



## Community-Based Design Research: Learning Across Generations and Strategic Transformations of Institutional Relations Toward Axiological Innovations

Megan Bang, Lori Faber, Jasmine Gurneau, Ananda Marin & Cynthia Soto

To cite this article: Megan Bang, Lori Faber, Jasmine Gurneau, Ananda Marin & Cynthia Soto (2015): Community-Based Design Research: Learning Across Generations and Strategic Transformations of Institutional Relations Toward Axiological Innovations, Mind, Culture, and Activity, DOI: [10.1080/10749039.2015.1087572](https://doi.org/10.1080/10749039.2015.1087572)

To link to this article: <http://dx.doi.org/10.1080/10749039.2015.1087572>



Published online: 05 Nov 2015.



Submit your article to this journal [↗](#)



Article views: 3



View related articles [↗](#)



View Crossmark data [↗](#)

## Community-Based Design Research: Learning Across Generations and Strategic Transformations of Institutional Relations Toward Axiological Innovations

Megan Bang<sup>a</sup>, Lori Faber<sup>b</sup>, Jasmine Gurneau<sup>b</sup>, Ananda Marin<sup>c</sup> and Cynthia Soto<sup>d</sup>

<sup>a</sup>University of Washington; <sup>b</sup>American Indian Center of Chicago; <sup>c</sup>Northwestern University; <sup>d</sup>University of Illinois

### ABSTRACT

The socio-ecological challenges facing communities in the 21st century are building towards a critical juncture of history, culture, power, and profound inequity. Scholars working in the service of social transformation and improving the wellbeing of communities are calling for creative, deliberate, and consequential interventions. Tharp & O'Donnell (this issue) call for increased engagement between Cultural-Community Psychology and Cultural-Historical Activity Theory to lead this kind of call. Drawing from our experiences in community based design research, we argue for cultivating axiological innovations in research and interventions. We explore three examples including: critical historicity, inter-generational learning, and strategic transformations of institutional relations.

### ARTICLE HISTORY

Received 18 Aug 2015  
Accepted 23 Aug 2015

The socio-ecological challenges facing communities in the 21st century are building towards a critical juncture of history, culture, power, and profound inequity. Scholars concerned with understanding culture and learning broadly, but especially in the service of social transformation and improving the well-being of communities are calling for creative, deliberate, and consequential (e.g., Gutiérrez & Jurow, 2014; Lee, 2001) interventions. As we continue to try to understand the complexity of learning and development in the evolving “thrown-togetherness” of life (Massey, 2005), which Massey describes as politics of the event of place including the politics of difference, identity, affect, connectedness, and relations, creating interventions that contribute to just and sustainable change demands engagement across disciplinary fields both within and across the social and physical sciences to develop new designs, narratives, and possibilities of encounter and making relations (Aitken, 2010). Within the social sciences the need to synthesize and build across fields in insightful, strategic ways is critical and ethically responsible. Tharp and O'Donnell (this issue) propose that increased engagement between Cultural-Community Psychology (CC) and Cultural-Historical Activity Theory (CHAT) with a specific focus on joint activity and intersubjectivity could be generative for the field and our collective endeavors.

We suggest that the inclusion of principles and methodological innovations from third-generation activity theory, specifically critical historicity (Vossoughi & Gutiérrez, 2010) and transformative agency in formative interventions (Engeström, 2004) are necessary for the kind of generative leadership that Tharp and O'Donnell call for. However, we work to expand what these might mean and how they might function in justice oriented interventions, in our case more specifically informed by aspects of decolonial perspectives and sensibilities. We suggest that progress in CC and CHAT research, as well as a range of related fields, needs to pay more attention to *axiological innovations* in research and programming. For current purposes, an adequate definition of axiological innovations are the theories, practices, and structures of values, ethics, and aesthetics—that is,

what is good, right, true, and beautiful—that shape current and possible meaning, meaning-making, positioning, and relations in cultural ecologies. Lemke (2002) wrote,

In its broadest sense the axiological position of a discourse voice is determined by its stance towards itself and other voices. (p. 39)

Social contestation is discursively effective only to the extent that it crosses this frontier [vulnerability of social formation], not simply reversing the axiological stance of an existing discourse, or posing a counter thematic, but providing a mode of articulation that undermines the deepest grounds of an ideological claim for the “necessity” of some formation. In essence it must do something in a way that, once said, makes old truths and old rights transparently matters of special interest rather than commonsensical and necessary. (p. 41)

Axiological positionings of self and others with respect to knowledge, knowing, and human activity are routine parts of interaction. These axiological positionings emerge in the conceptual, emotional, and affective states that shape intersubjectivities and possible futures in interaction and we suggest in designing, implementing, facilitating, and studying learning.

For us the need for axiological innovations is shaped by the necessity of continually expanding decolonial methods and sensibilities in research (L. T. Smith, 1999) and as a kind of critical echo from diSessa and Cobb’s (2004) challenge to the field that a feature of design-based research should be the search for *ontological innovations* about the nature of learning. At the time diSessa and Cobb’s call resonated and articulated the growing interests of many scholars, and in our view extended the intent of Ann Brown’s (1992) path-breaking work. We note this brief genealogy to acknowledge the call for axiological innovations is not new per se; rather it may be an articulation that is useful to our collective endeavors. Ontological innovations in the study of learning have expanded and deepened what we know and how we design learning environments in countless and invaluable ways. However, design-related fields of education have made less progress in designing learning environments that sustainably disrupt historically shaped inequities and cultivate transformative agency from within communities. Increasingly scholars have drawn attention to the ways in which settled forms of knowledge and knowing that reify normative and problematic powered relations saturate many learning environments. Our call for axiological innovations has been nurtured and inspired by the collective insights and demands for consequential learning (Gutierrez & Jurows, 2014). In our view, consequentiality is deeply defined by one’s or a communities’ axiology.

In many learning environments there is a kind of accepted axiological normativity and assumed stability that shapes activity, often toward singular ends that perpetuate forms of privilege and power that produce and maintain profound inequities. Importantly, we are suggesting that axiology is not a given, that it is inherently variable, context dependent, and shaped by unfolding activity. In the work we have been involved in, we have relentlessly worked toward making visible axiological norms such that decisions in the design, implementation, and study of learning and learning environments support and cultivate axiological heteroglossia toward decolonial, just, and sustainable futures.

In this article, drawing from our experience in 10 years of community-based design research (CBDR) in the urban intertribal Indigenous community of Chicago (see Bang et al., 2010; Bang et al., 2012; Bang et al., 2014) that involved the contributions of many, many people,<sup>1</sup> we respond to Tharp and O’Donnell’s call (this issue) by naming some of our core design assumptions and their relation to concepts in the broader field. The authors of this article represent one of the principal investigators of the projects, teacher/facilitators involved in the work, project coordinators, a postdoctoral scholar, and community researchers. We have varied histories and relations with the Chicago community, ranging from Chicago being part of our original homelands, to members of families who have been long-term community members spurred by relocation policies and other migrations, to more recently relocated community members. All of us have been deeply intertwined with and committed to working at grassroots community organizations and being active contributing community members. Some of us have graduate degrees, some gained during the history of these

<sup>1</sup>Douglas Medin, David Bender, Lawrence Curley, George Strack, Fawn Pochel, Janie Pochel, Felicia Peters, Eli Suzokovich, and Mike Marin, among many others, were all key project leaders in various activities mentioned in this article.

projects, some do not. All of us have made critical and unique contributions to the work we have done in ways that helped generate a collective space for community to learn and grow in, including ourselves.

The projects we draw from were deeply influenced by community activists and organizers and Indigenous scholarship, as well as work in cultural psychology (Cole, 1998), design-based research (e.g., Bell, 2004; Brown, 1992; Collins, Joseph, & Bielaczyc, 2004; Edelson, 2002), cultural modeling (Lee, 2001), and formative interventions/change laboratory (Engeström, 2004). These projects highlighted the need to remediate normative axiological assumptions reflected in educational research and practice toward more expansive possibilities. In this article we report on two intentional design commitments—*learning across generations and strategic transformations of institutional relations*—that we propose are practice-based instantiations of axiological innovations. We argue that these design commitments are fundamental to CBDR and suggest that further exploration into the multiplicities of possible instantiations of these design commitments afford the potential for continued axiological innovations in research and practice. Further, we suggest that axiological innovations may be critical in creating serious partnerships and intersubjectivities that can cultivate transformative agency in joint activity.

## Culture and learning

In our view, generative engagement between CC and CHAT will need to work toward shared sensibilities around conceptualizing and studying culture and change from more explicitly articulated political positionings than has routinely occurred. Work in cultural psychology (e.g., Cole, 1998) propelled our understandings of culture and learning wherein culture is conceptualized as constellations of practices in which people engage and make sense of the world as they participate in the everyday activities of their communities. Culture, in this sense, is both historically constituted and dynamically changing through participation in social practices and making sense of life (Gutiérrez & Rogoff, 2003; Lee, Spencer, & Harpalani, 2003; Moll & González, 2004; Nasir, Rosebery, Warren, & Lee, 2006; Rogoff, 2003). Viewing learning as dynamic cultural processes, or what is increasingly called learning in cultural ecologies, recognizes that all people explore, narrate, make sense of and shape their worlds, but they do so in varied ways, connected to the particular constellations of practice, relationships, values, goals, and worldviews of their communities (e.g., Rogoff, 2003; Bell, Lewenstein, Shouse & Feder, 2009; Bang et al., 2012). This view of culture refuses constructions of culture in which categorical membership or box model variables materialize (Lee, 2003) or reinscribe notions that culture is externalizable, minimized, or separated from everyday practice and meaning making. This view of culture we suggest also means that there are explicitly axiological and political consequences and affordances in how we articulate, study, and work to change communities.

As the work we have been part of has unfolded, we have tried to make sense of the path-breaking work of Indigenous scholars articulating Indigenous methodologies (e.g., Brayboy, 2000, 2013; Deloria, 1979; Kovach, 2010; L. T. Smith, 1999; Wilson, 2008). In our experience the normative axiological assumptions reflected in educational research and practice have often been key issues in building trust and generative partnerships with Indigenous communities. Further, for all of us involved in these projects, considering axiological dimensions and questions about the research, as well as our own personal lives were routine and recursive dimensions of our work.

## Context of our work

The impetus for the projects motivating this article arose from witnessing and walking with a group of Indigenous elders who were (and continue to be) walking the perimeter of the Great Lakes to bring awareness to the declining health of the lakes and the earth at large and to pass on the traditions, values, and teaching of Indigenous communities (see [www.motherearthwaterwalk.com](http://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. The need for renewed human valuing of water, what waterwalkers call the sacredness of water, and its centrality to life sits at the center of the water walks. Compelled by the plea of the walkers, a contagious sense of possibility and responsibility began to take root in our local community, *again*. Along with some other serendipitous events, the first research project focused on improving science education, involving more than 100 community members, came together to develop innovative science learning environments for Native youth, families, and communities living in Chicago through what we call CBDR. CBDR is a reworking of design-based research methods because it privileges and centers the work in community, engages broad ranges of community members, and is driven by community members in key project staff positions. Typically our employed project staff included between 12 and 15 people. However, we have many more community members participating and leading in a variety of ways.

The project, which began with a focus on improving science learning in an urban Indigenous community, was informed by decolonizing methodologies (L. T. Smith, 1999), social design experiments (Gutiérrez & Vossoughi, 2009), and formative interventions (Engeström, 2011) and aspired to develop transformative praxis (e.g., G. H. Smith, 2004) through engaging community members and families in the co-creation and implementation of science learning environments. Importantly, however, we were not focused on normative science learning. We aimed to codesign learning environments based in Indigenous ways of knowing (IWOK) that were also effective at teaching and learning Western scientific ways of knowing in generative and pragmatically useful ways. We recognized that many efforts to operationalize a theory of change presumes increased school achievement is the only path towards community wellbeing and typically reflects little critical awareness of the potential negative impacts of schooling, particularly with respect to Native people and history.

Considering Native peoples' histories with education in the United States, we were unsure if schools were appropriate sites of intervention—thus we focused on community contexts and programming in informal settings. A simplified view of the conflict is this: Can schools be institutions that support Indigenous futures? This question also takes seriously the ways in which schooling privileges Western epistemologies and ways of knowing. At the same time our work did not proceed from a romanticized view that ignored the demands for Native children to achieve in school/Western forms of knowing. We developed a view of human meaning making as fundamentally heterogeneous and multivoiced (Rosebery, Ogonowski, DiSchino, & Warren, 2010), both within and between socially and historically constituted communities and ways of knowing. The focus on heterogeneity reflects Kawagley's (2006) proposal for finding both the convergences and divergences of IWOK and Western science ways of knowing. The design team was deeply committed to relational epistemologies—teaching youth how all things are related, connected in dynamic, interactive, and mutually reciprocal relationships (Barnhardt & Kawagley, 2005; Brayboy & Castagno, 2008; Cajete, 2000; Kawagley, 1993). We were centrally focused on engaging children, their families, and ourselves in learning about complex ecological systems and human relationships with those systems, especially forests, prairies, and wetlands (Bang et al., 2014).

However, we did this by intentionally privileging and engaging Indigenous ways of knowing and engaging youth in our own practices and traditions. In short, we experienced our projects as being committed to and believing that increasing Indigenous people's expertise in Western forms of knowing is a pragmatic necessity, but that we must find pathways that ensure Native children are first engaged in Indigenous ways of knowing. This, for many of us, was new because many designed learning environments have structured pathways toward expertise based on Western forms of knowing (i.e., making the cultural connections) and have failed to support Indigenous children in acquiring community based forms of expertise. This terrain is complicated, however, as there are some Indigenous communities and scholars that deeply question whether designed learning environments (mostly schools) could accomplish this in a way that does not perpetuate colonial enclosure

(see Richardson, 2011) at least without significant reconsideration of the core premises of learning leading the design of learning environments. We see this as a necessary and recursive question in the design of learning environments that will take on locally specific answers. In our projects we held a desire for axiological innovations in the design of learning environments such that decolonial sensibilities shaped all of our activities and helped us to enact forms of Indigenous presents and imagine possible futures in new ways (see Bang et al., 2014). This recursive questioning is linked to notions of double stimulation in formative interventions.

## Formative interventions and double stimulation

Formative interventions have distinguished themselves from other forms of change making in part because they focus on transformation and learning in object-oriented activities (Engeström, 2011). Scholars who have taken up this approach are often outside of schools, in the workplace, or in other community settings. Importantly, in formative interventions the objects of inquiry are not presumed to be self-evident or fixed. Rather, they are negotiated and emergent as the actors involved in the activity systems are engaged in joint investigation. Richardson (2011) questioned whether object-focused learning theories can lead to liberatory forms of education for Indigenous people in part because they center objects over relations. We think we have utilized insights from formative interventions in generative ways by shifting our focus from object-oriented activity to relationally focused activity. However, this has not meant that object-related activity is absent either. In some ways this is a side stepping of the deep and still needed work of charting the implications Richardson raises. The shift to relational foci had impacts on how key aspects of formative interventions have been articulated.

A key aspect of formative interventions is the principle of double stimulation, which both makes visible a “conflict of motives” and works to resolve and transform it (Engeström & Sannino, 2014). Importantly, the second stimulus in double stimulation is supposed to create a redefinition of a situation and enable action to break out of the conflict. Taking actions to break out of paralyzing conflict is accompanied by the principle of ascending from the abstract to the concrete. This process works toward creating a “germ cell” or foundational model for new patterns of activity. The goal of formative interventions is to engage in processes directed by these principles and resulting in transformative agency that generates future-oriented visions “loaded with initiative and commitment” toward an emancipated mode of activity (Engeström & Sannino, 2014).

In our work we developed a kind of “germ cell” that revolved around constructions of natural and cultural worlds—constructions of human relations with the rest of the natural world—which we call nature–culture relations. Often science learning environments facilitate and encode views of humans and nature in which humans are separate or apart from the natural world. In our work we focused on ensuring that this severance was resisted, and we positioned humans as always a part of the natural world in consequential ways, a view we saw as fundamental to most Indigenous ways of knowing (Bang et al., 2014a). Importantly we also recognized that in many science learning environments IWOK are often positioned as historical and past or no longer generating new knowledge. And, indeed, our young people are receiving this message explicitly from all directions, so we explicitly disrupted the implicit positioning of IWOK. We return to these issues further along.

The complexity of nature–culture relations with respect to Indigenous peoples is far-reaching and in our view stretches the notion of double stimulation and how it functions in change-making work in historically marginalized communities. It is possible that our projects helped to create a language or way of articulating nature–culture relations that helped us communicate with others, but the conflict around nature–culture relations is a painfully visible and felt reality to many peoples in our communities. Many people in our communities live a perpetual or recursive double stimulation—we experience a persistent ongoing tension in motives—both our own and in the professed and enacted motives of others with respect to our communities. From a decolonial and relational perspective, the first stimulus in double stimulation is less around subjects experiencing a conflict of motives than a

process by which a space may open where naming, sharing, and daring to hope, work, and emotionally labor for change in the lived conflict of motives is created—a place of witnessing (e.g., Fine, 2006). Further, the expectation is not for a complete resolution of the conflict in a single project; rather there is a demand for expanding the space, the ecologies in which relations are emancipated from perpetual conflict, what is sometimes called transformative agency (e.g., Engeström, Sannino, & Virkkunen, 2014).

Our project led to additional programs and a cascade of new and wide-ranging programming over more than a decade. The cascading programs included after-school youth programs and early childhood programming, to intergenerational family programming focused on community building and more. For example, as our projects progressed, the need to support families lacking trusted child-care and quality early childhood education was voiced and materialized into culturally based early childhood education. Another program that took shape was focused on the representation of Native people in media and especially around mascot issues.

Importantly, these programs all reflected a decolonizing sensibility—or a design axiology—characterized by cultural resurgence (Alfred, 2005; Coulthard, 2014; Simpson, 2014), political activism, and a longing for and commitment to community well-being. More specifically, we focused our design efforts on things like land restoration, language loss awareness, food sovereignty, Indigenous games, digital literacy, and representational issues in the media and beyond. We suggest this is a form of community-based transformative agency. In our experience with CBDR, a focus on a singular program or intervention is a means toward broader scale reworking, not the end in itself.

Opening the desire, possibilities, and hope to make broad scale change in our experience requires ethical relationship building and community accountability, a kind of axiological innovation that is often far beyond the scope of what is imagined, supported, or respected in research (see Booker, this issue). As community or academy-based researchers engaged in or professed change-making efforts—what are our ethical responsibilities? This is not a new question and has been explored in many ways. For us, the concepts of bearing witness (e.g., Fine, 2006) and solidarity (Gaztambide-Fernández, 2012) help articulate parts of this responsibility. In our projects it meant designing with a persistent notion of critical historicity with a decolonial sensibility and supporting generative tensions and strategies to engage and transform historically accumulating sites of inequity at the broad scale and the ways in which people were experiencing in the moments and times we were collectively engaged in. We think this is connected to what Shotter (2005) called “witness thinking,” which he suggests is the “kind of thinking that can only be conducted within fleeting moments, in the course of trying to work out how best to respond to unique and crucial events occurring around one NOW, at this moment in time” (p. 1).

Shotter suggests that central to witness thinking is the recognition that ‘everything looks different when one is in motion’ (p. 1) by which we take him to mean, when one is centrally involved in unfolding activity as distinct from being outside or slowing motion down to reflect. This, as he suggests, is the dominant mode of analysis in the field of education. To be sure it has brought us much; however, in our experience it has not adequately prepared us to engage in the specific acts of designing and engaging in community-based design work, or what we might call “witness designing.” Drawing from Bakhtin’s notion that speakers’ utterances are shaped by the anticipation of the possible encountered responses, he focused on the dialogic nature of witness thinking in which he suggested, and we agree, that other people’s situated speech, speech that is responsive to the occurring and unfolding contours of voice and events, shapes everything, even our own inner most dialogues. Witness designing in our view, then demands designing with an active and ongoing engagement with critical historicity, not as an abstract, but from within the flows of its ongoiness.

## Designing with critical historicity

The need for a sense of historicity in interventions and understanding the dynamics of lived lives cannot be underestimated. A persistent orientation we have experienced in the field of education is

an explicit or implicit bounding of relevance to the problem space or “problematic” that often wants to sever the kind of historicity that lives in our projects. Oftentimes narrow orientations have a solution—on-demand attitude that minimizes the complexity of the problems and the history that has produced it (Martin, 2009). This point is connected to recursive double stimulation. In our design meetings, community designers often returned to previous ideas, issues, or conversations in making sense of persistent inequities, sometimes in new ways and sometimes not. In our experience recursive double stimulation, and the space it opens, is a recurring event in transformative projects, not a singular episode to get through.

Constructions of nature–culture relations is a prime example. A generative aspect of nature–culture relations in our work focused on constructions of lands (and water) and how Indigenous peoples’ relationships to these lands are positioned, especially in current settler-colonial nations. The fundamental tenet of settler-colonial societies is the acquisition of land as property, followed by the establishment of settler life-ways as the norm from which to measure development. These are accomplished through (a) erasure of Indigenous presence, (b) staged inheritance of land and indigeneity by Whites (Reardon & TallBear, 2012), and in the case of the United States, (c) erasure of African descendants’ humanity through the *structuration* of chattel slavery and resultant reduction to and control of Black bodies (Wolfe, 2006). Scholars have argued that the pervasive induction of Indigenous absence from lands is a critical aspect of establishing constructions of uninhabited land and settler normativity (Veracini, 2011).

The persistent construction of nature–culture separation or boundaries (Latour, 2013) manifests in a plethora of ways. For example, in some of our work we have demonstrated that there is a dominant construction of the ecosystems without humans in it reflected in school curricula and public media (Medin & Bang, 2014a), an oddity in part because it is not an accurate representation of the ways in which ecosystems function and tends to be unreflective of the understandings of human impacts on ecological systems we need for the 21st century. We see this construction of a personless nature as a persistent historicized political act, however unintentional, in the service of settler-colonial domination and the erasure of Indigenous peoples from places (Bang et al., 2014). We should note that although we focus on Indigenous peoples, the severance of people from lands more broadly is a critical issue facing human species, as it has led to destructive social and economic systems—in short, axiological innovation in nature–culture relations is necessary for all peoples and communities.

### The practices of critical historicity in design

There are many ways that critical historicity entered into our design process at a range of scales. We briefly focus on two for this article: critical reflections about knowledge systems, and weaving/mapping histories and possible futures. Engaging in routine critical reflection about past, present, or potential future relations between Western science and Indigenous ways of knowing was a persistent dimension of our project discourse. Doing this meant that we were necessarily taking a long view of the relationships of schools to Indigenous communities and the colonization of North America, as well as the relations between and positioning of Western knowledge systems and indigenous knowledge systems and being able to see these issues reflected in moments, utterances, and design processes and decisions we were making.

These conversations functioned as recursive double stimulation because we were engaging people’s lived and felt histories or “felt theories” (Million, 2011), to develop a collective theory of change. These “felt theories” were not abstract psychologically distant narratives in American history. These were the lived stories of peoples and the relatives of people present. Thus designing with historicity meant always recognizing that the issues we take up in our work, or communities’ awareness and efforts to transform them, are not new—they are lived and felt parts of life and have been across generations.



Making space for and recognition of these historicized realities and their present forms were/are perpetually shaping activity. However, the most pressing efforts to intervene on them are often sites of historically accumulating structural oppression wherein community members have a better genealogy of the specific activity systems at play than researchers do. In our experience, if transformative praxis is achieved, the process can be disorienting, even painful at times, for some individuals for a variety of reasons. Taking seriously the emotional complexity of our work stretched all of us and required us to develop new professional capacities, as well as a willingness to open and even change ourselves in ways that we underanticipated. More specifically, the dynamics that unfolded in our work nurtured a kind of responsibility or an axiological perspective that motivated us and others involved in the work a desire to foster a praxis that could support and transform our collective vulnerabilities and histories—a kind of restorative aesthetics in our design practices—though we sometimes disagreed about what it meant or how to do it, both in specific moments and in slowed reflective moments. The gravity of the space we opened, in its heaviness, complexity, and contradictions and in its possibility, increased the need for project staff to carefully consider how to facilitate design meetings and activities—or what can be called design practices. Our design practices became driven by a need to create space in which a variety of aesthetics, sometimes remarkably complementary, sometimes unexpectedly tension filled, could be respectfully and generatively engaged and reflected in the work.

Increasingly we worked to develop design practices to surface and acknowledge our collective experiences and help us to work toward imagining new possible futures. For example we often engaged in “river of life” activities, which is a visual narrative method that supports collaborators in telling their stories, perspectives, and diverse expertises about the past, present, and future by creating a collective visual artifact, working toward unpacking the trajectories that made the present moment possible and helped to imagine future trajectories. We used this practice in multiple ways—sometimes to surface multiple perspectives, but also they served as an artifact that helped hold and reflect the complexities of our positionings and intersubjectivities, particularly as we were trying to cultivate change. For example, it became increasingly clear to many people in the project that we were complicit in constructing particular narratives and identities about urban Indians that, as Lemke (2002) suggested, “made old truths and old rights transparently matters of special interest rather than commonsensical and necessary” (p. 41).

For example, contemporary narratives of Chicago often located the presence of Indigenous people as originating with the Termination and Relocation era of the 1940s to 1960s in which the U.S. government relocated Native peoples by force, choice, and coercion in a post-boarding school era to assimilate us into the American mainstream with promises of education, jobs, and homes. These narratives are often extended to deficit-based discourses of landless, urban, assimilated Indians and circulate both within and outside the Chicago Native community. However, Chicago is actually the ceded and unceded territory of many different Native Nations and has always been an intertribal place with stories of migration and flux among tribal people predating European contact. Indigenous peoples, and especially children who are currently urban-dwelling Native people, are often subjected to a barrage of micro- and macroaggressions that work to delegitimize and negate our indigeneity. Often these narratives are perpetuating a historicized and colonial view of Indigenous peoples (Shear, Knowles, Soden, & Castro, 2015).

There are important differences in positioning children as walking and living in the same places their ancestors did versus walking and living in places that are not or no longer Indigenous and what senses of self and possible futures are afforded. This is almost never how learning environments engage and position Native children living in urban places. The normative positionings of Native children living in urban places perpetuate colonization on Indigenous peoples and create serious barriers for children in developing senses of identity in the present and developing and valuing possible Indigenous futures (see Tuck & Yang, 2012). Axiologically, the difference in positioning is squarely located in de colonial choice and Indigenous transformative agency. For us designing with critical historicity is more than recognizing history or its current

imprints on activity; it requires working to dislodge and undermine normative axiological assumptions and ideological claims and also *make* (critique and visibility alone is not enough) new articulations in ways that reach for and help propel socioecologically just and sustainable forms of human activity.

In our experience, sometimes these new modes or articulations are far more actionable than are often assumed. For us the persistent forms of age segregation assumed in the design of learning environments is one such example.

## Learning across generations

Critical historicity sees age segregation as a site of deep axiological and ideological conflict for Indigenous communities that has had significant impact on learning and constellations of social practices. The projects we have been involved in were committed to learning across generations and deliberately engaged elders, parents, youth, teachers, interested community members, and professional scientists, as well as research staff drawn and developed from within community to conceptualize, design, implement, and study learning environments.

This aspect of learning across generations stands in contrast to the forms of age segregation that are routinely accepted in work and school. We composed our design teams to be intergenerational, in part because we suspected that creating robust and transformational interventions cognizant of historically accumulating inequity required multigenerational perspectives. The cleaving of generations in Indigenous communities has been a key policy strategy of assimilation efforts across multiple generations in the United States and other settler nations. Generational segregation eroded familial relations, economic systems, governance systems, and many other dimensions of community life. Indeed generational segregation has become a persistent and normative structure of everyday life and work in Western-style schooling and many industrialized nations and is changing the way interaction, learning and meaning is constructed (e.g., Alcala, Rogoff, Mejia-Arauz, Coppens, & Dexter, 2014; Coppens et al., 2014; Rogoff, 2014; Rogoff, Paradise, Arauz, Correa-Chávez, & Angelillo, 2012).

Moving toward community well-being in our project context meant restoring healthy intergenerational relations and forms of activity. This was more than the consultative, listening, and feedback models used to include elders' voices, youth voices, or any underengaged and silenced population in the design of learning environments. It meant recognizing that age segregation has particular purposes, impacts, affordances, assumptions, challenges, and histories that were designed to eradicate Indigenous norms and then deliberately making decisions to resist age segregation. This commitment to intergenerational learning in the design process also started to manifest in new ways with programming we implements.

For example, one of the cascading program initiatives that emerged in our programs focused on persistent health disparities, especially around diabetes, in the face of many community efforts and programs. Despite earnest efforts in the community, including some people involved in the project who had formerly been employed in such efforts, there was a general sense of dissatisfaction with the ways these issues had been approached. Project participants saw explicit or implicit deficit framings embedded in community programming efforts that often made community members feel shamed. Project staff and community members, building from our earlier efforts at remaking relations with plant life, what we call our plant relatives, and urban harvesting (e.g., Bang et al., 2014), landed on a program focused on food sovereignty and healthy lifestyles in a program called "kids creations." Over time, this perspective on food sovereignty was integrated into early childhood programming. The need to involve the whole community in aspects of kids creation emerged, and kids began organizing and hosting intergenerational community healthy eating events featuring Indigenous foods. They also began to integrate these efforts in feeding programs focused on elders. This development became especially important, as it was viewed as a distinctly youth-led form of change in community.

The need for considering the positioning of intergenerational relations and their functions in learning environments is wholly underconsidered or narrowly considered in our view. Narrow forms of intergenerational relations imagined and instantiated in research and in the design and implementation of learning environments may be serving quite counterproductive ends with respect to equity and cultivating resiliency and community well-being. Whereas youth-led methodologies have done perhaps the best at raising these issues and should not be abandoned, in our experience, although empowering and transforming for young people, they are not always restorative of intergenerational relations in everyday activity. In our work, we came to recognize that age-segregated learning environments tended to disrupt coloniality and even promoted intergenerational segregation as commonsensical and normative. In short, developing learning and agency in Indigenous communities seemed to require intergenerational relations. We did this with respect not only to how we designed and implemented our learning environments functioned, but also in the way we organized the administration and infrastructure of the work. This, too, became a site informed by critical historicity that brought to light the need for axiological innovations.

### **Strategic transformations of institutional relations**

In our work, recognizing the plethora of ways in which institutional structures create and perpetuate inequity, we tried to engage in strategic transformations of institutional relations and practices in the development, design, and outcomes of our projects. Critically, we did not think about this as just outcomes of our work, but also how we establish partnerships, establish flows of work, structure project governance and decision making, allocate resources, and share expertise. A central aspect of this was to intentionally form partnerships in which the center of research and “social gravity” (Erickson, 2006) was located in community. Quite literally we created a research center within the community center, and our research team contributed to and participated in the daily flows of activity within the community center as a principled structure of our work. All research staff had to contribute time and support to community-directed activities not planned or directed by our research team. This meant everything from assisting with the setup and cleanup of community events, to the physical labor of unloading delivery of food for the food pantry when needed, to serving food at elders’ luncheons, and other tasks needing community collaboration. This structuring flipped the typical flow of work in research partnerships and shifted the view of pressing problems and solutions routinely.

In addition to structurally recentering research efforts in communities, we also considered that the inequities and differences in resources (material and human) between large institutions and community organizations is staggering and are often clear sites of wealth and structural racism. In our view, increased attention to these dimensions are necessary for improving our work. In our projects we have paid explicit attention to these dimensions in part because we partner with Native nations and institutions, so tribal sovereignty and Indigenous self-determination are central and must be actively followed. Thus research must be conducted in ways that abide by, uphold, and strengthen these political and structural dimensions. For example, when conducting research with reservation communities, investigators must go through the tribal approval process; Institutional Review Board approval from a mainstream institution is not sufficient (Lomawaima, 2000). With urban communities we have set up advisory boards and asked them to function in similar ways—though they lack the legal status of Institutional Review Boards.

An additional initial effort for strategically transforming institutional relations was focused on strengthening the institutional capacity of Native “owned” and run organizations and utilizing the expertise and human resources of large universities. The American Indian Center has now successfully managed five large National Science Foundation grants, including the scientific, administrative, and fiscal management and oversight. Although this may seem old hat for researchers, for community organizations developing these capacities and accessing indirect dollars at federal rates can be a

game changer. Accessing resources though requires many nuanced institutional policies, procedures, and administrative infrastructure in which many community-based organizations have had little opportunity to develop expertise. In our experience the research institution's willingness to provide institutional mentoring was critical in forming partnerships and propelled community organizations into new funding arenas, as well as accumulating forms of institutional and social capital. This itself is a kind of axiological innovation that can and should be documented and studied.

## Discussion

In this article we have explored how three interrelated design commitments of critical historicity, intergenerational learning, and transforming institutional relations emerged and functioned in our work. Importantly, these three dimensions recursively reframed each other in ways that made them work in generative tensions and in our view opened spaces in which axiological innovations were more likely to occur or at least be considered. We think that a fundamental aspect of achieving equitable partnerships and intersubjectivities that cultivate transformative agency in joint activity may well rest on the openness and deliberate cultivation of axiological innovations. In our experience, CBDR—that is, design efforts that work from within the “ongoingness” of communities—may be helpful in the further exploration into the multiplicities of possible instantiations of these design commitments and in the development of new ones that afford the potential for continued axiological innovations in research and practice.

As axiological innovations and transformative programming emerged in our work, and deeper levels of contradiction emerged, they recursively challenged our theories of change and underscored the need for much broader axiological innovations, particularly in institutional relations. As community organizations (and likely other kinds of organizations/institutions as well) like the American Indian Center develop capacity and accumulate previously unaccessed institutional and social capital, how does the decolonial sensibility reflected in programming and community activity persist or resist appropriation given that is unreflective of the broader social world? This question is also true of scholars occupying positions in institutions of privilege and power.

Increasingly, scholars taking up sociocultural perspectives are interested in more robust understandings of the ways in which historically evolving political dynamics pressure, sculpt, impact, and transform the practices of historically defined cultural communities and the learning that unfolds in them. Community psychology's focus on processes of empowerment at the community scale could be an important cross-fertilization. Achieving the kind of change making that much of CC and CHAT-related scholarship aspires to will hinge in our view on the extent to which the risks of the political nature of change work is distributed among researchers, practitioners, and community members in ethically and positionally appropriate ways. Often the risks and rewards of change making work are not distributed in equitable ways.

Scholars tend to occupy comparatively profound places of privilege across a range of dimensions. This privileged positioning is not absolute or stagnant, but it is also not unstable. Beyond the obvious pay scale and relative job security, we also tend to have access to social capital and influence far beyond many community partners—at least this has been startlingly true in our own trajectory from being deeply rooted and employed in community-based organizations to becoming scholars who continued working in community organizations, and for some of us who eventually came to work in/from the academy. Our own trajectories and the profound shifts in positioning we have experienced make us acutely aware of the complex terrain of accountability to communities. We are compelled to ask, What is ethical and accountable work with respect to the communities we and our families are a part of and where a significant part of our scholarship is focused? What does it mean to be accountable to community as a scholar and community member? What are the risks and opportunities of research for community? For ourselves and our families? What forms of life are made or unmade as a result of the work? Of course these are not new questions. Scholars have been wrestling with them for generations—and they need to continue to be asked in current times.

In our view it is precisely these kinds of questions that evoke the need for axiological innovations in learning environments and research. In meeting the call for creative, deliberate, and consequential interventions (e.g., Gutiérrez & Jurow, 2014; Lee, 2001), we will need axiological innovations to surface and become visible parts of our collective work, and importantly, not just in our slowed reflective spaces, but in the moments of witnessing including our withinness thinking and designing. Axiological innovations, especially those that reflect a “profound faith in the creative possibilities” (Gaztambide-Fernandez, 2012, p. 61) and transformative agency of people in relations with places making their stories-so-far (Massey, 2005), may be the key to new cascades of insights to just and sustainable forms of life.

## Acknowledgments

Chi Miigwetch to the Chicago American Indian community. Your love, resiliency, and leadership are remarkable in all ways. Thank you to Douglas Medin, David Bender, Lawrence Curley, George Strack, Fawn Pochel, Janie Pochel, Felicia Peters, Eli Suzukovich, Mike Marin, among many others, who were all key project leaders in various activities mentioned in this article. Thank you to Mike Cole, Andy Blunden, Angela Booker, and Shirin Vossoughi for your feedback about the earlier manuscript version. Your efforts made this article better.

## References

- Aitken, S. (2010). Thrown-togetherness: Encounters with difference and diversity. In D. DeLyster, S. Herbert, S. Aitken, M. Crang, & L. McDowell (Eds.), *The Handbook for Qualitative Methods in Geography* (pp. 46–69). London, England: Sage Publications Ltd.
- Alcala, L., Rogoff, B., Mejia-Arauz, R., Coppens, A. D., & Dexter, A. L. (2014). Children’s initiative in contributions to family work in indigenous-heritage and cosmopolitan communities in Mexico. *Human Development*, 57, 96–115.
- Alfred, T. (2005). *Wasáse: Indigenous pathways of action and freedom*. Ontario, Canada: Broadview Press.
- Bang, M., Curley, L., Kessel, A., Marin, A., Suzukovich III, E. S., & Strack, G. (2014). Muskrat theories, tobacco in the streets, and living Chicago as Indigenous land. *Environmental Education Research*, 20(1), 37–55.
- Bang, M., & Medin, D. (2010). Cultural processes in science education: Supporting the navigation of multiple epistemologies. *Science Education*, 94(6), 1008–1026.
- Bang, M., Medin, D., Washinawatok, K., & Chapman, S. (2010). Innovations in culturally based science education through partnerships and community. In *New Science of Learning* (pp. 569–592). New York, New York: Springer New York.
- Bang, M., Warren, B., Rosebery, A. S., & Medin, D. (2012). Desettling expectations in science education. *Human Development*, 55(5/6), 302–318.
- Barnhardt, R., & Kawagley, O. (2005). Indigenous knowledge systems and Alaska Native ways of knowing. *Anthropology & Education Quarterly*, 36, 8–23.
- Bell, P. (2004). On the theoretical breadth of design-based research in education. *Educational Psychologist*, 39, 243–g253.
- Bell, P., Lewenstein, B., Shouse, A. W., & Feder, M. A. (Eds.). (2009). *Learning science in informal environments: People, places, and pursuits* (Committee on Learning Science in Informal Environments, Board on Science Education, Center for Education, Division of Behavioral and Social Sciences and Education, National Academy of Sciences). Washington, DC: The National Academies Press.
- Brayboy, B. M. (2000). The Indian and the researcher: Tales from the field. *International Journal of Qualitative Studies in Education*, 13, 415–426.
- Brayboy, B. M. J. (2013). Tidemarks and legacies: Building on the past and moving to the future. *Anthropology & Education Quarterly*, 44, 1–10.
- Brayboy, B. M. J., & Castagno, A. E. (2008). How might Native science inform “informal science learning”? *Cultural Studies of Science Education*, 3, 731–750.
- Brown, A. L. (1992). Design experiments: Theoretical and methodological challenges in creating complex interventions in classroom settings. *The Journal of the Learning Sciences*, 2, 141–178.
- Cajete, G. (2000). *Native science: Natural laws of interdependence*. Santa Fe, NM: Clear Light Publishers.
- Cole, M. (1998). *Cultural psychology: A once and future discipline*. Cambridge, MA: Harvard University Press.
- Collins, A., Joseph, D., & Bielaczyc, K. (2004). Design research: Theoretical and methodological issues. *The Journal of the Learning Sciences*, 13, 15–42.
- Coppens, A. D., Silva, K. G., Ruvalcaba, O., Alcalá, L., López, A., & Rogoff, B. (2014). Learning by observing and pitching in: Benefits and processes of expanding repertoires. *Human Development*, 57, 150–161.

- Coulthard, G. (2014). *Red skin, White masks. Rejecting the colonial politics of recognition*. Minneapolis: University of Minnesota Press.
- Deloria, V. (1979). *The metaphysics of modern existence* (Vol. 11). San Francisco, CA: Harper.
- DiSessa, A. A., & Cobb, P. (2004). Ontological innovation and the role of theory in design experiments. *The Journal of the Learning Sciences*, 13, 77–103.
- Edelson, D. C. (2002). Design research: What we learn when we engage in design. *The Journal of the Learning Sciences*, 11(1), 105–121.
- Engeström, Y. (2004). New forms of learning in co-configuration work. *Journal of Workplace Learning*, 16, 11–21.
- Engeström, Y. (2011). From design experiments to formative interventions. *Theory & Psychology*, 21, 598–628.
- Engeström, Y., & Sannino, A. (2014, June). *Formative interventions and transformative agency: Principles, practice, and research*. Paper presented at the 11th International Conference of the Learning Sciences, Boulder, CO.
- Engeström, Y., Sannino, A., & Virkkunen, J. (2014). On the methodological demands of formative interventions. *Mind, Culture, and Activity*, 21(2), 118–128.
- Erickson, F. (2006). Studying side by side: Collaborative action ethnography in educational research. *Innovations in Educational Ethnography: Theory, Methods, and Results*, 235–258.
- Fine, M. (2006). Bearing witness: Methods for researching oppression and resistance—A textbook for critical research. *Social Justice Research*, 19, 83–108.
- Gaztambide-Fernández, R. A. (2012). Decolonization and the pedagogy of solidarity. *Decolonization: Indigeneity, Education & Society*, 1(1).
- Gutierrez, K. D., & Jurow, S. (2014, June). *Designing for possible futures: The potential of social design experiments*. Paper presented at the 11th International Conference of the Learning Sciences, Boulder, CO.
- Gutierrez, K. D., & Rogoff, B. (2003). Cultural ways of learning: Individual traits or repertoires of practice. *Educational Researcher*, 32(5), 19–25.
- Gutiérrez, K. D., & Vossoughi, S. (2009). Lifting off the ground to return anew: Mediated praxis, transformative learning, and social design experiments. *Journal of Teacher Education*, 61, 100–117.
- Kawagley, A. O. (2006). *A Yupiaq worldview: A pathway to ecology and spirit*. Waveland Press.
- Kovach, M. E. (2010). *Indigenous methodologies: Characteristics, conversations, and contexts*. Toronto, Canada: University of Toronto Press.
- Latour, B. (2013). *An inquiry into modes of existence*. Cambridge, MA: Harvard University Press.
- Lee, C. D. (2001). Is October Brown Chinese? A cultural modeling activity system for underachieving students. *American Educational Research Journal*, 38, 97–141.
- Lee, C. D. (2003). Why we need to re-think race and ethnicity in educational research. *Educational Researcher*, 32(5), 3–5.
- Lee, C. D., Spencer, M. B., & Harpalani, V. (2003). “Every shut eye ain’t sleep”: Studying how people live culturally. *Educational Researcher*, 32(5), 6–13.
- Lemke, J. (2002). Ideology, intertextuality, and the education of science. In P. H. Fries, M. Cummings, D. Lockwood, & W. Spruiell (Eds.), *Relations and functions within and around language* (pp. 32–55). New York, NY: Continuum.
- Lomawaima, K. T. (2000). Tribal sovereigns: Reframing research in American Indian education. *Harvard Educational Review*, 70, 1–23.
- Martin, D. B. (2009). Researching race in mathematics education. *The Teachers College Record*, 111, 295–338.
- Massey, D. (2005). *For space*. London, UK: Sage.
- Medin, D. L., & Bang, M. (2004). The cultural side of science communication. *Proceedings of the National Academy of Sciences*, 111(Supplement 4), 13621–13626.
- Million, D. (2011). Intense dreaming: Theories, narratives, and our search for home. *The American Indian Quarterly*, 35, 313–333.
- Moll, L. C., & González, N. (2004). Engaging life: A funds of knowledge approach to multicultural education. *Handbook of Research on Multicultural Education*, 2, 699–715.
- Nasir, N. I. S., Rosebery, A. S., Warren, B., & Lee, C. D. (2006). Learning as a cultural process: Achieving equity through diversity. In R. K. Sawyer (Eds.), *The Cambridge handbook of the learning sciences* (pp. 489–504). Cambridge, UK: Cambridge University Press.
- Reardon, J., & TallBear, K. (2012). Your DNA is our history. *Current Anthropology*, 53(S5), S233–S245.
- Rogoff, B. (2003). *The cultural nature of human development*. Oxford, UK: Oxford University Press.
- Richardson, T. (2011). Navigating the problem of inclusion as enclosure in native culture-based education: Theorizing shadow curriculum. *Curriculum Inquiry*, 41(3), 332–349.
- Rogoff, B. (2014). Learning by observing and pitching in to family and community endeavors: An orientation. *Human Development*, 57, 69–81.
- Rogoff, B., Paradise, R., Arauz, R. M., Correa-Chávez, M., & Angelillo, C. (2012). Firsthand learning through intent participation. *Análise Psicológica*, 22, 11–31.
- Rosebery, A. S., Ogonowski, M., DiSchino, M., & Warren, B. (2010). “The coat traps all your body heat”: Heterogeneity as fundamental to learning. *The Journal of the Learning Sciences*, 19, 322–357.

- Shear, S. B., Knowles, R. T., Soden, G. J., & Castro, A. J. (2015). Manifesting destiny: Re/presentations of Indigenous peoples in K–12 US history standards. *Theory & Research in Social Education*, 43, 68–101.
- Shotter, J. (2005). *The short book of 'witness'-thinking*. London, UK: KCCF.
- Simpson, L. B. (2014). Land as pedagogy: Nishnaabeg intelligence and rebellious transformation. *Decolonization: Indigeneity, Education & Society*, 3(3). Retrieved from [decolonization.org](http://decolonization.org)
- Smith, G. H. (2004). Mai i te maramatanga, ki te putanga mai o te tahuritanga: From conscientization to transformation. *Educational Perspectives*, 37, 46–52.
- Smith, L. T. (1999). *Decolonizing methodologies: Research and indigenous peoples*. London, England: Zed Books.
- Tuck, E., & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, Education & Society*, 1(1). Retrieved from [decolonization.org](http://decolonization.org)
- Veracini, L. (2011). Introducing: Settler colonial studies. *Settler Colonial Studies*, 1, 1–12.
- Vossoughi, S., & Gutiérrez, K. (2010). Studying movement, hybridity, and change: Toward a multi-sited sensibility for research on learning across contexts and borders. *National Society for the Study of Education*, 113, 603–632.
- Wilson, S. (2008). *Research is ceremony: Indigenous research methods*. Winnipeg, Canada: Fernwood.
- Wolfe, P. (2006). Settler colonialism and the elimination of the native. *Journal of Genocide Research*, 8, 387–409.