

Sustainability education in the Anthropocene: Storytelling, the environmental humanities, and the unknown

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Abstract: In this paper, I draw from the fields of curriculum studies and the environmental humanities to address the sustainability issues associated with the Anthropocene and to theorize what it means to reinhabit our unique bioregions. I argue that it is time to transgress the fragmented and mono-disciplinary investigations emblematic of the academy by embracing pluralistic ways of knowing and going beyond conventional epistemologies to better understand the cultural forces involved in wicked problems such as climate change. Using autoethnography, I draw from my personal experiences related to higher education for sustainable development while discussing what it means to better appreciate a problem's intractability and to hold our assumptions open to questioning. Additionally, I make connections to Donna Haraway's conception of *staying with the trouble* in the midst of these socio-ecological turbulent times. Accordingly, I theorize what it means to stay with the trouble by learning to "love the questions" inherent to studying sustainability issues while articulating the roles that reflection, storytelling and transdisciplinary scholarship play in (re)envisioning a future that sustains the (more than) human world.

Key words: the environmental humanities; sustainability education; storytelling; autoethnography; transdisciplinary inquiry; Anthropocene; wicked problems

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In the Anthropocene, every discipline has a role. (Matthew Nisbet, 2015, n.p.)

Each time a story helps me remember what I thought I knew, or introduces me to new knowledge, a muscle critical for caring about flourishing gets some aerobic exercise. Such exercise enhances collective thinking and movement in complexity. (Donna Haraway, 2016, p. 29)

While working on my undergraduate degree in outdoor education (in the late 1990s) at Northland College, I recall professor Joe Rose, the director of the Native American Studies program at that time, speaking about the fact that humankind has reached a fork in the road in which we must decide to take a sustainable path or an unsustainable path. These experiences were my first encounter with traditional ecological knowledge in the academy. Professor Rose said that we need to choose a pathway that embraces traditional ways of knowing and that path involves slowing down instead of the conventional mechanistic approach that precipitates the great acceleration. I recall his observation that taking the more sustainable route would be very difficult and that it would involve a great deal of patience, stamina, and collaboration. As an Ojibwa elder, Joe was steeped in the art of storytelling and he was gifted at both grabbing the attention of any audience and encouraging transformative action. Professor Rose was able to amplify and sustain many traditions of the Ojibwa such as the sweat lodge and storytelling circles. As we face even more environmental crises, applying the power of storytelling to sustainability becomes crucial. It's this urgency that has drawn me to study sustainability from the perspective of curriculum studies.

Now, more than 20 years after my time at Northland College, I am wrapping up my sixth year as an Assistant Professor of Sustainability Education at Bowling Green State University in northwestern Ohio and recognize that I sit on the shoulders of giants with my work—so much has been written on sustainability education. In my teaching and research, I strive to infuse indigenous perspectives and embrace place-based viewpoints. As a citizen of the Western Lake Erie Basin, I seek to learn along with my students and colleagues more about our unique watershed and to take part in the opportunities to reinhabit this part of NW Ohio. One approach that I utilize in my research and teaching is that of storytelling.

The stories of human-caused ecological disequilibrium exemplified by climate change, water quality issues, and biodiversity loss converge in the Anthropocene (the Anthropocene is a term commonly used to describe an epoch in which human activity has become the dominant influence on the environment). As we face the onslaught of the socio-ecological uncertainties tied to the Anthropocene, sustainability education becomes even more urgent than it was a few decades ago. The complexities of the ecological and social crises embedded within the Anthropocene demand a fundamental restructuring of conventional problem-solving approaches. It's time to transgress the fragmented and mono-disciplinary investigations emblematic of the academy by embracing pluralistic ways of knowing (Hensley, 2016, 2018a; 2018b). Since wicked sustainability problems—problems that appear to be intractable and “by their nature defy complete and clear solutions” (Holm, Adamson, Huang et al., 2015, p. 982)—resist traditional problem-solving strategies, a radically different educational configuration and approach needs to be adopted in higher education for sustainable development. This (re)configuration requires a transdisciplinary approach that adopts a posture of “staying with the trouble,” where the

questions are just as important as the answers. Donna Haraway (2016) proposes that we “stay with the trouble,” that is, face the ecological crisis head-on and not view it from an escapist perspective. Haraway believes that “language can provide a route away from environmental catastrophe” (Basciano, 2017, n.p.) and she urges us to recognize that “we require each other in unexpected collaborations and combinations, in hot compost piles. We become-with each other or not at all” (Haraway, 2016, p. 4). The work that needs to be done to address the environmental crisis needs to be approached through the interdisciplinarity embodied in the environmental humanities.

The environmental humanities—a discipline that draws from several subfields in and beyond the humanities—offers diverse insight into “cultural, historical and ethical dimensions of our most intractable environmental problems” (Forêt, Hall, & Kueffer, 2014, p. 67) and is well-positioned to navigate seemingly intractable sustainability issues and to *stay with the trouble* embedded in the unknown (Hensley, 2020a). One way to understand and articulate what it means to *stay with the trouble* is to study relevant educational experience(s) through autoethnography (Adams, Jones, & Ellis, 2015). Ellis, Adams, and Bochner (2011) explain that “Autoethnography is an approach to research and writing that seeks to describe and systematically analyze (graphy) personal experience (auto) in order to understand cultural experience (ethno)” (p. 1). In this paper, I utilize theoretical inquiry and draw from autoethnography to explore sustainability education and make connections to the theme of *staying with the trouble* within the Anthropocene. Accordingly, through the lens of the environmental humanities, I will theorize what it means to *stay with the trouble* by learning to love the questions inherent to studying sustainability issues while articulating the role that reflection and storytelling plays in (re)envisioning a future that sustains the (more than) human.

Loving the questions themselves

Leave the door open for the unknown, the door into the dark. That's where the most important things come from, where you yourself came from, and where you will go. (Rebecca Solnit, 2018 n.p.)

Because the sciences [tend to] eschew uncertainty and contingency, new approaches and radically new alignments of disciplines are required... (Paul Holm et al., 2013, p. 31)

One way to embrace the vast amount of uncertainty embedded in sustainability studies is to love the questions themselves. The German poet Rainer Maria Rilke (2019) urges us to ...love the questions themselves, like locked rooms and like books that are now written in a very foreign tongue. Do not now seek the answers, which cannot be given you because you would not be able to live them. And the point is, to live everything. Live the questions now. Perhaps you will then gradually, without noticing it, live along some distant day into the answer. (p. 12)

In the field of sustainability studies, what might it look like to love the questions themselves? An ability to embrace uncertainty is interwoven into this posture of being present and is a necessary

component to face the challenges of advancing sustainability (Hensley, 2020a; Stirling, 2018). According to Davison (2001),

The ideal of sustainability gives rise to an agenda of good questions, practical questions that bear directly on our forms of life, drawing out and giving practical substance to our disquiet and to our hopes. Responses to the questions are essentially contestable, they demand of us not categorical certainty but the capacity to articulate what we feel to be most worthy of being sustained in our lives. These questions are valuable to us because they command our attention in an age of ecological crisis while simultaneously defying resolution and closure: *they demand that we hold open for questions our assumptions about what a resolution of this crisis might involve.* (italics added, p. 213)

Holding our assumptions open to questioning is a process that requires patience, perseverance, and embracing the unknown (Hensley, 2020a). With the complexities and uncertainties inherent to sustainability problems, it is inevitable that some attempts at sustainability solutions will be wrong or lead us astray. Thus, sustainability work demands an unprecedented level of humility across all epistemological and ontological orientations.

Reminding us of the importance of humility in addressing environmental issues, Rachel Carson (1962/2002) states that the “control of nature is a phrase conceived in arrogance...when it was supposed that nature exists for the convenience of man” (p. 297). Carson exhibited an impressive level of humility and curiosity in her work that led to the best seller *A Silent Spring*, which laid the groundwork for clean water and clean air policies along with pesticide safety and awareness (Carson, 1962/2002). Grassroots approaches to cultivating an environmental ethic, grounded in humility, can interlink nature writers with ecologists.

The writer, philosopher, and scientist Wes Jackson suggests that an alternative to the “dominant knowledge paradigm is humility—to accept unknowns as mysteries” (Lukasik, 2010, p. 54). Jackson advises that when “we think that we have the recipe” then we have “to be prepared to realize where the recipe breaks down.” He adds that “if you think you got it, that’s the best indication that you don’t” (in Jensen, 2020). Jackson argues that it is crucial to move beyond an attitude of arrogance and to openly embrace ignorance. He warns that, “Knowledge, especially of complex dynamic systems such as ecosystems is necessarily incomplete, uncertain, and continually open to revision...and overconfidence in the use of knowledge has hidden the potential for anthropogenic environmental damage” (Fredericks, 2009, p. 123). Uncertainty is an inherent component of ecological knowledge and is, as Stirling (2018) says, “an unavoidable reflection of complex environmental realities” (p. 122). The uncertainty embedded in socio-ecological systems requires non-conventional modes of inquiry.

Integrating a knowledge of the unknown with that of the known is fundamental to understanding wicked problems. An overconfidence in “high status knowledge” (Bowers, 2009)—such as science-based knowledge—can be misleading, other times it can be lethal (as in perpetuating an industrial-scientific worldview and its effects). There will always be limits on what we, as humans, can know, and, as Jackson states, that “recognizing the limits of knowledge enables a more realistic description of the world and a more helpful approach to environmental,

medical economic, ethical, and pedagogical problems than solutions that demand ultimate confidence in knowledge” (Fredricks, 2009, p. 123). Accepting human’s scarcity of knowledge is not an easy task, especially in the academy. In recognition of this, Vitek and Jackson (2010) ask, “Since we’re billions of times more ignorant than knowledgeable, why not go with our long suit and have an ignorance-based worldview?” (p. 1). Fredericks (2009) explains that an ignorance-based worldview includes “an emphasis on the limits of human knowledge and cautious decision making in the face of uncertainty” (p. 124). In some circumstances, cautious decision-making is an outcome of holding our assumptions up to investigation.

To accept an ignorance-based worldview and to hold our assumptions open to questioning is fundamental to staying with the trouble because critical self-reflection empowers us to reimagine what it means to advance the relationships integral to sustaining the integrity, stability, and beauty of the natural world (Leopold, 1949). Enhancing the quality of relationships that exist between humans and the more-than-human population is a cornerstone to promulgating sustainability. In contrast, if one’s focus is on finding answers and solutions to sustainability problems, it can lead to failing to ‘stay with the trouble’ (Haraway, 2016).

By embracing an agenda of good questions, scholars in the environmental humanities value a Socratic dialogue that “promotes questions as well as answers” (Kueffer, Forêt, Hall, Wiedmer, 2018, p. 255). Scholars suggest that rather “than searching for the shortest path to the best solution to problems that have already been identified, problem-solving may involve open, exploratory, and experimental processes. EH [Environmental Humanity] scholars emphasize that *we must learn to better appreciate a problem's intractability*” (emphasis mine, Kueffer, Forêt, Hall, Wiedmer, 2018, p. 235). When we better appreciate a problem’s intractability we are better able to turn discomfort into inquiry, which helps us stay with the trouble.

Kueffer et al. (2018) observe that “environmental humanists acknowledge and embrace uncertainty, subjectivity and relational knowledge” (pp. 254-255) and that the environmental humanities aim to “utilize methodologies, epistemologies and values from across the range of human experience to understand and address our environmental problems” (p. 256). Approaching sustainability issues through the lens of human experience is central to conducting scholarship in the environmental humanities. For example, autoethnography allows scholars to draw from their lived experiences and utilize writing as a method of inquiry (Richardson & St. Pierre, 2003). Writing as inquiry involves using writing to clarify and make sense of new experiences (Poulos, 2021; Richardson & St. Pierre, 2003) and offers passageways to new perspectives on these experiences. Poulos (2021), observes that writing as inquiry may involve retreating from a situation and actively reflecting on lived experience, while asking “What is going on here?” (p. 31). In my own scholarly life, for example, I tend to write in my journal after teaching new content or trying new activities in my classes. I am able to learn a lot by going back to these journals at a later time and reflecting on the discoveries. Accordingly, reflecting on my lived experiences as a teacher inform my future pedagogical practices.

Understanding our own lived experience enables us to better relate to others. Allison and Miller (2019) note that scholars in the humanities “interpret human history, literature, and imagery to figure out how people make sense of their world” adding that “[h]umanists challenge others to consider what makes a good life and pose uncomfortable questions” (2019, n.p.). It is the ability of humanists to go beyond science that enables them to define the “cultural forces driving climate change, such as the fossil fuel dependence of industrialized societies” (2019, n.p.). Understanding the multiple dimensions of environmental issues such as climate change requires humanistic knowledge.

Studying epistemology—in the realm of sustainability education—requires a layered humanities-based approach that weaves in personal narrative and theoretical grounding (Hensley, 2020a). As Adams et al. (2015) indicate, “Social life is messy, uncertain, and emotional. If our desire is to research social life, then we must embrace a research method that, to the best of its/our ability, acknowledges and accommodates mess and chaos, uncertainty and emotion” (p. 9). Autoethnography is a form of inquiry that addresses the uncertainty (and the mess and chaos inherent to lived experience). It draws from self-reflection to explore how personal experiences link a writer’s unique story to wider “cultural, political, and social meanings and understandings” (Autoethnography, 2021). Autoethnography-based inquiry offers a passageway to the particularities of an individual’s lived experience and makes connections to cultural implications of that experience.

Stories and lived experiences in the Anthropocene

To characterize the Anthropocene by means of quantitative data is one thing; to describe and understand how it perceives human interaction, culture, institutions, and societies – indeed, the meaning of being human – is truly another and a major challenge for the scholarly, literary, artistic, practitioner, and policy communities ... What now matters more than anything is our capacity to respond rapidly and efficiently to linked societal and environmental challenges. (Palsson et al., 2013, p. 10)

As a curriculum theorist studying the intersections of the environmental humanities, curriculum studies, and sustainability education, I recognize and appreciate the power of story in approaching the complexities of sustainability issues (such as climate change). Noel Gough (2008) writes that life storytelling involves inquiry into lived experience and re-presenting “that experience in a narrative form that provides rich detail and context about the life (or lives) in question” (p. 484). In this section, I reflect on my experience in the academy and argue that in higher education for sustainable development (HESD) we need to create the space that is necessary for students to reflect on their unique lived experiences and to tell their stories. We need to shift from an efficiency-based and fast transfer of knowledge educational approach to an education that promotes reflection and provides the space for spontaneity, mystery, wonder, and embracing the unknown—all of which are inherent to the humanities (Hensley, 2018). Allison

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and Miller (2019) posit that scholars in the humanities “interpret human history, literature and imagery to figure out how people make sense of their world” (n.p.). Also, humanists “challenge others to consider what makes a good life and pose uncomfortable questions – for example, ‘Good for whom?’ and ‘At whose expense?’” (Allison & Miller, 2019, n.p.).

The ever-expanding surplus of literature that addresses sustainability is overwhelming, even for those in the field of sustainability studies, as I am. However, in the midst of the proliferation of sustainability scholarship, the value of contextualized research continues to increase. The environmental humanities are well positioned to help contextualize and traverse the transdisciplinary terrain of sustainability research. Storytelling is one approach to integrate the breadth of disciplines necessary for advancing sustainability studies. Mike Hulme (2011) observes that the “importance of story-making and story-telling around climate change needs elevating alongside that of fact-finding. Stories are the way that humans make sense of change and the humanities understand the practices of story-telling very well” (p. 178). The art of storytelling fits well within the humanities. However, the effort to better infuse storytelling in communicating environmental issues requires a transdisciplinary integration across all disciplines (Holm et al., 2013; Kitch, 2017). It is key that effective cross disciplinary communication of environmental information is grounded in the humanities and it is time to view this communication as a top priority.

The existential and urgent threat of climate change and its associated ecological crises necessitates that higher education marshals its available resources to address it (Smith, 2014). Elliott, Domodaran, and Cullis (2018) define the humanities and their role in the context of climate change. They say, “Understood as the study of human experience and the ways in which people have expressed their experiences, the humanities, we argue, should be more confident and vocal in addressing the climate change debate” (p. 15). Although the humanities understand human experience and storytelling well, we must also draw from other disciplines to tackle climate change. The natural and social sciences and the arts must be included with the humanities in addressing wicked sustainability problems. Elliot, Domodaran, and Cullis (2017) explain, “The growing acceptance that a multi-disciplinary approach is needed requires also an acceptance that the climate change debate has itself been constructed through a variety of discourses historically, scientifically, in and through society, politically and economically. It is therefore important that the humanities are included at all stages of this crucial debate” (p. 16). Integrating the humanities throughout climate change writing and debate involves the art of storytelling.

Storytelling and Sustainability

It's all a question of story. We are in trouble just now because we do not have a good story. We are in between stories. (Thomas Berry, 1978, p. 1)

Storytelling is the oldest form of education. (Terry Tempest Williams, 1997, p.4)

Another point worth remembering is the way these interrelationships [across the web of life] work, how intricately they are woven into the fabric of the whole, including how living things became what they are. (Sigurd Olson, 1998, p. 70)

Storytelling is an effective way to reach students as they work to understand sustainability and reinhabit their places. It is through story that we can learn to make sense of our lived experience, celebrate the places we live, and comprehend the relationships and interdependencies which make up the web of life (Hensley, 2020a). Educational theorists Molthan-Hill et al. (2020) explain that

Since the beginning of humankind, humans have lived their stories. Stories have provided a way to condense knowledge and practical experience; as well as to communicate world-views. Stories have aided humans throughout many centuries to describe problems and seek solutions, to object against the status quo and to express wonder at life's blissful encounters; stories have provided refuge, solidarity and solace. Perhaps above all, stories have educated, if we consider the root of the word as *educe*, to draw out what lies latent within us. (pp. 1-2)

Humans learn best through story because it is through narrative that we discover the intersection of ideas and the *patterns that connect* (Bateson, 2008). That is, stories highlight and enliven the interconnections and interdependencies that are commonly overlooked. Stories enable us to expand our sensibilities and competencies surrounding sustainability topics. Molthan-Hill et al. (2020) add that

...storytelling in the context of sustainable development can supplement in a very powerful way, the facts which might otherwise form the core of teaching activities. Stories allow for a greater 'stickiness' because they 'allow a person to feel and see the information, as well as factually understand it . . . you 'hear' the information factually, visually and emotionally.' (Neuhauser as cited in Molthan-Hill et al., 2020, p. 5)

The value of story is further highlighted in the interpretation of natural areas. Nature interpretation involves mediating knowledge about and evoking feelings for nature and the cultural landscape (SCNI, 2017). By telling stories, naturalists are able to convey complex ecological concepts that cannot be effectively communicated through sharing bulleted facts and figures. Molthan-Hill (2020) observe that the "teaching of sustainability, as well as public discourse on the subject, is often dominated by facts and figures" (p. 4). Science is concerned with verifiability, reproducibility, and empirical fact, but, communicating science to a general audience is an art that requires good storytelling.

Hensley (2020a) indicates that stories "enable students to uncouple from unsustainable worldviews and make sense of the ecological crisis. Stories help students acknowledge the human role in the ecological crisis and empower students to initiate the process of generating sustainable solutions" (p. 28). Initiating the process of generating sustainable solutions is at the intersection of sustainability education and public impact. When students learn both to tell their own story (autobiography/autoethnography) and to study the story of their surrounding bioregion

through place-based education, then they are well-positioned to generate sustainable solutions (Hensley, 2011, 2020b). For example, in my graduate level course on sustainability education, I give an assignment—inspired by the founding father of bioregionalism, Peter Berg (2005)—that requires my students to create a subjective map of their unique bioregion. On this bioregional map, students are instructed to determine their own spatial scale, put their home/apartment in the center, sketch the nearest river, include soil type, list sustainable practices of the community members, etc. This assignment serves as a launching point for discussion about sense of place, ecological literacy, and watershed studies. This assignment allows students to sample autobiographical work as they create a map from their own perspectives, acknowledge the interconnectedness of the natural and built environments, and articulate their role in the bioregion. This leads to reinhabitation-oriented thinking which Berg and Dasmann explain as:

[L]earning to live-in-place in an area that has been disrupted and injured through past exploitation. It involves becoming native to a place through becoming aware of the particular ecological relationships that operate within and around it. It means understanding activities and evolving social behavior that will enrich the life of that place....Simply stated, it involves applying for membership in a biotic community and ceasing to be its exploiter. (In Smith & Williams, 1999, pp. 214-215)

Advancing reinhabitation-oriented practices is at the core of place-based education and is demonstrated through bioregional scholarly literature (Glotfelty, 2014; Hensley, 2013). Learning about the ecological connections in one's place and developing a mutually beneficial relationship with nature necessitates a great amount of effort and focus, which opens up lines of inquiry to promote this level of reinhabitation (Hensley, 2013).

Reinhabitation involves learning the nuances of a particular ecosystem and identifying pathways to ecological restoration (Hensley, 2011, 2013). Steffen et al. (2018) state that:

Addressing [sustainability] questions requires a deep integration of knowledge from biogeophysical Earth System science with that from the social sciences and humanities on the development and functioning of human societies. Integrating the requisite knowledge can be difficult, especially in light of the formidable range of timescales involved. Increasingly, concepts from complex systems analysis provide a framework that unites the diverse fields of inquiry relevant to the Anthropocene. (p. 8253)

Uniting diverse fields of inquiry relevant to the Anthropocene and integrating knowledge from the sciences, the arts, and the humanities are among the most important tasks of today's scholarship (Hensley, 2016, 2020a). A holistic and unifying approach to sustainability research is urgent and complicated. It is complicated because conventional research is not transdisciplinary, and transcending traditional approaches to research involves a great deal of external motivation and collaboration. Yet, if we don't motivate and exert the effort, we might experience ecological collapse.

The environmental humanities are helping to mobilize the forms of collaboration necessary to advance transdisciplinary sustainability studies. This is exemplified in programs

such as the Humanities for the Environment (HFE, 2020). The Humanities for the Environment project networks universities and researchers internationally through a system of observatories. These observatories aim to identify, explore, and demonstrate the contributions that humanistic and artistic disciplines make to solving social and environmental challenges (Holm et al., 2015). This is just one example of many that illustrate projects underway that advance the environmental humanities and continue to advance sustainability across the globe.

Conclusion

Learning to stay with the trouble of living and dying together on a damaged earth will prove more conducive to the kind of thinking that would provide the means to building more livable futures. (Duke University Press, n.d., n.p.)

Too much attention to scientific detail can rob one of awareness and deeper meanings. (Sigurd Olson, 1998, pp. 69)

With the high level of socio-ecological uncertainty associated with the Anthropocene, it is becoming even more imperative to infuse the environmental humanities into higher education for sustainable development. We have an obligation to teach the next generation to be able to navigate unknown waters while “staying with the trouble.” Learning to “love the questions” is a component of staying with the trouble as is being able to reflect upon and tell the stories of our unique lived experiences. Integrating stories into sustainability education is a holistic way to counter the fragmentation and management approach common to sustainability science.

As the nature writer Barry Lopez (1988) states, “One learns a landscape finally not by knowing the name or identity of everything in it, but by perceiving the relationships in it...” (Lopez, 1988, p. 64). Through storytelling we can help students learn to perceive the relationships in nature without overemphasizing the importance of knowing all of the scientific names in an ecosystem. The humanities allow us to better appreciate a wicked problem’s intractability and enable us to hold our assumptions open to questions. The reflective space offered by questioning our assumptions is fertile ground for creativity and transdisciplinary inquiry. Thus, when we recognize that the voice of the humanities is largely missing from the literature pertaining to tackling wicked sustainability problems, we can initiate the steps to address this issue within sustainability education and beyond.

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