hold considerable potential to reinvigorate and eventually transform many if not all, academic disciplines in a more pervasive manner (Astor-Aguilera & Harvey, 2018, p. 3).

Allowing for ontological difference permits us to explore alternative modes of thinking by recognizing affordances to everything that surrounds us – be that animals, plants, the weather, water, rocks, as well as the unseen – both because most of us may also treat "objects" as "subjects" and, often in more deliberate ways, because many non-Western peoples relate to the world as such (Astor-Aguilera & Harvey, 2018, p. 6).

Anthropology, and more explicitly, environmental anthropology, including the rapidly evolving practice of multispecies ethnography (Ameli, 2022) within the context of post-colonial and decolonial scholarship, continues to experience an increasing move towards a broader spectrum of ontological considerations through the theoretical framework of animism “as researchers have dug more deeply into divergences regarding the assumed nature of reality, as revealed by differences in how environmental phenomena are framed and thereby constructed culturally” (Sullivan, 2016, p. 156).

As with nineteenth-century anthropology, the academic concept of animism evolved more generally from a Eurocentric evolutionist perspective (Tylor, 1920). A perspective replete with Cartesian assumptions about the soul and the essence of natural phenomena. Much of early anthropologies attempts to understand how non-western peoples and cultures relate to their worlds imposed (and continues to impose) Cartesian binaries (Astor-Aguilera & Harvey, 2018, p. 3).

Through Hallowell’s study of Ojibwa ontology (Hallowell, 1960), the study of animism evolved to question how ecological awareness and engagement inform more-than-human ontological personhood (Forbes, 2021), a question more recently expanded upon by Ingold (2000) and Low (2017) among others who assume an ‘ecological phenomenological’ approach to animism. Hallowell’s theorization of personhood beyond-the-human contributed to the understanding that the study of social organization should not be constrained to human relations but should include the connections of all animate beings, leading to the emergence of New Animism in the 1990s (Costa & Fausto, 2010, p. 90).

Via the dual paradigms of animism and philosophical perspectivism, the work of Philippe Descola and Eduardo Viveiros de Castro among Lower Amazonian peoples (Castro among the Achuar and Descola the Awaré) significantly contributed to the theoretical and philosophical evolution of New Animism and the ontological turn (Costa & Fausto, 2010). Intellectually indebted to Lévi-Straussian structuralism, Descola emphasizes “the aspect of human-non-human continuity by virtue of a shared ‘interior’ spirit or soul,” while Viveiros de Castro is concerned with “discontinuity through different ‘exterior’ bodies which ensure that species see each other as different from one another” (Guenther, 2015, p. 280). Both paradigms focus on the ontological continuity between humans, animals, and the preternatural, where “in Descola’s vision, the animist world is constitutive of species-societies that are isomorphic with human societies” (David-Bird, 2018, p. 28) and Castro explicitly stating that animism is “an ontology which postulates the social character of relations between humans and non-humans: the space between nature and society is itself social” (Viveiros de Castro, 2015, p. 473). With the emergence of New Animism as an explicit theoretical framework for engaging with the cosmologies of animist societies, animism morphs from being an epistemology or way of knowing to a way of being or ontology (Costa & Fausto, 2010, p. 94) that informs a praxis that reinforces that “reality is relationships” (Wilson, 2008, p. 73), that reality is social. “Put simply, animist ontologies

assume the alive sentience of other-than-human natures, affirm the possibility of agency enacted by ‘non-human’ entities, and tend to adjust human relationships with these entities accordingly” (Sullivan, 2016, p. 159).

Astor-Aguilera and Harvey emphasize that despite the ontological turn being a social theoretical construct that essentially emerged from within the broader academy as a heuristic tool, the “turn toward emphasizing ontology in the study of non-western (or alternatively modern) peoples and knowledges” (Astor-Aguilera & Harvey, 2018, p. 3) has provided scholars with an expanded method to engage with cross-cultural differences and realities – valuable to scholars’ and researchers’ problematization of the impacts of present-day environmental challenges on peoples and species alike. Chris Low’s recent work (Power et al., 2016) supports Ingold’s notion of an ontology based on perceptual engagements with constituents of a dwelt-in world (Ingold, 2000). Low, in my understanding, advocates that a hunter-gatherer ontology, for example, is informed by somatic symbolic engagement with their environment. This allows us to reimagine a more embodied and inclusive approach to the historical development of human consciousness. Low’s argument deemphasizes a human-centered approach to the development of consciousness, emphasizing instead the evolution of the human as part of the conscious ecology of Earth. Low argues that the premise of a sudden ‘human revolution’ of consciousness creates a superficial division between humans and the rest of the ecological and biological world (Low, 2017, p. 226).

Even with the advances made in the disciplines mentioned above, explicitly examined and taught, the theories of New Animism (and New Materialism to some degree) once treated as “curious belief systems” or theories (Astor-Aguilera & Harvey, 2018, p. 35), still lack cross-disciplinary integration as relational societal frameworks that have concrete bearing on the interaction between humans and their surrounding ecologies. And despite the progress made in the philosophy of science (Barad, 2007; Latour, 1993) and the study of critical posthumanism (Braidotti, 2019), animistic theory often remains relegated to Anthropology, Religious Studies, Animal Studies or Native Studies departments with some scholars arguing that there remain several significant challenges to the integration of animism with science or empirical naturalism with particular reference to the difference in which animism and science treat nature (Van Eyghen, 2023). Lastly, even with the flourishing of the study of animistic theory within these independent departments, the explicit instruction of relational animism across disciplines within the environmental humanities has yet to be thoughtfully incorporated into the broader spectrum of ecological studies outside specialized transdisciplinary fields of study. Again, this does not preclude the work being done in individual universities and colleges across the Global North and the Global South, the analysis of which would be better treated in a separate paper.

In parallel, and perhaps as an overlapping process, the growing recognition of the importance of Indigenous Knowledge (IK) to environmental studies provides alternate opportunities for theorizing plural ontologies, notwithstanding the present barriers that still exist to

integrating IK in environmental curriculum and research projects (Elkington, 2023). Like any theory, the animism of the ontological turn can, in a similar way to the scientific study of nature, become an ideated abstraction in the classroom, where students' first-hand exposure to these lifeways is often limited. Sullivan and Hannis (2016), in supporting the academic consideration of relational ontologies in the study of biodiversity, conservation, and natural resource management, suggest that in the absence of direct experience, one way to avoid such an abstraction is to continue to learn from the direct experiences of others, which for one, can be informed (across disciplines) by critical reflection on contemporary cross-species ethnography alongside experiences from other methodological forms of direct community engagement (Ameli, 2022).

In specific reference to environmental ethics, Sullivan and Hannis (2016) suggest that by reflecting on the direct experience gained from ethnography, environmental anthropology offers interdisciplinary students, scholars, and scientists in environmental studies "a deeper understanding of how people might live in specific relational contexts with different kinds of agency-asserting entities, only some of whom are human" (p. 22). The western academy has undoubtedly seen increased integration of explicit animistic theory within interdisciplinary educational institutions, and yet it lacks holistic and wide-scale integration across the environmental humanities, which raises the question of the function of implicit theory and its role in fostering relational animist praxis across academic disciplines and institutions.

Implicit theory: Towards a pedagogy of animist praxis through storytelling

Developing a pedagogy of animist praxis implies that we are not only instructing students about multiple ways of relating to the world but are, instead, also demonstrating the principles embedded in relational ontology as a valid framework with which students can engage and approach the world. In classical educational settings where the study of (or demonstration of) ethnographic detail across disciplines may not be available to students undertaking environmental studies, Sullivan and Hannis's (2016, p. 22) suggestion to learn directly from the experiences of others can still be applied through the instruction of implicit relational and animist theory utilizing different educational tools. Here, the mediums of narrative, storytelling, and oral traditions are well suited for instructing implicit relational and animist theory and are congruent with the relational principles of an animist and Indigenous praxis. Nêhiyaw and Saulteaux scholar Kovach explains that

Stories hold within them knowledges while simultaneously signifying relationships. In the oral tradition, stories can never be decontextualized from the teller. They are active agents within a relational world, pivotal in gaining insight into a phenomenon. Oral stories are born of connections within the world and are thus recounted relationally. They tie us with our past and provide a basis for continuity with future generations (Kovach, 2012, p. 94).

Bantu scholar Chilisa further elaborates that languages, folktales, and stories embody the Indigenous knowledge (Chilisa, 2019, p. 92) of animist praxis and that stories are a tool for enabling scholars (and students) to "triangulate postcolonial Indigenous values, belief systems, and community and family histories with other sources of knowledge" (Chilisa, 2019, p. 194). Chilisa's statements here are further enhanced by Wilson's articulation that stories serve the purpose of allowing the listener to arrive at their own conclusions and to integrate life lessons from their particular and personal viewpoints (Wilson, 2008, p. 17). Guenther, in discussing the role of story and myth in the animistic cosmology of the San Bushmen of southern Africa, writes that "myth, through its linkages with and relevance to people's real-life existence, becomes an implicit aspect of this existence, and contributes to shaping how they live, experience, and understand their lives" (Guenther, 2017, p. 8). Bieseke further highlights that for southern African hunter-gatherer societies, survival is as much dependent "on functioning as a creative, intercommunicating collective" (Bieseke, 2023, p. 16) as on resource sharing and that the principles of sharing resources are continuously reinforced by communal artistic activities, where storytelling serves as a tool for creating a world of unique agreement and social cohesion (Bieseke, 2023, pp. 16-17) among human and more-than-human kin in place—governing and reinforcing collective morals and ethics that inform relationships (Bieseke, 1993). Wilson reiterates that relationality is the central overlapping or connected aspect of an Indigenous ontology and epistemology, "relationships do not merely shape reality, they are reality" (Wilson, 2008, p. 73). Stories about and storytelling by more-than-human affirming agencies help elucidate a reality of relationality that extends beyond human social relations.

Stories help to make sense of and reinforce relationships in places that are at the heart of animistic and Indigenous ontologies. Giving a direct voice to the relational lifeways embedded in Indigenous and other place-based stories can be an approachable and relatable demonstration of animist praxis that is less abstract and, at the same time, supportive and demonstrative of relational animistic theory. Stories, in various artistic formats, with a particular reference to the visual medium and the use of film in the classroom, allow educators to introduce students to relational animistic principles that not only facilitate a process of fostering ontological paradigms beyond Cartesianism, but further allow them to imagine the co-creation of futures beyond our current condition (Strauß, 2023). Integrating and teaching, for example, animistic and Indigenous understandings of kinship – based on reciprocity with the more-than-human world – to students for whom such understandings are entirely foreign requires a literal demonstration of relationship to place that is challenging to achieve using explicit theory in texts alone.

How do we demonstrate to students, as Sahlins (2013) suggests, to experience and see more-than-human kin as "mutual" beings who participate in each other's lives through the plurality of being? How do educators demonstrate in the classroom an ontology of "being immersed from the start, like other creatures, in an active, practical, and perceptual engagement with constituents

of the dwelt-in world” (Ingold, 2000, p. 42)? We adhere to the suggestion that we give voice to the direct experiences of peoples and communities for whom an ontology of dwelling is a lived reality (Sullivan & Hannis, 2016), while as Wolf et al. (2024) suggest working towards an academic reality that integrates Indigenous Knowledges (IK) as a central paradigm to ecological sciences institutionally and culturally. Environmental activist and filmmaker Craig Foster, in referencing the Indigenous concept of two-eyed seeing, first introduced by Mi’kmaq Elders, Albert, and Murdena Marshall, where Indigenous perspectives and western perspectives are held together (Wright et al., 2019), suggests that it is necessary, in our contemporary moment, to engage in what he recently referred to as three-eyed seeing. A process where storytelling becomes an active agent with science and Indigenous knowledge in communicating a way of being in relationship with the more-than-human world that is not currently accessible to large groups of people and students raised and educated within western societies (Oberhosel, 2024).

The above does not obfuscate existing academic advancements in this direction nor suggests that the academy is void of such practices. Instead, it argues for a more pervasive integration of such tools and methods across disciplinary frameworks, particularly concerning the intersection of environmental humanities and the environmental sciences.

Conclusions on the limits of theorizing embodied lifeways

Animist embodied lifeways are, first and foremost, embedded in a deep relationship to place, embodied over time from one generation to another, where ancient knowledge is “grounded in the experiences of self-in-relationship to place” (Styres, 2018, p. 25). This highlights the most apparent limits of theorization in that theorization is incapable of substituting embodied and phenomenological processes gained over thousands of years. However, the limits of theorization can also define its purpose: creating space for a paradigm shift or broadening intellectual possibilities that support more embodied futures, supporting the development of what Narvaez calls ecological relational consciousness (2024). An awareness where we understand that an “acknowledgement of our dependence upon nonhuman worlds contribute to our understanding of ourselves” (Sullivan & Hannis, 2016, p. 24).

This author’s limited observations within the classroom at both an undergraduate and graduate level within classical and interdisciplinary academic settings reveal that despite increased access to information and social mobility, students are frequently culturally and intellectually isolated while repeatedly being encouraged to engage in siloed learning as a strategy for navigating academia. This educational strategy encourages students to filter out rather than embrace a plurality of paradigms and ontologies that lead them back to problem-solving through the worldview of Cartesian binaries. So where, then, do we begin or go from here?

The starting point is to return to the question of what worldviews and ontological paradigms we are privileging in the classroom and how these directly translate into either a pedagogical praxis of bifurcation or a pedagogical praxis of interrelation between beings. As educators, we must begin with the assumptions in our higher education system.

Secondly, it is insufficient to assume or discover that these assumptions are based on Euro-Cartesian dualism and turn this into a philosophical practice of assigning blame to justify the status quo. It is instead critical to continue to recognize that much of the academy and secondary education continues to be at fault for placing one culturally particular or universalized paradigm hierarchically above all others—positioning this paradigm as the benchmark by which to assess and understand the entirety of the universe (Tachine & Nicolazzo, 2023). It is equally insufficient to call on environmental studies to include Indigenous scientific perspectives or to ask Indigenous researchers to engage in two-eyed seeing when we, within the western academy and scientific institutions, have not integrated an equivalent approach to scientific and environmental inquiry ourselves—demonstrated by the collapse of a recent collaborative study between Indigenous communities in North America and U.S. National Academies of Sciences, Engineering, and Medicine (NASEM) (Ortega & Mervis, 2024). Just as for an Indigenous scholar, where blending western scientific approaches with Indigenous scientific knowledge can be experienced as a contradictory process, so too, students within the western academy who have not been taught how to embrace relational or animistic research principles will encounter contradiction in the field when asked to use the tools of western science, to engage with TEK and IK.

Thirdly, educators who are not Indigenous must continue to support and give voice to Indigenous scholars and the stories of Indigenous-led science and research projects, including projects that support the successful blending of western science, TEK, and IK in problematizing contemporary environmental challenges (David-Chavez, 2024).

Lastly, educators in environmental studies must continue to increase the integration of practical outdoor and land-based education designed and led by Indigenous communities, successfully demonstrated for decades (Kimmerer, 2002), for whom an animist praxis forms part of their lived environmental strategy—a praxis based on a reality informed by reciprocal relations to the more-than-human world. “Many indigenous communities globally...seem to conceive of an expanded zone of moral considerability, reciprocity and collaboration that includes entities beyond-the-human, as these are embedded and constituted in specific and shifting relational settings” (Sullivan & Hannis, 2016, p. 6).

Decolonizing environmental studies in the neoliberal era of western academia is, by design, a paradox and can, for many educators, scholars, and students alike, feel contrary to their reasons for being in academia in the first place. It is important to remember, though, as Tachine and Nicolazzo remind us, that academia “both reinforces existing systems and has the potential to serve as a site of refusal” (Tachine & Nicolazzo, 2023, p. 26). Embracing a pedagogy of animist praxis through the theorization of plural ontologies

and learning from the lived ontological experiences and cosmologies of non-western peoples and societies turns the classroom into a site of refusal of the universalization of one very particular and culturally specific ontological paradigm and worldview. The academy can also serve as a site of creation and regeneration to support a praxis of human-non-human relationality in which environmental scientists, researchers, activists, and scholars recognize not only the rights of nature but also the role of alive, more-than-human agencies in shaping the future of climate adaptation and environmental decision-making beyond-the-human.

In conclusion, a move towards a pedagogy based on animist praxis and other relational ontologies can open possibilities for students to experience themselves as part of an ecological web that values transspecies relationality.

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