



Ontological Awareness in Food Systems Education

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We observe efforts in Sustainable Food Systems Education and Critical Food Systems Education literature to employ education in ways that seek social and environmental transformation of food systems. Here, we argue that forms of food systems education that are disconnected from awareness of their ontological roots are destined to reproduce the same food systems with the same consequences for life on Earth. This theoretical paper invites discussions that unpack “habits of being” underpinning modern/colonial conceptualizations of food system issues, transformation efforts, and pedagogies. We note the risk of reinscribing, within food systems education, specific onto-epistemological norms and values that are the root of multiple crises facing food systems (separability, global capital, nation-states, humanism). Using the metaphor of the “house that modernity built,” we invite scholars, teachers, learners, and other practitioners to bring explicit attention to how the ontology of Western modernity arises in discourses on food systems and is reproduced through food systems education. We begin by describing this ontological position and its dominance, situating how contemporary transformations in food systems education neglect ontological foundations, and enumerating a set of harms arising from this disavowal. As a beginning, we suggest that fields related to food systems are a compelling place to interrupt a habit of being that denies and disavows even the presence of ontological positions. Food systems educators within postsecondary institutions are entreated to develop their analyses and pedagogical approaches toward a more just and sustainable future that denaturalizes harmful and falsely universalized ontological foundations.

Keywords: food systems education, western modernity, food systems transformation, ontology, epistemology–education

Through the imagery of a tree, Ahenakew (2016) illustrates how ontology can be viewed as the root of an intellectual and cultural tradition, while epistemologies, or ways of knowing, form the upper trunk and branches, and methodologies are represented by fruits. There are many different types of trees, and thus many different roots. Many knowledge traditions include considerations of the different ways of being and different natures of reality at their roots, and, in so doing, keep ontological foundations explicit. Others fail to consider the impact of assuming that their ontological foundations are universal. There are a diverse variety of roots both within Indigenous intellectual traditions and within traditions of non-Indigenous peoples. In this paper we focus on the common ontological foundation in modern/colonial practices, institutions, and narratives that

are dominant in Western academies¹. Normative prescriptions for transforming food systems education (Valley et al., 2018, 2020; Anderson et al., 2019) do not explicitly identify the modern/colonial ontological positions that underpin globalized, capitalist, and industrial food systems. Without identifying, interrogating, and denaturalizing the ontological roots of our currently dominant food system, pedagogical interventions will often presume a “free-floating” “rational” learner potentially resulting in methodological or even epistemological shifts (Rosiek et al., 2020), but ultimately leaving unexamined the underpinnings of the dominant global food system² and its modern/colonial habits of being. Montenegro de Wit (2021a), for example, examines the fallacy of the apparent dichotomy of gene editing and agroecology that leads to superficial analysis.

We foresee a set of significant issues arising when proponents of the transformative role of food systems education (FSE) ignore the ontological “root” of Western modernity/coloniality. We are particularly concerned about transformative efforts that engage the branches and fruits of other knowledge traditions. For example, FSE instructors might employ a talking circle approach (i.e., a methodological or epistemological change) while ignoring the Indigenous worldviews and traditions that comprise the talking circle’s ontological “root.” Similarly, this ignoring may happen with the teaching method of asking racialized students to describe their presumed cultural food systems to illustrate alternatives to dominant food systems without taking the time to discern the ontological differences between cases or preparing students for this level of analysis. When these different roots are ignored, there is a risk of reproducing harmful and extractive patterns of engagement with non-Western knowledges—including universalizing, appropriation, instrumentalization, and romanticization—thereby leaving untouched the modern/colonial habits of being that underlie mainstream food systems education (Ahenakew, 2016). For example, Indigenous ontological rootstocks that recognize animate landscapes and agential ecosystems can be reduced to “cultural beliefs” by Western sciences rather than equally valid and valued ways of knowing, being, and relating in the world (Blackstock, 2001; Marker, 2006; Blaser, 2009; Bang et al., 2012; Watson, 2013).

For these reasons, food systems education programs in agroecology, food studies, nutritional sciences, agronomy, economics, public policy, etc., should interrogate individual,

disciplinary, and program-level ontological assumptions to recognize how these ontologies manifest, or are hidden, within postsecondary pedagogical projects.

WHAT IS WESTERN MODERNIST ONTOLOGY?

Mignolo (2011) describes Western modernity as a parochial European narrative, coupled with sets of practices, institutions, and sensibilities, that builds Western civilization by celebrating its achievements while ignoring the invisible costs of those achievements for other humans and other-than-human beings. Coloniality, he argues, is constitutive of modernity, hence the expression “modernity/coloniality.” Building on the scholar Quijano’s insights, Mignolo (2011) posits a colonial matrix of power comprising four entangled domains, “control of the economy, of authority, of gender and sexuality, and of knowledge and subjectivity” (p. 8), which are supported by racial and patriarchal foundations of knowledge.

Stein et al. (2017) use the metaphor of the “house that modernity built” (p. 73) to illustrate modernity’s primary dimensions. The house has a “foundation of separability” (p. 73) that “separates humans from one another, ranking them into racial and civilizational hierarchies” (p. 73), and rationalizes the use of the world “as a source of raw materials and labor for its own upkeep” (p. 73). It has a supporting wall of European Enlightenment humanism that “presumes a linear and universal path of human progress that positions European/White people (particularly men) at its head, while all others are deemed to have a lower ‘degree of mental’ (moral and intellectual) ‘development’ (Silva, 2007, p. 123)” (p. 74). Another supporting wall is a fictional social contract that rationalizes the modern nation-state’s “law-instituting violence (the appropriation of resources, land, and labor to build the house), as well its law-preserving violence through the police and the military” (p. 73). The house also sits under a failing roof of capitalism that “appears as a betrayal of the promise that the market will reward hard work” (p. 75) and casts blame especially on “those outside the house, when in fact it is they who are likely to suffer most” (p. 75). The house is inherently harmful and unsustainable, given that it requires unlimited growth and consumption on a finite planet. They frame the elements that make up the house as the root causes of contemporary social and ecological crises.

Coulthard (2010) argues that Indigenous ontologies are at odds with this modernist worldview and mode of being and relating, illustrating this difference with the example of his own Dene ontology:

In the Yellowknives Dene (Weledeh) dialect of Dogrib, “land” (dè) is translated . . . as that which encompasses . . . people and animals, rocks and trees, lakes and rivers, and so on . . . we are as much a part of the land as any other element . . . human beings are not the only constituent believed to embody spirit or agency. Ethically, this meant that humans held certain obligations to the land, animals, plants, and lakes in much the same way that we hold obligations to other people (p. 80).

¹We acknowledge that the foundationalism of ontology as more primary than epistemology is debated within Western and non-Western sources (Burton, 2018), and also that sometimes Indigenous and Western use of the word epistemology includes metaphysics, ontology, and ethics (Fellner et al., 2020).

²While a review of the global food system literature is beyond this perspective paper, we encourage readers to explore this literature as there are some resonances with the analysis of food systems (see Clapp and Fuchs, 2009; Clapp, 2012; McMichael, 2021). We note that global food systems share a common Western modernity/coloniality foundation, and that assumptions and analyses based on neoliberalism, liberalism, or critical perspectives can share this commonality (Pashby et al., 2020). In this piece, we highlight that the ontological foundations are often missing as the Western modern/colonial ontology presumes universality. When food systems education and global food systems analysis enter conversation due to their common goal of achieving social change, we encourage them not to reproduce the same hegemony of ontologically singular visions of the future.

This orientation “serves as the ethical foundation from which many Indigenous people and communities continue to resist and critique the dual imperatives of state sovereignty and capitalist accumulation that constitute our colonial present” (p. 82). This relational and reciprocal orientation to land as a living entity contrasts starkly with Western ideas of land as property to be owned and exploited for profit by humans.

REPRODUCTION OF WESTERN MODERNIST ONTOLOGY IN FSE

In response to the increasing socio-ecological complexity of contemporary food systems (Jordan et al., 2014; iPES-FOOD, 2015), Canadian and US higher education institutions are developing new degrees, specializations, and certificates that center systems thinking, multi/inter/trans-disciplinarity, community-based experiential learning, and equity (Jacobsen et al., 2012; Self et al., 2012; Jordan et al., 2014; Hartle et al., 2017; Valley et al., 2020; Sterling et al., 2021). However, universities are steeped in and contribute to the reproduction of a political-economic system that privileges neoliberal and market logics, the elite status of Eurocentric knowledge systems, and the production of research that fails to address the root causes of systemic oppression, marginalization, dispossession, and ecological destruction (People’s Knowledge Editorial Collective., 2017; Grande, 2018).

A key and shaky assumption in analyses of contemporary food systems is that solutions generated from within the current modern/colonial paradigm can address today’s complex socio-ecological problems. However, drawing on the metaphor of the house modernity built, solutions sourced from within the house are unlikely to be sufficient for addressing the problems that the house itself has created. While adjustments or reforms may enable institutions to weather the immediate storm and reduce some harms, taking the long view of structural transformation may require the “non-negotiable termination of the many discrete, yet ‘locked in’ elements of the industrial agrifood regime” (Montenegro de Wit, 2021b, p. 121), or compassionately hospicing their transformation as we envision multiple possible futures (Machado de Oliveira, 2021).

Two main alternative fields of food systems education are Sustainable Food Systems Education (SFSE; Jordan et al., 2014; Valley et al., 2018; Ebel et al., 2020) and Critical Food Systems Education (CFSE; Meek and Tarlau, 2015, 2016; Anderson et al., 2019). Both SFSE and CFSE advance, at varying levels, community-engaged scholarship, elements of decolonizing education, an appeal to incorporate equity and social justice, recognition and application of different epistemologies and methodologies (e.g., Indigenous, Black, Queer, Feminist), and some recognition of ontological diversity. An example of an acknowledgment can be found in a CFSE publication that states that its purpose is

to [lever] the broader educational system and innovative pedagogical techniques so that students and educators can utilize food system knowledge and agroecological practices to systematically *dismantle the structural and ideological elements of*

the corporate food regime and develop transgressive subjectivities. [emphasis added] (Sawyer, 2004, as cited in Meek et al., 2019, p. 612; see also Meek and Tarlau, 2015, 2016).

Here, the emphasis is on epistemological and methodological transformation, although there is the potential for this to be extended to an ontological dimension if the approaches to transgression, or dismantling, recognizes the limits and harms of a singular, universal modern/colonial way-of-being/nature-of-reality.

Food systems decolonization scholars such as Matties (2016), Kepkiewicz (2015) criticize settler discourses about place in food systems education for failing to acknowledge a plurality of worldviews. Similarly, Williams and Brant (2019) note the implicit colonial underpinnings employed in claims to equity and social justice within “neutral” educational approaches. Those engaged in decolonizing food systems point to modern/colonial worldviews and subjectivities as important sites of scholarship and subsequent intervention (Morrison, 2011; Martens et al., 2016; Rotz, 2017). As an example, Rotz (2017) shows how settler farmers in the province of Ontario, Canada construct settler identities by “occupying socio-symbolic spaces of perseverance, resilience, resourcefulness, and self-reliance, while on the other hand constructing Indigenous peoples in uncomplicated spaces of dependence, irresponsibility, irrationality and violence” (p. 163).

A key challenge that remains for transformative food systems education is how SFSE and CFSE are engaging with a growing and shared critique of modernity (e.g., Stein et al., 2017). This might require unlearning harmful patterns which can then enable educators and learners to explore and co-create alternative ways of being, interrupting the sanctioned ignorance that forecloses recognition of other ontologies, and leading efforts to address our mutual entanglement, complicity in violence, and acceptance of planetary limits. However, it remains difficult for us as SFSE and CFSE scholars to raise awareness of, and interrogate, our own ontological positions that underpin our pedagogies. We acknowledge the contradiction and tension of this central challenge—to critique our modern/colonial ontology as practitioners in the formality of a traditional academic article without reproducing this worldview.

Another approach arises within Indigenous-led post-secondary institutions and land-based pedagogies³. Writing from the First Nations Technical Institute in Tyendinaga Mohawk Territory Ontario, Canada, Williams and Brant (2019) state that in the development of Indigenous food systems education,

the primary goal [is] the revitalization of Indigenous identity in relation to the individual, family, community, nation, and natural

³It is often the case in Western framings of the food system that they are all one and the same. Indigenous food systems and onto-epistemologies are not “alternative” and are often othered or romanticized. As settlers living on unceded and stolen lands we have a responsibility to question how we teach students to understand their responsibility to settler colonialism. We also note the contradictions that may arise in the reading of this section as it suggests comparisons that we note are not hierarchically positioned nor placed into competition.

and spiritual World. Indigenous food systems degree program will support learners to first restore or strengthen their own cultural fluency and then to learn about the various dimensions of Indigenous food system revitalization, all of which are grounded in both Haudenosaunee worldviews and traditional ecological knowledge (p. 134).

The central educational task is one of building relationality and reciprocity with ways of being. For non-Indigenous peoples, we draw attention to the difficulty of engaging with Indigenous food systems approaches without appropriating, instrumentalizing, extracting, or romanticizing them, and the inseparability of worldviews from epistemological and pedagogical dimensions. Yet if enacted with trust, respect, reciprocity, consent, and accountability (Whyte, 2020), these engagements with Indigenous food systems, without making pan-Indigenous overgeneralizations, can serve as an important reminder to non-Indigenous peoples that modern/colonial food systems are not the only possible approach, and in fact they have come at great cost to Indigenous peoples, marginalized communities, and ecological wellbeing.

HOW A DENIAL OF ONTOLOGICAL POSITION IS HARMFUL

We argue for denaturalizing dominant pedagogical models of food systems education while also problematizing efforts to incorporate different ways of knowing, teaching, and learning that do not acknowledge the harms that arise from a falsely universalized way of being. This is the propensity of the modern/colonial way of being that sees knowledge as a “commodity to be exported to those whose knowledge was deviant or non-modern” (Mignolo, 2011, p. 13). Educational interventions at the level of methodology/epistemology tend to presume the problems with the current dominant food systems are problems of ignorance, instead of deeper problems of ontology and investment in the continuity of the promises offered by the house of modernity, including denials of the hidden harms, and processes, that are required to sustain the house itself. As an example, we provide questions that map onto different layers of

analysis of and intervention in food system education and social systems (Table 1).

In describing and applying the “house that modernity built” (Stein et al., 2017, p. 73) metaphor, four denials emerge in relation to Western modernist ontology:

- The denial of systemic violence and complicity in harm,
- The denial of the limits of the planet,
- The denial of being entangled with and responsible to other beings,
- The denial of the depth and magnitude of the problems that we face (Gesturing Towards Decolonial Futures, 2018, para. 2; <https://decolonialfutures.net/4denials/>).

These denials have ramifications for the analysis of global food system problems. For example, the problem of food security for those living within the house is due to scarcity of agricultural products, lack of education, and inefficient resource use. Montenegro de Wit (2021a) notes that the 2021 UN Food Systems Summit’s Scientific Group maintains that “genetic engineering and biotechnology should be applied to increase the productivity, quality and resistance of crops to pests and drought ... To widen access to bioscience technologies, intellectual-property rights, skills and data sharing should be addressed” von Braun et al., 2021, cited in Montenegro de Wit, 2021a, n.p. Within the framework of coloniality-modernity, this statement is normative and logical. There is no mention, thus a denial, of unsustainable growth and violence to people, planet, and more-than-human entities (Montenegro de Wit, 2021a).

We add a fifth denial, that is, the denial of embodying an ontology at all—a claim of ignorance, and a subsequent disavowal, that our perspectives and knowledges are shaped by our social positionalities and experiences, and thus, denial of the fact that it is impossible for us to claim the position of objectivity and a “view from nowhere” that is able to see and know everything. This disavowal perpetuates and reinforces a violent, unsustainable, and exclusionary vision of existence in which one particular way of being is framed as universal and superior, and all other ways of being are invisibilized and/or pathologized as less advanced and “developed.” This disavowal has been mobilized not only to denigrate but also to justify the destruction of other

TABLE 1 | Example questions for different educational interventions in food systems education.

Methodological	Epistemological	Ontological
How can we educate students to become better “food citizens”?	Whose understanding of food system issues/challenges is privileged? Whose is marginalized?	How does a dominant worldview foreclose the range of what is possible, normal, “good” for the future of food systems?
What kinds of tools/practices are foundational for future professionals to develop solutions to food system challenges?	How might different ways of knowing about food and food practices influence our understanding of the human right to food?	What would it look like, and feel like, if students were responsible to all the beings (both human and other-than human) that enable a food system to exist?
How can we teach students about different peoples’ foods and food practices to build understanding and intercultural harmony?	What kind of analytical lenses are necessary for students to understand their role in global food system problems (both in solving them and benefiting from them)?	How can we open ourselves up to multiple worldviews with multiple understandings of how food figures in different peoples’ existence?

ways of being, and in turn, to enact a further disavowal of one's complicity in that violence. Without acknowledging the hegemony and harm that have been enacted by the attempted universalization of western ways of being, it will not be possible to confront and accept accountability for the first denial: that one is complicit in the harm that this attempted universalization has caused to those who embody other ways of being.

It is important to note that even within critical approaches to social and global challenges, including those of food systems, these denials can be present to varying degrees. The desire to “be good” or to construct learners as “transformative agents,” “global citizens,” or “systems thinkers,” may hide how the above four denials reproduce harm. For example, the FAO calls for transformative efforts to achieve the UN Sustainable Development Goals by emphasizing “technology, innovation, data, and complements [(governance, human capital, and institutions)]” (United Nations Food Agriculture Organization, 2021, p. 13), that are tightly coupled to agri-corporations and opening markets in Asia, Africa, and Latin America. It is imperative that ontologies and epistemologies that gesture to different ways of being and thinking are not reductively laid on top of a falsely universalized Western modernist ontology (Ahenakew, n.d., p. 3). For instance, when we situate the desire to “fix problems” as common sense and categorize problems hierarchically and separately, as we often do in the “broken food system” discourse of global development (Easterly, 2002; Moyo, 2010), this likely rests on a worldview that glorifies linear technological progress and apolitical scientific analysis: “the need for universal measurement and easily replicable indicators is limited to the project of constituting poverty as an object of management . . . in ways that render it subject to regulation and which can contain and limit its potential as a radically disruptive political problematic” (du Toit, 2009, p. 240).

If we draw on the critique of the supposed benevolence and universalism of a modernist ontology, this will likely shift how we approach food systems education in post-secondary institutions. This critique suggests that “we cannot expect capitalism, the state, or Enlightenment humanism, to fix the problems that capitalism, the state, and Enlightenment humanism have created” (Andreotti et al., 2018, p. 28). The denial of an ontological position reinforces a homogenizing, essentializing vision of existence, casting science practitioners who examine alternatives to positivism as committing a moral wrong by engaging with subject matter deemed outside the field of science (Leahey, 1980). Thus, it is difficult to address the intentional disavowal of acknowledging an ontological position when there is a taboo about discussing being, existence, and identity in scientific theory and in natural science education itself. It is difficult to move beyond this circularity, especially given that many of us lack the language or pedagogical frameworks with which to address it.

Extending this argument further, the pursuit of Western modernist ways of being also limits, prevents, and suppresses Indigenous ways of existing and relating (Little Bear, 2000; Marker, 2006; Blaser, 2009; Bang et al., 2012). Rather than only trying to school for deeper and more nuanced thinkers, food systems educators need to question the presumption of our ability to plan and achieve an imagined future on behalf

of all people and the planet (Amsler and Facer, 2017; Osberg, 2018). Current challenges arise from a “modern-colonial habit of being” (<https://decolonialfutures.net/4denials/>, para. 1), rather than merely from gaps in our knowledge and skills (Mika, 2012; Stein et al., 2017).

Western modernity reduces being to a mechanistic and commodified materiality of individual bodies and neurological functioning (Ahenakew, n.d.). The belief that the world can be reduced to our knowledge of it, and to naturalized cognitive and declarative forms of knowledge, presents the status quo of food systems education as permanent and immutable and forecloses alternatives (Bhaskar, 2016). This failure to comprehend an ontological position, coupled with intentional maintenance of ignorance, denial, or “colonial unknowing” (Vimalassery et al., 2016, para. 1), serves to reinforce a singular, immutable reality for those who benefit most from Western modernity. Thus, patterns of epistemological *and* ontological dominance remain in place, and cognitive injustice continues to be a central object of critique in Indigenous studies and other fields (Battiste, 1998; Kuokkanen, 2008). Kuokkanen (2008) notes,

sanctioned ignorance—the way in which “know-nothingism” is justified and even rewarded in the academy—is “of heterogeneous provenance,” manifesting itself in various ways (Spivak 1999, x). It refers to academic practices that enable the continued foreclosure of the “native informant” by not acknowledging her role in producing knowledge and theories. Sanctioned ignorance also relates to ways in which intellectual practices obscure contemporary concerns such as global capitalism and neocolonial processes. Sanctioned ignorance is, therefore, inseparable from colonial domination (Spivak 1987, p. 199). (Kuokkanen, 2008, p. 62).

IMPLICATIONS AND SYNTHESIS

As many academic fields, including food systems education, move to confront their colonial foundations and western-centric curricula, we suggest the need to be mindful of the risk that emergent and alternative ways of being and thinking are carelessly subsumed, grafted, or absorbed into a falsely universalized Western modernist ontology (Ahenakew, n.d., 2016). When this happens, these changes serve more as window-dressing than as a substantive transformation of existing paradigms, and they fail to attend to the accountability of our fields and institutions to redress the harmful impacts of centuries of colonial oppression. While practitioners and educators might already be familiar with the importance of recognizing various ways of knowing and ways of doing research (Moon and Blackman, 2014), transformations only at the level of research epistemologies may leave ontological foundations undisturbed (Rosiek et al., 2020). Thus, during the present ecological crises, food systems educators and learners may continue to unknowingly dwell in the crumbling house of modernity even as routine epistemological crises continue to unfold with little effect.

In SFSE, CFSE, and Indigenous food systems education, we observe efforts being made to employ education in ways that seek

transformation. We argue that forms of food systems education that are disconnected from their ontological roots are destined to reproduce the same food systems with the same consequences for life on Earth. We argue that ways of being based on the house of modernity—colonialism, capitalism, the nation-state, universal Enlightenment rationality, anthropocentrism, binary gender, and separability—are positioned and internalized so that solutions and reforms serve to reproduce these same systems of oppression. Instead, we echo calls to gesture toward onto-epistemological possibilities beyond the limits of current educational efforts conditioned by global capitalism and modernist understandings of the learner (de Oliveira Andreotti, 2014). We are not offering up these possibilities in this paper because it would reproduce the modern promise of self-fulfilling outcomes and certainties. Rather, we are arguing for an awareness of a dominant onto-epistemology and a role for higher education to play in bringing critical awareness. This entails holding space for those of us who work and study within higher education so that we can grapple with the limits of modern/colonial onto-epistemological possibilities, engaging in ethical ways with other existing possibilities, and experimenting with new possibilities that have yet to be imagined.

Recalibration is required to shift our relationships with ways of knowing and being, with traumas and fears, and with ourselves as entangled parts of a broader metabolism. Contemplate the magnitude of the educational task before us: the task of decentering and disarming the modern subject and her/his/their strong desires for progress, futurity (conservation of privilege and perceived entitlements), innocent anthropocentric agency, and totalizing forms of knowledge

(Tuck and Gaztambide-Fernández, 2013; de Oliveira Andreotti, 2014). These desires normalize and naturalize the hegemony of modern subjects in defining the terms of engagement with different ways of being and prevent the emergence of other possibilities of co-existence.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article, further inquiries can be directed to the corresponding author/s.

AUTHOR CONTRIBUTIONS

CD, DC, WV, TC, and WM contributed to conception and design of the perspective piece, including contributing to discussions, literature reviews, and description of lived and professional experiences. CD wrote the first draft of the manuscript. All authors wrote sections of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

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