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Muskrat theories, tobacco in the streets, and living Chicago as Indigenous land

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Muskrat theories, tobacco in the streets, and living Chicago as Indigenous land

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In this paper, we aim to contribute to ongoing work to uncover the ways in which settler colonialism is entrenched and reified in educational environments and explore lessons learned from an urban Indigenous land-based education project. In this project, we worked to re-center our perceptual habits in Indigenous cosmologies, or land-based perspectives, and came to see land re-becoming itself. Through this recentering, we unearthed some ways in which settler colonialism quietly operates in teaching and learning environments and implicitly and explicitly undermines Indigenous agency and futurity by maintaining and reifying core dimensions of settler colonial relations to land. We describe examples in which teachers and community members explicitly re-engaged land-based perspectives in the design and implementation of a land-based environmental science education that enabled epistemological and ontological centering that significantly impacted learning, agency, and resilience for urban Indigenous youth and families. In this paper, we explore the significance of naming and the ways in which knowledge systems are mobilized in teaching and learning environments in the service of settler futurity. However, we suggest working through these layers of teaching and learning by engaging in land-based pedagogies is necessary to extend and transform the possibilities and impacts of environmental education.

Keywords: land education; urban Indigenous youth; place; place-based education; settler colonialism

Muskrat theories

Muskrat is an earth diver (Vizenor 1981).

> He finds home in shadowy wetlands – relational dynamisms between land and water – amongst the plant medicines that grow here.

Our elders know the story of why this is (Archibald 2008). Wetlands are places of continual birth, death, and rebirth.

> Scientists have said that wetlands are 'on the front lines' of globalization and climate change. They name wetlands as critical environmental niches, which are correlated with significant human survival and development. Ironically, in more recent human his-

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> tory, the depraved view of land as material has led to their filling or drainage without regard by nation states across the earth.

After annihilation, manipulation and removal of Indigenous peoples from particular lands, major cities were founded and expanded by filling wetlands, for example Chicago, formerly known as Shikaakwa, among others names of this land (Stryes and Zinga 2013). The filling in of wetlands – their intended erasure – can be viewed as perhaps a climatic move of settler colonialism – the attempted replacement of original lands with new land structures.

> Chicago is a wetland that becomes part prairie and part oak savannah. It's hard to see with the *layers of colonial fill*, but actually it's hiding in plain sight (Brayboy 2004). The wetlands are (re)becoming themselves. Despite the centuries of attempts of erasure, remaking, and geographical violence (Said 1994), the emergence of land and water in dynamic relationships and the life it supports, emerges.

Rebirthing of Land is not new, if we remember, as we find our way in becoming. Indigenous people live *in* the wetlands of Chicago and Shikaakwa.

> Generations of Indigenous nations have been in relations – ancestral, medicinal, migrational, and economic – with these wetlands. An elder in the Chicago Native community took us for a walk through the alleys of Chicago and pointed out our plant relatives. Literally, asema (tobacco, and not the genetically altered form bred for colonial agriculture) grows in the cracks of pavement here, and grows in contested lands, normatively known as forest preserves. Asema – sprinkled throughout the city, in emergent unforeseen places, because Land is always re-becoming itself.

This is true for us

> even if current practices and politics of recognition, territory, and morality don't concede, yet.

After all muskrat lives in and between land and water.

Tobacco in the streets

Almost 15 years ago, Indigenous elders began walking the perimeter of the Great Lakes to bring awareness to the declining health of the lakes and the earth at large (see www.motherearthwaterwalk.com). The Great Lakes ecosystems are the home to many Indigenous nations and are the largest body of freshwater in the world. They are also experiencing significant decline and said to be facing ecological collapse. These walks continue to occur to raise awareness and seed change for the Great Lakes. Members of the Chicago[1] inter-tribal American Indian community[2] participated in one of these walks nearly a decade ago. Compelled by the message of the walks, along with several other serendipitous affordances and enduring efforts to ensure cultural and sovereign continuity, a research project involving over a hundred community members came together to develop innovative science learning environments for Native youth, families, and community living in Chicago. As some of our readers will know and others will not, the opening of this article emerges from the stories of the people from these Lands. This paper is intended to voice some of what we have learned and the tensions we encounter as we continue to work our 'willful contradictions' (McKenzie 2004) toward 'decolonial imaginaries' of 'viable futures

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of survivance' (Grande 2004; Richardson and Villenas 2000; Vizenor 1994). For us, viable futures of survivance means working to move our practice beyond historicized us/them dichotomies and willfully contradicting common narratives of assimilated and landless urban Indians toward longer views of our communities and our homelands not enclosed by colonial timeframes.

Our authorship reflects the core teachers and one of the principal investigators of the research project. We come from six different nations (Ojibwe, Lakota, Choctaw, Little Shell Band of Chippewa-Cree, Miami, and Navajo), and each of us has various histories embedded in typified experiences of Indigenous peoples of North America. For some of us, Chicago is part of our original homelands and has figured centrally in the unfolding of our communities from ancestral time. Some of us have more recent relationships with this land set in motion by European contact and dispossession – relocation, removals, dispersals. Some of our parents or grandparents survived boarding schools, some were relocated here by federal policy, and some 'chose' to migrate here. Some of us are enrolled tribal members and some of us have 'descendant' status. Most of us are young and we have an elder among us. All of us have learned to live, be members of families, and make community in Chicago/Shikaakwa, consciously together.

Indigenous scholars have suggested that moving toward educational self-determination[3] requires the reclaiming, uncovering, and reinventing of our theoretical understandings and pedagogical best practices (e.g. Battiste 2002; Smith et al. 1999; Tippeconnic 1999). Trying to work within a methodological paradigm of decolonization (Smith 1999) we used several methodological tools to develop both theory and practice that empowered our community. We collectively worked to center Indigenous epistemologies and ontologies by (re)storying our relationships to Chicago as altered, impacted, yet still, always, Indigenous lands-whether we are in *currently* ceded urban territory or not. A critical dimension of the work was making visible the impacts of settler colonial constructions of urban lands as ceded and no longer Indigenous and concomitant views of naturalized settler futures (Tuck and Yang 2012) on our community and especially our youth. In this paper we will argue that the constructions of land, implicitly or explicitly as no longer Indigenous, are foundationally implicated in teaching and learning about the natural world, whether that be in science education, place-based education or environmental education. Learning about the natural world is a critical necessity given the socio-scientific realities (e.g. climate change) that are currently and will continue to, shape the lands and life that land supports, more specifically for present purposes the lives of both Indigenous and non-Indigenous peoples. For us science education, place-based education, and environmental education are critical sites of struggle because they typically reify the epistemic, ontological, and axiological issues that have shaped Indigenous histories (Brayboy and Castagno 2008). From a more hopeful perspective, we also see them as sites of potential transformings – forming a nexus between epistemologies and ontologies of land and Indigenous futurity. In our view, realizing this transformative potential will require engaging with land-based perspectives and desettling (Bang et al. 2012) dynamics of settler colonialism that remain quietly buried in educational environments that engage learning about, with and in the land and all of its dwellers.

In our experience, explicitly reengaging land-based perspectives in the design and implementation of a place-based science learning environment, what we call an emergent form of urban Indigenous land-based pedagogies, enabled epistemological and ontological balancing that significantly impacted learning for urban Indigenous

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youth and families (Bang and Medin 2010; Bang et al. 2010). In the remainder of this paper, we aim to contribute to uncovering the ways in which settler colonialism is entrenched and reified in educational environments. To do this, we provide a critical reading of educational environments that position place and nature as central to their approaches and learning objectives (e.g. place-based, environmental, and science education broadly construed). We include these three broad areas of scholarship because the learning environments that we developed were informed by and make contact with each in various ways. Further, while we do not intend to equate these three forms of education, we suggest that each, to some degree, utilize knowledge about the natural world derived from western scientific systems and settler-colonial relations to land and Indigenous peoples. Our critique is at a grain size that we believe either holds across these bodies of work and does not require the flattening or equating of them or that there are commonalities across them we hope makes visible the still entrenched settler-colonial dynamics that are endemic to education more broadly.

Settler-colonial informed readings of place in education

Both place-based education and critical pedagogy have been bounded by dichotomous and some might say competing discourses. On the one hand, place-based education seems to focus on the environments and ecologies of outdoor rural spaces, and on the other, critical pedagogies often focus on the urban, multicultural context (Gruenewald 2008). To broadly elevate the importance of place and to bridge these two approaches, Gruenewald (2003) proposed a critical pedagogy of place. Critical place-based education and eco-justice work have amplified voices resisting destructive forms of globalization and neo-liberalism and have helped to create an intellectual space connected to Indigenous realities as well (Sutherland and Swayze 2012). However, we continue to wonder about the liberatory possibilities for Indigenous people in current forms of place-based education. As Bowers (2003) argues, there are reifications of western intellectual traditions in place-based pedagogies that further silence some cultural communities. The reification of western intellectual traditions is often made possible by the denial or erasure of 'Indigenous points of reference,' which, as Marker (2006) points out, is a form of epistemic violence. While the denial or erasure of Indigenous points of reference may not be intentional, educational environments that uncritically mobilize them and leave settler-colonial interpretations silenced are complicit in this erasure.

In order to understand the effects of settler colonialism on place focused learning environments, we trace the ontology of settler colonialism and its subsequent impacts. Just as colonialism employs a grammar of race and inferiority; settler colonialism employs this grammar of race and inferiority but toward a logic of elimination (Veracini 2011). In settler-colonial societies, settler normativity is constructed through a set of dialectic relationships based upon circles of inclusion and exclusion in which the settler constructs himself as normative and superior vis-à-vis Indigenous and non-Indigenous others. This positioning of settlers is structurally maintained by employing a set of rules that are situated in and reify the circles of inclusion and exclusion (e.g. hypodescent and blood quantum).

The core of the settler-Indigenous dialectical structure is defined by the desire to erase or assimilate Indigenous people alongside a continued symbolic Indigenous presence (Wolfe 2006). Scholars of settler colonialism have argued that the

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conceptual construction of uninhabited land, a form of Indigenous absence, opens the space for settler majorities to establish their ways of knowing, doing and being as normative and morally superior and begin attempts to indigenize settler majority identities (Veracini 2011). In short, settler majorities simultaneously develop identities defined by manifest destiny and genesis amnesia (Bourdieu 1977). The process of erasure and sustained symbolic presence codifies a binary logic often taking the form of 'virtuous settler' and 'dysfunctional native' (Wolfe 2006) or the historicized 'Ecological Indian' (Friedel 2011) which underpins the structure of settler identity and is often encoded in learning environments.

In our view, pathways and pedagogies that make explicit and resist the epistemic and ontological consequences of settler colonialism (i.e. suppression and denial of Indigenous peoples' lifeways or encoding settler identities in learning environments) will be necessary for viable, just, and sustainable change. Land education does just that, and, in our view, at minimum, demands attention to two critical and oscillating issues born of settler colonialism: (1) the reification of what Mignolo calls the 'zero point epistemology' (2007), upon which western knowledge of the natural world is predicated, its anthropocentric consequences, and its continued devaluing and/or attacks on Indigenous ways of knowing (e.g. Semali and Kincheloe 1999) and (2) the absence or presence of indigeneity and the subsequent effects.

Indigenous presence and disruptions of the 'zero point epistemology'

Some scholars have suggested that the middle ages set in motion the creation of a 'zero point of observation and of knowledge,' or the 'zero point epistemology' (ZPE): a perspective that denied all other perspectives defined through forms of theo-politics and ego-politics of knowledge' (Castro-Gómez 2002; Mignolo 2007). The varying forms of absence (complete or partial) and the presence of Indigenous people in place-focused work is an example of the ZPE and teaches conceptions of place in the service of settler colonial legitimacy. This legitimacy rests on the need to 'disavow Indigenous presence' and to construct meanings of land as vast, uninhabited spaces ripe for discovery (Deloria et al. 1999; Veracini 2011); typically either fertile for human cultivation or endangered and in need of paternalistic protection. Mignolo (2007) argues that engagement with 'critical border thinking' is a necessary condition for change and is grounded in the experience of the colonies and subalterns. Engaging in critical border thinking, according to Mignolo (2007), is a shift to the geo- and body-politics of knowledge and a fracture of ZPE because borders are not just geographic; they are also epistemic and in our view ontogenetic. Many learning environments facilitate engagement with concepts and constructs developed within the ZPE, teaching and knowledge exchange, as well as understandings of human learning itself. For example, an analogous development of place-devoid constructions of knowledge has the been the development of locating learning in the mind as opposed to in or connected to one's body and to lands. However, there has been increasing work in the understandings of embodied cognition (Hall and Nemorovsky 2012), in theorizing relationships between mind and brain, physical health and mental health, and the relationships between culture and learning (e.g. Nasir et al. 2006).

Much of the place-based literature acknowledges the relationship between land and culture (e.g. Greenwood 2009; Gruenewald 2003; Gruenewald and Smith 2008) and calls for deep consideration of these relations, because, as Gruenewald (2003)

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points out, 'when we fail to consider place as products of human decisions, we accept their existence as noncontroversial or inevitable, like the falling of rain or the fact of the sunrise' (627). If we are to disrupt relationships to land that are constructed from the ZPE, then critical considerations of the ontological and epistemological foundations of much of the content being taken up and normalized in learning environments (see Bang et al. 2012 for concrete examples) is necessary. The challenge for place conscious educators is to create learning environments for new generations of young people that do not facilitate and cultivate conceptual developments and experiences of land that are aligned with 'discover(y)/(ing)' frameworks which elevate settlers' rationales for their right to land.

From a critical settler-colonial reading, place-based education, in which there is an Indigenous absence, even when relational pedagogies are prescribed, enables 'indigenizing settler majority' identities (Pearson 2002; Veracini 2011). For example, some place-based work theorizes that in order to counter the ways in which language use and institutions deny peoples' connections to place (Bowers 2002; Gruenewald 2003; Sobel 1996), innovative pedagogies that focus on the need to build personal relationships to place – to specific locals to 'rejuvenate carnal, sensory empathy with the living land that sustains us' (Abram 1996, 69) – must be developed. Gruenewald (2003) notes these types of arguments shift an emphasis from a discourse of change to a discourse of 'rooted, empathetic experience' (8). In an attempt to expand what rootedness might mean and opening a space for Indigenous presence, Gruenewald and Smith (2008), suggest that 'place consciousness must also include consciousness of the historical memory of a place, and the tradition that emerged there, whether these have been disrupted or conserved' (xxi). Importantly, however, just any form of Indigenous presence does not resist settler colonial paradigms, as many are reflective of the settler-Indigenous dialectical structure previously discussed.

Often the Indigenous 'presence' in this dialectical relationship that is found in learning environments is shaped and anchored in historicized victory narratives of conquest and assimilative narratives that place the discourse of indigeneity within colonial realms of race – not in discourses of territory and sovereignty.[4] Engagement with historicized and assimilative narratives contributes to the logic of elimination by making the primary issue of land and the continued struggles of Indigenous peoples invisible. Further, even appropriate stories of colonial histories, can be an example of what Tuck and Yang (2012), suggest is a move to white innocence (or the alleviation of white guilt, Simpson 2011) and metaphorization of decolonization because though they may not engage in the erasure of Indigenous past, they presume settler stability and the absence of decolonized sovereign Indigenous futures. Thus, the challenge to place-based work is in articulating the difference between residing and dwelling in a place. The recognition of the difference in kind (residing and dwelling) can easily get applied as a difference in degree[5] and thus enables settler majorities indigenizing themselves, or as Deloria and Lytle (1998) calls it 'playing indian,' and claiming settler sovereignty as the normative and moral/intellectual authority.

Deficit narratives of urban Indigenous communities often claim there are limitations to the living of Indigenous lives in urban places because they are supposedly disconnected to Indigenous homelands and sacred places is intimately intertwined with issues of residing and dwelling. The urban Indian narrative reinscribes the settler-indigenous dialectic by framing Indigenous land (i.e. urban places) through

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postcontact dispossessions and reemploying a logic of elimination (i.e. urban lands are not Indigenous lands, therefore urban Indians are not Indigenous). Marking urban land as invisible, or not authentic lands, and non-Indigenous, reinscribes the settler-indigenous dialectic that services the logic of elimination for territorial acquisition (Wolfe 2006). This dialectic is complicit in the domestication of decolonization and the denial of repatriation of Indigenous lands (Tuck and Yang 2012), urban and rural; further, it limits imaginative creations of indigenous futurity that are not bound by colonial conceptions of land.

Interestingly, there are quiet and loud revolutions within normative disciplines to rupture the concept of the ZPE (e.g. Helmreich 2011; Ingold 2000; Kirksey and Helmreich 2010), though it remains to be seen whether this work can stand in solidarity with settler colonial consciousness. Regardless, these emergent transformations have had little influence on the ways in which learning about the 'natural world' across science, place-based, and environmental education are conceptualized broadly. Although we think place-focused education scholarship could provide critical leadership in constructing different trajectories of knowing, being, and becoming, significant work remains to be done. This work involves tracing and transforming the ways that some of the core constructs in education, as well as the fields of cognition and human development, conceptualize culture, and nature (see Bang et al. 2012).

The development of liberatory learning environments, we believe, will hinge on the ways in which constructs of culture and land, as well as the epistemic and ontological stances embedded therein, are conceptualized, encoded and facilitated. Land education requires many things including: critical border thinking and the rupturing of the ZPE through the spatial turn (Kitchens 2009), solidarity with consciousness of land and settler colonialism, constant resistance to land perpetually becoming a resource for global markets and negating presumptions about the absence of sovereign Indigenous futures. In our view, one of the most critical, elusive and perhaps contradictory aspects of learning environments are those that elevate anthropocentric relationships and consequently 'other' both place-based and land education. While place-focused work has opened critical spaces of scholarship and taken the laudable stance to explicitly reject anthropocentricism, a central need for land education in relation to anthropocentricism, as distinct from place-based education still remains because it makes visible the ways in which anthropocentricism is destructive to Indigenous cosmologies.

Place, nature, culture, and anthropocentrism

Place-based education actively works toward being nonanthropocentric (e.g. for overview see Gruenewald 2003); however, we believe accomplishing this transformative stance in lived practice, requires deeper consideration of the intersections between settler colonialism, the content derived from normative scientific paradigms that has been constructed around the division of nature and culture and is routinely taken up in learning environments (see Bang et al. 2012; Ingold 2011), and theories of learning and development implicitly embedded throughout. Being in the world gives form to children's learning and development – that is, people are continually coming into being through experiences. Individuals that have experiences or engage in practices in which place is a backdrop tend to reason anthropocentrically and view humans as separate or as different from the rest of the world (Bang, Medin, and Atran 2007; Medin and Bang, forthcoming). Anthropocentricism in reasoning

and 'world as the backdrop to human activity' has been theorized as a human universal rather than a socially or ideologically constructed phenomenon, particularly in learning and developmental work (e.g. Carey 1985). Increasingly, however, there is work demonstrating that patterns of human thinking and development, which were once thought of as universal in these disciplines, differ across place and culture (e.g. Medin et al. 2010; Herrmann, Medin, and Waxman 2011; Herrmann, Waxman, and Medin 2010).

We suggest that taking anthropocentrism as a universal developmental pathway privileges settler colonial relationships to land, reinscribes anthropocentrism by constructing land as an inconsequential or inanimate material backdrop for human privileged activity and enables human dislocation from land. One way that the phenomenon of dislocation occurs is through the construction of places as objects or sites, which Bowers (2001) names as fundamentally a problem of anthropocentricism and Gruenewald (2003) suggests is deeply pedagogical. Corbett (2007) explores the ways in which mobile modernity extends the disembedding of peoples from places, a process that Griffiths (2007) has called 'the deforestation of the mind' (25).

For Indigenous learners, this conceptual and developmental pathway functions as a form of dispossession and epistemic (and in our view ontological) violence (e.g. Marker 2006; Wildcat 2009). Indigenous scholars have focused much attention on relationships between land, epistemology and, importantly, ontology (e.g. Cajete 2000; Deloria 1979; Meyer 1998). Places produce and teach particular ways of thinking about and being in the world. They tell us the way things are, even when they operate pedagogically beneath a conscious level (Cajete 2000; Kawagley 1995). Richardson (2011) makes the observation that much of contemporary learning theory is object focused and runs 'roughshod' over Indigenous theories of learning and development, which we feel at a bare minimum are focused on the development and maintenance of respectful reciprocal subject-subject relations. The intersection between object focused learning theory and constructions of places as human-shaped objects reifies settler colonial relationship to knowledge and power.

As an example, in another study, we looked at the representations of ecosystems in curricula and human presence or absence. Nearly all of the curricular materials we looked at had no human represented in ecosystems (Bang, Medin, and Atran 2007) – this absence is emblematic of the nature/culture epistemic divide in western ways of knowing. Further, if you go to the internet and search for images of ecosystems you will reproduce this phenomenon (Medin and Bang, forthcoming). Indeed, Casey (1997) (as cited in Gruenewald 2003) suggests 'that there is a fundamental paradox of place – it is everywhere, yet it recedes from consciousness as we become engrossed in our routines in space and time'(25). In our view, the recession of place from consciousness depends on the ways in which we understand and routinize our relationships to other beings. The receding of place is only the case if we maintain anthropocentric forms of being in which all other forms of life are relegated to the backdrops of human existence or as resource (Ingold 2011).

The implicit and explicit narratives and representations of human/land relations in learning environments is a specific example of the way in which Indigenous epistemologies and ontologies are denied. Burkhart (2004), in an effort to clearly articulate the difference in ontology between western and Indigenous knowledges, made a revision of the famous Descartes adage 'I think, therefore I am' to express something closer to an Indigenous ontology to 'We are, therefore I am.' Extending

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this, we might imagine that the ontology of place-based paradigms is something like 'I am, therefore place is,' in contrast, the ontology of land-based pedagogies might be summarized as 'Land is, therefore we are.' This reframing in our view carries considerable weight in relation to the way we think about, study, and live culture, learning and development with land. In the next section we aim to concretize the dimensions we have been exploring and describe the ways in which we worked to live 'land is, therefore we are' through specific examples of our project and the subsequent emergent urban land-based pedagogies.

Learning to (re)story Chicago as Indigenous lands

Drawing from a six-year community-based design research project, a modified methodological tool used to create and study learning environments (see Bang et al. 2013; Brown 1992; Penuel et al. 2011), we came to simultaneously theorize or conscientize, resist, and develop transformative praxis (Smith 2004) in moments of teaching and learning and developed our version of land education. We pause for a moment to explain what design-based research is and why we choose it as a tool.

Design-based research (DBR) is a methodology that was developed from the recognition of the inadequacy of many educational research traditions to understand the complexities of learning and the development and implementation of learning environments. DBR scholars are typically committed to developing transformative solutions to pressing educational problems immediately, and thus, design research is driven by goals of progressive refinement of both theory and practice (Brown 1992; Collins, Joseph, and Bielaczyc 2004) that enables researchers to contextualize theoretical questions about learning in lived lives and involves 'a sequence of decisions made to balance goals and constraints' (Edelson 2002, 108). Unfortunately, the development of learning environments (i.e. schools) rarely engages decision makers that are drawn from students' communities and has been noted to be an important factor in reinscribing current power paradigms (Sawyer 2006). As an initial step in retooling design research in our context, we engaged a broad range of community members as the decisions makers in the design and enactment of a place-based science-learning environment. We refer to this process as *community-based design research* (CBDR) (See Bang et al. 2010 for more details) and view it as aligned with what Gutiérrez and Vossoughi (2010) have named social design experiments.

The choice of a methodology that carefully examines the development and implementation of a learning environment in our view was also aligned with needs in our community produced by federal Indian education policies (e.g. boarding schools or generation of foster children) that claimed the rights and practices of teaching and parenting as their domains and were enacted toward the settler-colonial logic of elimination (literally). In our view, this now seemingly settled structure has continued to keep Indigenous peoples out of classrooms in the role of teacher as evidenced by the low number of Native teachers (e.g. Moran and Rampey 2008). The intent of using CBDR as a tool was to support community members in reframing, revisioning, and restoring (see Smith 1999) the classroom level of teaching and learning for Indigenous children to instantiate educational self-determination. In our experience, community-based design work afforded communities critical space to work through the historical traumas of settler colonialism (Duran, Duran, and Yellow Horse Brave Heart 1998; Walters et al. 2011) that has produced our experiences with formal education and helps us to better see the 'complexity, contradiction and

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the self-determination of lived lives' (Tuck 2009, 416) in order to create better teaching and learning with our children and youth. Further, we see the iterative nature of design research aligned with Indigenous epistemologies because it elevates creation, processes, and practices of knowing in nonlinear and specific contexts in ways that in our opinion few other research tools in the study of learning environments do. In short, for us, CBDR allowed us to generate forms of land education.

Following our design process was the creation and implementation of youth and family programs held at the American Indian Center of Chicago, a local community organization. These learning environments, originally described as 'informal' place-based science learning environments, were initially held during the summer and then expanded to year-round programming for youth and Saturday programming for youth and their families. During our design work we contemplated many, many ideas but continually returned to three compelling themes: (1) knowing Chicago as the lands of our ancestors and specifically visiting old village sites, (2) knowing Chicago as wet*lands* where many medicinal and edible plants grew and continue to grow, and (3) understanding the impacts of invasive species on these lands. We organized our pedagogy around knowing and coming to know through building relationships with land. Specifically, designers decided in order to know ourselves and our ancestors better, we should remake relationships with our plant relatives and we named our units 'Remaking Relatives.' Exemplifying how *knowing* and *coming to know* was articulated we look to Sarah, an elder in our group. During a design meeting she said:

> I think we have to keep in mind … we need to express these concepts that we're putting together for the kids in Indian thought because what you see … is we're really fishing around for the correct English words to express the Indian thought. In creating this curriculum we also have to use our Indian thought to create our own language of how we're going to express these concepts and what we want our kids to learn and understand as well as to help us to be able to become familiar with that language … because we, as Native people, we have that connection, that non Indian people are searching for. They say recycling and all of these terms whereas we say we're living in harmony and we recognize our relatives, stuff like that. But they're not to that point of recognizing any relatives. They're at the point of knowing that you have to recycle in order to help the environment and to stop the, what is that, the global warming. They're not talking about helping the earth heal. They're not talking about helping our relatives to survive. Those kinds of concepts are what we talk about and the people who study about the birds and all of that, they come from a different concept also but they still don't recognize the birds as being relatives. They look at the birds as being a very important part of the cycle of life that keeps the earth in balance. But we have that missing piece that we need to find words, how to put our thoughts down and create that language that we need in our curriculum.

Sarah highlights differences between western and Indigenous ways of knowing (e.g. recycling/global warming, harmony/healing/relatives). Echoing Veracini, we suggest that Sarah is saying the group needs to both recognize and move beyond the ZPE and is voicing the core distinction between Indigenous peoples (relations to land) and settler colonial societies (relations to property). In other words, she is telling us that we need to uphold land as our relative, not as a material object to protect for perpetual use or conservation. Further, Sarah here connects these to issues of language. Throughout our design process, elders and community members explored these issues and we constructed, adapted, and improvised materials for use in our programs (see Bang et al. 2010 for details). However, once we moved past the plan-

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ning stage to the implementation phase many previously unseen dynamics became apparent and we became particularly focused on the micro-practices of teaching.

One particularly important dimension that became visible is the role of naming in learning and the ways in which naming is the site at which issues with references between Western and Indigenous epistemologies unfold. During teacher meetings, we often found ourselves in recursive conversations around conceptual terminology and naming (see Marin and Bang, forthcoming). This began, in part, by our awareness about the function and profound impact of language extermination on our communities and knowledge systems (e.g. Hermes 2012). While this carries significant epistemological implications, it became increasingly clear to us how scientific terminology and English obscured the ontological differences we were trying to navigate in moments of 'instructional' practice.

A particular content focus we took up was the importing of plants from other places and specifically common Buckthorn, a native species in Europe that was brought to North America in the early 1800s. This plant is particularly destructive to woodlands and oak savannahs and is considered a deeply problematic invasive species. The act of naming became particularly important as we continued to develop curricula around 'invasive species' (see Bang and Medin 2010; LaDuke 2005). We, the teachers in the program, recognized our use of the term invasive species signaled a particular epistemic and ontological stance to youth – a western science one specifically – and not one that we intended. Thus, the term invasive species placed buckthorn, and other plants that were forcibly migrated to Chicago, outside our design principle around naming our plant relatives because while they may not have been *our* relatives, the term disposed them as relatives to any humans. Further, the term failed to make visible the motivation of settlers that brought flora and fauna from their homelands to make these new lands like home – or what has been termed ecological imperialism (Crosby 2004; McKinley 2007). While supporting 'border crossing' (Aikenhead 2001), meaning helping students to learn in western scientific paradigms in addition to Indigenous, did become an important focus for us, it was not where we were yet in the process, and thus, this insight became another specific example of the ways in which Indigenous erasure can happen in a learning environment – even when we are working hard to be mindful of settler colonialism.

Following Sarah's advice to find words to express Indian thought, 'we fished around' to find a name centered in our own epistemic and ontological centers. In what we view as an form of critical border thinking, we began referring to these plants formerly named 'invasive species' to 'plants that people lost their relationships with.' Further, we delved into knowing the migrations of these plants and their relationship with contact and colonialism in the Americas. While at that time we were not closely examining Sarah's words in the way we are now, we think our pedagogical transformations (renaming of invasive species and as we will see weaving the history and current presence of land restructuring into our practice) reflect our learning on her meanings in pedagogically specific ways. In the specific case of naming our plant relatives, it marked an intentional type of relationship, as well as an intentional pedagogical focus on relationships. Mignolo and Tlostanova (2006) suggest we need a 'relentless critical awareness of what guiding principles are structuring engagement in moments' (458). The teachers 'awareness' of the embedded nature of language we think of as a classroom level example of Mignolo's point. Using pedagogical language like 'plants that people have lost their relationship with,' ruptures the epistemology of the zero point, because it begins to always

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see ontology and epistemology[6] and refuses a settler colonial narrative of and relationship to land.

Learning about our relationship with our plant relatives in this way opened the space for old perceptual ways to lead and we experienced a cascading effect on how our work continued to unfold. For example, we increasingly engaged in reading the land (see Marin and Bang, forthcoming) and expanded our learning of their (plant relatives) relationships to land and water. Just as we worked to see our plant relatives from a long view, we also began to see the waters they grew in the same way. While this may seem simple, increasingly scholars are investigating the deep socio-cultural nature of attentional habits, the semitotic resources mobilized in such attentional habits and the shaping of knowledge construction (see Correa-Chavez, Rogoff, and Mejia Arauz 2005; Eberbach and Crowley 2009; Goodwin and Goodwin 2012; Marin 2013; Tulbert and Goodwin 2011). While we did this during our program with youth and families even our planning took this turn. We no longer sat in rooms to plan our activities, we went for walks through our neighborhoods to plan our activities, or we visited other specific locations within the city.

We began to articulate a pedagogical vision for ourselves in which land was our teacher and our job as teachers was to support our youth in developing right relations with land. As we continued to make sense of our plant relatives' relationships to land and water, four wetlands became our core places of learning. In turn, we began working toward understanding land's and water's relationships to time and history. Two wetlands we frequently visited were historically known village sites and officially part of the Cook County Forest Preserve system. The two others we visited, were places of restoring wetlands – one by human design and one because humans left it alone. While it is likely that place based or environmental education could easily take up the study of these two wetlands, we suggest that in a land-based pedagogy we took up these wetlands in unique ways.

In our project, the juxtapositions of these wetlands made explicit the ways in which the altering and restructuring of land in North America was and is a foundational practice in settler colonial paradigms in a variety of ways. For our purposes, here, we highlight two key dimensions made visible through the engagement of different wetlands. The first was the recognition of how the filling of wetlands factored greatly in the settlement of the Chicago areas and establishing Chicago as a national transportation hub and why some forest preserves or parks in which the wetlands were located were there (some are still connected to land claim issues and cannot be transferred to individual property ownership legally). The second was the difference between land altering toward erasure and land altering for aiding. The restoring wetland via human 'neglect,' or the places in which settler colonial structures (practice of filling) were no longer being closely imposed, made visible the ways in plant relatives and water were remerging and eroding the fill. In intentionally restored spaces, uses of techniques like burning (a technique used historically by Indigenous peoples) were developed with knowledge of and supported plant relatives of these lands (prairie plants have deep root systems that can survive burning whereas non-indigenous plants in these places tend not to and do not survive). As teachers, we began to track and weave into our thinking, and in the moment-to-moment interactions in teaching and learning, the waves of ecological restructuring that has occurred in Chicago; from the filling of wetlands, to the reengineering of the direction of the Chicago river, the mass destruction of prairie lands for agriculture, to the importing of plants from other places. Relentless efforts to story land from

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long views of time and experience, and elevating the importance of and reclaiming naming practices we see as critical dimensions in urban land based pedagogies. In short, as a matter of pedagogical principle, we worked to make always visible the history and change of the lands we live in, in short, land became our first teacher and our learning environments emerge from there.

For Indigenous scholars, relational pedagogies of land are not new (Cajete 2000; Kawagley 1995) even in Shikaakwa. Burkhart (2004) writes that 'a native philosophical understanding must include as experience, not simply my own … If I am to gain a right understanding I must account for all that I see, but also all that you see and all that has been seen by others.' Re-remembering to 'see' Chicago as Indigenous lands enabled the development of urban land-based pedagogies. We see the shift to land and water as an example of what he is talking about and of what land-based pedagogies recreate; making sense of what plants 'see.' Critically important, however, this move is a non-anthropocentric stance that ruptures normative paradigms of plants. Berthold-Bond (2000) calls for a change in perceptual habits and suggests that places must be experienced differently – that place-conscious education must develop pedagogies that learn to listen to what places are telling us. In effect, re-centering our perceptual habits in Indigenous ontologies and epistemologies, we came to see land re-becoming itself and reclaim our continuing presence or 'stories-so-far' (Massey 2005) in Chicago and Shikaakwa from narratives of deficit and disposed urban Indians.

Discussion

Re-storying Chicago required journeying through those layers of colonial fill, which quietly operate in teaching and learning environments to make visible dynamics of settler colonialism. In this paper, we have described various examples of these dynamics including: (1) the broad constructions Indigenous absence and various forms of Indigenous presence, (2) the constructions of lands as uninhabited or that make invisible the waves of land restructuring over time, and (3) specific examples from an urban land based education project that centered Indigenous epistemologies and ontologies. As Indigenous people, we do not need to re-inhabit or learn to dwell in the places in which we have always dwelt (see Bowers 2009). For the teachers involved in this project, the process was not about re-inhabitation – it was learning from land to restore(y) it and ourselves as original inhabitants – that is living our stories in contested lands (Somerville 2007) and restoring land as the first teacher even in 'urban' lands. Narratives in which Indigenous people are absent, or relegated to a liberal multiculturalism that subsumes Indigenous dominion to occupancy, and narratives and positionings of land as backdrop for anthropocentric life, will only help to produce new narratives of territorial acquisition and fail to bring about needed social change (Tuck and Yang 2012; see related point in Greenwood 2009).

In part, what we are suggesting is that although we may have ceded territory in the current era, something we will continue to learn hard lessons about, a long view of humans' histories suggests that what would be worse is if we continue to cede our ontologies and epistemologies with territory by becoming blind to land. Land is here and so are new generations of Indigenous youth – if we raise them. Alfred (2005) says that what we need to do is rethink how we reference ourselves and 'to cause mental awakening and to give people knowledge of the selves and of the world thereby restoring the memory of who we truly are as Onkwehonwe' (282).

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Our project helped to expand the mental awakenings in our community and to build possibilities toward young people not being forced into genesis amnesia (Bourdieu 1977) in the service of settler futurity. The (re)storying of these ontologies and epistemologies meant we could move towards Indigenous identity and possibility living in our ceded lands not defined by current power paradigms of simultaneous dispossession and containment and able to resist and act on dimensions of political, sociological, and ideological prescriptions that produce them and ensure settler futures. Urban land-based education helped us build toward viable futures of robust indigeneities (Simpson 2011) of survivance and sovereignty of lived lives and Land reclamation.

Muskrat theories

Muskrat dives to retrieve lands that live beneath the waters.

> Sometimes to necssarily till the relations between water and land in order to support the unique plants that thrive in these wetlands.

And sometimes muskrat dives for remaking home lands.

> Diving through the settler colonial fill, we have started to retrieve the good lands that still flow. Relearning to see and story our relational dynamisms with land and water, is making way for decolonizing projects in land currently named urban and ceded.

As we continue our stories-so-far (Massey 2005), we believe Muskrat will dive and help re-story our lands again as we continue our paths of becoming.

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Notes

1. Chicago was one of the original cities the US government relocated Native peoples to by force, choice, and in effort to assimilate us into the American mainstream during what is known as the Termination and Relocation era of the 1940–1960's.
2. There are more than 150 tribes from across North America represented in the Chicago community.
3. Self-determination refers to the legal, political, social, and cultural beliefs in which tribes in the United States exercise self-governance and decision-making on issues that affect our own people.
4. Gruenwald (2008) explores the dynamics of this issue (not named as an issue of settler colonialism) through the ways in which 'diversity' in American institutions is

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constructed about racial representation, not about diverse ways of knowing and engaging the world.

5. See the Exxon-Valdez decision, 1994 WL 182, 856 and 104 F.3d 1196, in which the judge did not find Native Alaskan fishing practices as different in kind from other Alaskans thus denying their claim as a prime and significantly consequential example of a kind-degree slippage.
6. While we make no definitive claim here, we do want to point out that this phrase mirrors the types of translations of heritage language meanings.

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