Many lenses for planetary health: seeding citizen engagement for sustainable futures visioning with new ways of seeing

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Abstract

Objectives This pilot project sought to seed citizen engagement processes for sustainable futures visioning with ideas, perspectives, and processes informed by Indigenous ways of knowing.

Methods Five circle dialogues were convened with students, faculty, and members of the public, in the spring of 2019, using Indigenous talking circle methodology and intentionally seeded with “disruptive” ideas to encourage reflexivity and open space for “out-of-the-box” thinking. These were complemented by a series of one-on-one dialogues with members of the pan-Canadian research team. Pre- and post-dialogue surveys, notes taken by participants, team members, and co-facilitators, as well as notes from one-on-one interviews, constituted the data drawn upon for this paper.

Results Participants were overwhelmingly positive about their experience, noting they were able to go further and deeper in their thinking and listening, and that they valued the Indigenous talking circle methodology, even if they stopped short of claiming the experience had transformed their way of seeing the world. Key points raised in the dialogues included the need for a more relational worldview, the need to repair severed relations with the land and nature, the importance of Indigenous ways of knowing, the importance of community building, and the need to question the fundamental assumptions undergirding contemporary Western societies.

Conclusions While caution must be exercised in drawing conclusions and extrapolating from this modest pilot project, our experience underscores the value of processes that intentionally catalyze critical reflexivity and openness to other ways of seeing, informed by Indigenous ways of knowing and talking circle methodology.

Résumé

Objectifs Ce projet pilote visait à faire germer des idées, des opinions et des processus éclairés par les modes de savoir autochtones dans des processus de mobilisation citoyenne pour faire naître des scénarios d’avenir durables.

Méthode Cinq cercles de dialogue ont été organisés avec des étudiants, des professeurs et des personnes du public, au printemps 2019, en faisant appel à la méthode autochtone des cercles de la parole et en semant délibérément des idées « perturbatrices » afin d’encourager la réflexivité et de sortir des sentiers battus. Les cercles ont été complétés par une série de dialogues individuels avec les membres de l’équipe de recherche pancanadienne. Les sondages pré- et post-dialogue, les notes prises par les participants, les membres de l’équipe et les coanimateurs, ainsi que les notes des entretiens individuels ont constitué la matière première du présent article.

Résultats La très grande majorité des participants ont trouvé l’expérience positive : ils ont dit avoir pu aller plus loin et plus profond dans leur réflexion et leur écoute et avoir apprécié la méthode des cercles de la parole autochtones, sans toutefois aller jusqu’à dire que l’expérience avait transformé leur vision du monde. Les principaux points soulevés dans les dialogues ont été le besoin d’avoir une vision du monde plus relationnelle, le besoin de réparer les relations rompues avec la terre et la nature, l’importance des modes de savoir autochtones, l’importance de la solidarité sociale et le besoin de remettre en cause les hypothèses fondamentales qui soutiennent les sociétés occidentales contemporaines.

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Conclusions S’il faut faire preuve de prudence avant d’extrapoler et de tirer des conclusions d’un simple projet pilote, notre expérience souligne la valeur des processus qui induisent intentionnellement une réflexivité critique et une ouverture à d’autres façons de voir, éclairés par les modes de savoir autochtones et par la méthode des cercles de la parole.

Keywords Indigenous knowledges · Sustainability · Public health · Dialogue · Citizen engagement

Mots-clés Savoirs autochtones · durabilité · santé publique · dialogue · mobilisation citoyenne

The crisis and opportunity of climate change and environmental degradation: a call for new lenses and perspectives

The environment, and our relationship to it, is a powerful determinant of population health that is increasingly recognized in public health circles (Hancock et al. 2015). Our work is predicated on the understanding that current dominant economic and social structures are incongruent with sustainability transition that needs to occur; to ensure the survival and flourishing of humans and ecological systems, which we depend upon, significant change is required (McAlpine et al. 2015). The scale and depth of change required to meet the combined challenges of climate change, ecological degradation, resource depletion, and escalating socio-economic inequality, in the required time frame of a decade or two, means that even bold deployment of the best risk management tools available in public health and allied fields may be too little too late. Redvers (2018) and Watson (2019) both argue that systems like public health have not worked rapidly enough with issues related to climate change, environment, or Indigenous traditional ecological knowledge.

Recognizing that, as Einstein is reported to have said, “we cannot solve the world’s problems with the same level of thinking that created them”, this work is arguably most transformative and powerful when it is able to draw on disparate ways of knowing to seed the future. Fortunately, there are many sources of inspiration to draw upon in fashioning what comes next: from marginalized epistemologies and methods (such as Buen Vivir, Freirian critical pedagogy, liberation theology and “collective health”), in Indigenous ways of knowing, and in land-based cosmologies (e.g., animism, deep ecology), and critical and progressive knowledge traditions and cultures at the margins (e.g., degrowth, political economy, critical race theory, ecofeminism). In these knowledge traditions are the seeds of an emerging future that is both anchored in ancient cultures and being (re)invented in countless social movement initiatives at the margins of the mainstream here and around the world. As previously noted, these knowledge systems, derived from centuries of cumulative knowledge that is based on observation, interactions with the land (and all that it holds) and a spiritual connection to all within the cosmos, have been discounted by dominant Western knowledge systems.

Recognition of the need for fulsome and inclusive citizen engagement to inform sustainable futures visioning and decision-making, as well as citizen leadership in local action, is by now widespread (Axon 2016; Larsen and Gunnarsson-Ostling 2009; Robinson et al. 2011; Seyfang and Haxeltine 2012; Zapata Campos and Zapata 2017). This paper addresses the need for innovation in citizen engagement processes for imagining and planning for a more sustainable future. In particular, it addresses the need to reach outside of dominant Western ways of knowing to incorporate non-dominant, Indigenous, and Global South perspectives, and to begin shifting public health practice to align with these other ways of understanding the world. Here, we report on our experience with the *Many Lenses for Planetary Health* project, at the heart of which was a set of facilitated circle dialogues using Indigenous talking circle methodology and seeded with ideas from outside contemporary mainstream sustainability futures orthodoxy. In so doing, our intention is to illustrate and catalyze the operationalization in public health of what have been numerous calls to pay closer and more respectful and inclusive attention to Indigenous and other non-dominant ways of knowing in the sustainability and social justice work being done in the field.

Following long traditions in critical pedagogy (Darder et al. 2009; Gruenewald 2003; Ledwith 2001) and transformative learning (Mezirow and Taylor 2009; O’Sullivan and Taylor 2004), we believe that bringing many seemingly disparate perspectives and paradigms into view will help loosen the hold that any one of them has on participants in futures visioning forums. Because of the tragic state of our world—including both what we have done to each other and what we have done to the natural world—many feel like we have painted ourselves into a corner from which there is no escape. By sharing and weaving stories of possibility from diverse ways of knowing, we can work to restore people’s faith in their own capacity to co-create a more desirable future, rather than waiting for it to be delivered from above by others (experts, government, businesses, or social movements) or giving up faith that a better future is possible, and that we can do this together, across differences, while being mindful of the enduring impact of positionality and history of colonial relations, and structural racism. As Williams and Claxton (2017) note, “the ‘Eighth Fire’ (Simpson 2008) Anishinaabe prophecy reminds us of

the possibility of a new peace and friendship, hinged on a radical renewal of kinship relations, between Indigenous and non-Indigenous peoples in Canada” (p. 59).

However, to do so will require an awareness of unequal power relations that structure oppressive systems of exploitation without losing sight of our own power to act, and to ground both in a healthy appreciation of the interconnectedness of all life and the intimate relationship between inner and outer change. In short, to source our *doing* from a different level of *being*. Public health can learn from a wide range of approaches and experiences, including those of “Two-Eyed Seeing” (Bartlett et al. 2012; Hatcher et al. 2009; Martin 2012), while being mindful of the challenges of bringing Indigenous and marginalized knowledges into the academy and the mainstream (Broadhead and Howard 2011; Cajete 2000; Davis 2010; Dei 2000; Dove 2006; Rist and Dahdouh-Guebas 2006). We flag here also the importance but also limitations of “cultural awareness” training (Downing and Kowal 2011; Rand et al. 2019) in the affinities but also important differences between (and non-substitutionality of) post-colonial and Indigenous ways of knowing (Browne et al. 2005; Getty 2010), and the need for genuine allyship and decolonization (Max 2005; MUACSN n.d.; O’Connell 2017; Smith 1999; Walia 2012; Wallace 2013). Mindful that decolonization is not a metaphor (Tuck and Yang 2012), non-Indigenous people must commit to structural and systemic change that will move decolonization toward concrete action. Too often, “solidarity”, “allyship”, “settler studies”, and even “decolonization” become yet another neo-colonial project (Gaztambide-Fernandez 2012; Davis 2010). Snelgrove et al. (2014) warn that “without centering Indigenous peoples’ articulations, without deploying a relational approach to settler colonial power, and without paying attention to the conditions and contingency of settler colonialism, studies of settler colonialism and practice of solidarity run the risk of reifying (and possibly ‘replicating’ settler colonial as well as other modes of domination” (p. 1). Much has, of course, been written about each of these, and it is beyond the scope of this paper to provide an extensive review; but we wish to signal their importance nonetheless.

We are not the first to point to the synergy between critical political ecology/world-systems approaches and Indigenous ways of knowing. While vastly different epistemologically and culturally, these offer powerful critiques of the dominant system’s eco-social destructiveness and the “metabolic rift” between systems of accumulation and living Earth systems. While there is no singular pan-Indigenous knowledge system, Indigenous peoples share knowledges that are anchored in ways of being that are deeply relational and spiritually grounded, that state that Mother Earth provides what is needed to live sustainably, to take only what is needed, and to give thanks for what is provided, which clearly is inconsistent with the dominant western approach (Redvers 2018; Wild

2017). We offer this plea to “indigenize or die” (the title of a series of recent community dialogues organized by Unify Toronto) with some hesitation, recognizing that Indigenous knowledge has been forced underground through decades of colonization, forced “assimilation”, cultural genocide, and other forms of marginalization. Although Indigenous ways of knowing and being are more widely accepted now, Indigenous people themselves are still oppressed and face continued colonization. We recognize there is much at stake in making this knowledge more visible, including the co-opting of Indigenous knowledges for profit or for the more ‘successful management’ of the status quo. There is much that is not yet visible to the dominant order because it cannot be heard within Western frames of reference, such as the call to live in “sacred reciprocity” with “all our relations”, and to “listen to the land”. Ours is not a call for further cultural appropriation in the name of continued “progress”, or even what passes for “dialogue” across difference. The call is not to understand and “use” Indigenous knowledge, but to come into “right relationship” with our Indigenous brothers and sisters and with Mother Earth through meaningful reconciliation and decolonization, and for the settlers among us to open our hearts to the possibility of being “unsettled” by other ways of seeing and being.¹ At this juncture in human history, we are all in need of decolonization from the dominant modernist western paradigm of scarcity, exploitation, endless growth, profit-maximization, wealth accumulation, alienation, and the myth of separation (see Poland 2020). The deep transformative change we are being called into at this time is arguably, above all else, a cultural (and indeed cosmological) shift in ways of being and relating to the natural world, opening to re-enchantment with the sacredness of all life in a way that breathes new life into the notion and practice of community, reciprocity, co-creation, regenerative sustainability (Robinson and Cole 2015), and “living well”/ Buen Vivir (Thomson 2011) within planetary limits, to include what some are now referring to as “deep adaptation” (Bendell 2018).

If public health is to play a role in this seismic shift, it must relinquish its propensity to be the handmaiden of the status quo through strategies of risk management, the primary effect of which is to manage the fall-out of conventional systems while failing to question the deeply problematic and unsustainable nature of these systems, and instead learn how to midwife the transition by partnering with unusual allies (civil society, social movement, and Indigenous groups) in pressing for transformative change (Hancock et al. 2015). Promising examples of such work can be found in several quarters, such as the ECHO network (www.echonetwork-reseaecho.ca/),

¹ Poland and Bowra are settlers of European origin, and Mashford-Pringle is an Indigenous woman of Algonquin heritage, and Associate Director of the Waakebiness-Bryce Institute for Indigenous Health at the University of Toronto.

the National Collaborating Centre on Indigenous Health (www.nccih.ca), EDGE (www.cpha.ca/EDGE), and A Shared Future (asharedfuture.ca), to name but a few.

This paper reports on a Canadian Institutes of Health Research-funded pilot project (Planning Grant # 402770, <https://manylensesproject.home.blog>) that explored how to bring Indigenous and other non-dominant ways of knowing into curated group conversations about where humanity is headed as a species. The purpose of this work was to learn about how community engagement for envisioning sustainable futures can be more explicitly informed by non-dominant knowledge traditions and practices, specifically those anchored in Indigenous cultures. We begin by describing the framing and methods of the Many Lenses Project, followed by a discussion of key findings, and reflection on what we learned. We conclude with thoughts on where we think this work could go next in terms of implications for research and public health practice.

Methods: many lenses for planetary health

Building on prior experience with circle dialogue process that brought together leaders and students in health care management (Vernissage Health; <http://www.dlsph.utoronto.ca/2017/09/vernissage-health-supporting-tomorrows-health-leaders/>) and in community organizing (Change Dialogues), as well as a pilot project on reimagining education in troubling times (Pedagogy for the Anthropocene; Brisbois et al. 2017), and supported by a CIHR Planning Grant, Many Lenses for Planetary Health was conceived to address the challenge in citizen engagement processes involving sustainability futures visioning where participants frame a greener future as a predictable extension of the status quo (more electric cars and solar panels) rather than questioning the fundamental assumptions and worldview undergirding contemporary globalized capitalism. As previously noted, the Many Lenses Project reflects the understanding that the depth of change required in sustainability transition requires a capacity to think outside the box, unpack the dominant worldviews that normalize the status quo, and open to other ways of seeing, being, and doing. In the education field, this is referred to as “transformative learning” (Mezirow and Taylor 2009; O’Sullivan and Taylor 2004).

Whereas conventional citizen engagement processes seek to tap into what citizens already know and feel, to determine their preferences for different courses of action for a greener future, we wished to explore how ‘sustainability conversations’ could be “seeded” with content, frames, and processes that would bring a more critical and reflexive lens and engage ideas outside the mainstream. Our work was organized around the following

questions: How can we nurture population/planetary health by rethinking and reimagining the human presence in the Anthropocene? And how can culturally safe spaces be convened for the intentional incubation of new ways of being and doing, drawing widely on many knowledge traditions, paying particular attention to the contributions that Indigenous ways of knowing, being, and doing, Global South epistemologies and methods, animistic and critical western thought, and social movements as powerful agents of change, could bring to such an undertaking?

The work was undertaken in the context of a 1-year CIHR Planning Grant (No. 402770) that itself built on insights from an earlier Pedagogy for the Anthropocene project aimed at reimagining transformative education for social and ecological change (Brisbois et al. 2017), as well as ongoing efforts of the Waakebiness-Bryce Institute for Indigenous Health (WBIH) to weave land-based learning into the curriculum for the new Master of Public Health in Indigenous Health and Collaborative Specialization in Indigenous Health (Mashford-Pringle and Stewart 2019).

Setting and participants

This initiative took place in an urban, university setting. Eighteen participants were recruited from both the general public and student population (equal numbers of men and women participated). Convenience sampling was employed to recruit students via student email lists while the general population was recruited via the social media accounts of the WBIH, as well as posts on Toronto Community Development group on [Meetup.com](https://www.meetup.com), a social networking website available to the general public. Four of the five dialogue circles were open to both students and the general public, while one of the dialogue circles was open only to students enrolled in either the Master of Public Health in Indigenous Health program or the collaborative program in Indigenous Health at the Dalla Lana School of Public Health (University of Toronto). Thirty-dollar honorariums were offered to participants who self-identified as having to take unpaid time away from work or if they were not otherwise gainfully employed.

Data generation

This pilot project revolved around the creation and hosting of a series of five dialogue circles rooted in Indigenous talking circle methodology (Lavallée 2009; Tachine et al. 2016), and several processes (i.e., individual interviews, written input, and documents from other environmental research) for reflecting on the experience for the research team and circle dialogue participants. The dialogue circles were conducted

using an emergent design methodology, meaning that while the research team conducted the first session with an initial plan, subsequent sessions were modified based on feedback from participants and team members (Morgan 2006). Each dialogue circle lasted 2–2.5 hours and included 2–6 participants, plus three research team members. In addition, an Indigenous Knowledge Keeper attended 3 of 5 dialogue circles based on his personal availability. In those instances, the dialogue circles began with a smudging and opening prayer, which is an Indigenous way of starting a talking circle and opening minds and hearts to new ways of thinking as well as inviting the ancestors to guide the process (Clayton Shirt, personal communication). “Smudging” is a traditional Indigenous practice in North America to cleanse or purify with the smoke of one of the four sacred medicines (tobacco, cedar, sage, or sweetgrass) in a similar fashion to washing with water; over the head, to the eyes, ears, nose, and mouth, and toward the heart (Shawanda 2017).

The session began with an initial “check-in” go-around of the circle, in which participants were invited to introduce themselves and say something about what drew them to sign up for the session. Then two short videos were shown to spark discussion. The videos were chosen to assist participants to think about the environment and climate change or spark their thoughts about the topic at hand. The first, entitled “Happiness” by Steve Cutts (Cutts 2017), was chosen for its satirical take on consumerism and the pursuit of happiness through material acquisition. Our aim in selecting this one was to invite critical distance from and awareness of the core assumptions and drivers of contemporary Western society. The second video was a trailer for the documentary “The Economics of Happiness”, directed and produced by Helena Norberg-Hodge (Norberg-Hodge 2011). This video was selected for its hopeful tone and discussion of challenges and potential solutions to our current sustainability issues. Both were intended to signal an openness toward “out-of-the-box” thinking.

A semi-structured discussion was then facilitated by one of the Many Lenses Project (MLP) co-principal investigators (Poland and Mashford-Pringle) who would bring a question into the circle for consideration, share some opening thoughts as an introductory way to engage in the topic, and pass a talking stone around the circle. A semi-structured guide of questions was used at the discretion of the facilitator. While holding the talking stone (an object used in talking circles to indicate who is able to speak so that everyone is not speaking at once), each participant was invited to address the question, share their thoughts, or pass their turn. In discussions with the Knowledge Keeper, a time limit was established of 2 hours. Sticky Notes and writing utensils were available for each participant to write down thoughts or take notes while others were speaking (which we encouraged but did not require). In discussions

with the Knowledge Keeper, we agreed that the short duration of the discussions would not allow all participants to fully engage in the talking circle methodology, which can sometimes be hours long. As such, it was agreed in advance with the Knowledge Keeper that participants could write down their thoughts as either speaking points or to capture their thoughts more fully.

Once the time limit was reached, or the circle came to a natural close, the Knowledge Keeper closed the circle in a “good way”,² and a final “check-out” was done. During this last go-around, participants were asked to share about their experience in the dialogue circle and any final thoughts they had.

A brief paper and pencil survey/evaluation form was administered as participants arrived (covering demographics, and expectations and motivations for participating) and at the end of the circle (self-rated impact). Informed consent was sought from all participants, in accordance with standard research ethics board (REB) practices, and with the permission of the ethics review board at the University of Toronto. Although CIHR does not intend that their modest (\$20K) planning grants be used for primary data collection, we felt it important to take these additional steps, knowing that we wanted to write about and share our experience with others, in more than simply anecdotal terms.

In addition to the dialogue circles, we undertook a series of intentional one-on-one dialogues with each member of our research team, recognizing that team meetings are not the best avenue for tapping into the wisdom available to us in the outstanding group of co-investigators and collaborators we were fortunate to have assembled. These were undertaken by one of the co-principal investigators, and notes taken during and after each conversation became the material we worked with to generate the themes described below.

Data analysis

In addition to the notes generated in one-on-one conversations with members of the extended research team (as noted above), data collected in this study consisted of written notes taken by three members of the research team during the generative dialogue sessions, given that the 1-year duration and modest resourcing of the project precluded the recording, transcription, and more detailed analysis of each session. After each dialogue circle, the three sets of notes were compared and compiled resulting in a more fulsome account of the dialogue. Sticky Notes containing notes written by participants and team members were also collected and analyzed alongside observational notes, using an inductive thematic analysis approach

² “In a good way” is an expression used by many Aboriginal communities to denote participation that honours tradition and spirit. Among the Anishinaabe people, this is embodied through the Seven Grandfathers Teachings of wisdom, love, respect, bravery, honesty, humility, and truth (Flicker et al. 2015).

(Braun and Clarke 2006). To begin, research notes were read through to gain an overall understanding of the content and to compare observer notes to ensure they were comprehensive. Initial codes were then generated to identify and label patterns and elements in the data relevant to the research questions. Themes were then identified to capture larger patterns between similar or overlapping codes. Codes that did not fit into broader meaningful themes were either discarded, or became their own stand-alone theme based on their relevance to the research questions. Finally, excerpts that contained relevant and meaningful quotations were selected to support the themes.

Results

While some participants told us (in the opening check-in where they were invited to say what drew them to participate) they were motivated by the monetary compensation offered, most participants indicated a desire to learn more about different perspectives on sustainability. When asked, in the pre- and post-event surveys, “On the whole, how similarly or differently do you see the world compared to the mainstream³”, the mean score of 2.5 (out of a 5-point Likert scale) remained in pre- and post-surveys. This is unsurprising, given that the self-selected nature of participants means that those most interested in new ways of seeing would be the most likely to participate, and given the short nature of the “intervention” relative to the significance of the task (transformative learning, deeper perceptual shifts). We posted the talking circles on social media, through student mailing lists, and other publicly open forums to attempt to recruit a wide cross-section of participants; however, we are aware that those most interested in systemic and institutional change likely responded to the recruitment requests. Free-form responses to questions about their talking circle experience and what they found most meaningful were nevertheless very positive. Appreciation was expressed for the Indigenous talking circle method, the opportunity to be heard and to listen more deeply than usual, the invitation to think in new ways, and the creation of a respectful and non-judgemental space in which to share feelings and emotions. Most said they would have liked the circle dialogue to be extended beyond the 2 hours set aside for the talking circles.

Talking circle themes

Several themes were identified across all five dialogue circles. The term *relationship* and its many

interpretations were frequently discussed by participants. This included explorations of what it means to be in reciprocal relationship with the environment. Many participants expressed the need to shift existing extractive relationships to ones characterized by genuine reciprocity. The theme of relationship was further discussed in the form of connection and the lack of connection that many people feel with nature and the land. One participant described this lack of connection:

“The chaos that we live in now exists due to our loss of connection. This affects our spirit. We cannot sustain what we have because there is no connection.”

The themes of *spirit* and *sacredness* were woven throughout our talking circles, perhaps not surprising given the inclusion of a Knowledge Keeper, opening prayer with a smudge, and closing prayer. One participant described how they saw the connection between spirit and sustainability thusly:

“Real sustainability to me means the capacity to see with clear eyes the choices we’ve made and to reconnect with spirit and the sacredness of all life.”

Colonization and the consumerist, materialistic, exploitative, individualistic culture of contemporary *capitalism* were repeatedly cited as major contributors to the destruction of the planet. These systems were seen as a continuing barrier to creating more sustainable ways of living. The sense of entitlement to appropriate the Earth for our own human purposes was also highlighted as a barrier to relations of sacred reciprocity:

“Why do we feel that the earth’s resources are ours as humans? Why do we feel that the earth belongs to us?”

Sustainability was thus seen to require a turning inward to reflect, individually and collectively, on the need for empathy, kindness, healing, and decolonization. Participants spoke of turning inward to look at ourselves as a way to begin to challenge the ways we see the world and the ways we choose to live.

“We, as a collective, as a community, need to decolonize ourselves. How do we do that? We need to consciously look for other ways of being and actively challenge the dominant paradigm.”

Multiple participants spoke of how their connection with their environment began or strengthened through *sustenance activities* such as planting, cultivating, preparing, and consuming their own food. One participant described the importance of being involved in this process:

³ “mainstream” in this context is the contemporary capitalistic/materialistic vantage point of individualism, consumerism, and humanity being superior to the natural world.

“There is value in being a part of the process of food activities rather than simply receiving the end product in a package. We are not connected to the things we buy and eat.”

Participants also told us that there is a need for *building community*, not only inclusively within the human family but also with the land and other sentient beings, as well as intergenerationally.

“We need to expand the definition of community to include people and places because we have a need for connection to both people and the land.”

Last but not least, as is so often the case with the topic of sustainability (Redvers 2018; Makoons Geniusz 2009; Wall Kimmerer 2013), the group’s attention would turn to the issue of hope and despair. Overall, there was a tension between wanting change, and not being able to envision what that change could look like, or even sense that it was possible.

“We are so immersed in capitalism that it is difficult to imagine another way.”

“We all know that hopelessness won’t help but still it is hard not to feel hopeless. There are so many barriers that need to be overcome for us to make real change.”

Supplemental one-on-one conversations with research team members

Our team of co-investigators and collaborators was hand-picked from across the country for their depth of expertise and engagement on the issues most pertinent to this project (see Acknowledgements). Recognizing early on the limitations of research team meetings to tap into the depth of knowledge reflected in our team, we also undertook a series of one-on-one conversations (8 in total) with members of our extended research team in April of 2019 to explore their understanding of sustainability transitions, the role of civil society and citizen engagement in sustainability transition, the potential of a range of perspectives (Indigenous and other ways of knowing/seeing), and how to crack open spaces for seeing differently.

Several key themes emerged from these conversations. In addition to acknowledging capitalism as being at the root of sustainability issues (rather than seeing sustainability as only a science and technology problem, or even a political will issue, as it is so often framed), many spoke of the potential for imminent systems collapse as a catalyst for deep transition, and the need for community-building as a welcome antidote to prevailing social and sustainability issues. Not surprisingly,

the need for multiple perspectives was widely acknowledged within the team, Indigenous ways of knowing in particular, especially the strong connection Indigenous peoples have to the land and the relationality of all living things. The need for, and actuality of, Indigenous leadership on these issues was noted, as was the need to listen to and include youth. It was noted that Indigenous peoples are at the forefront of many of the social movements for social and environmental justice. In the spirit of reconciliation, we were reminded that relations between Indigenous and non-Indigenous peoples must be mended, in part through recognizing Indigenous peoples’ right to self-determination and self-governance. The need for our research team and participants to actively work to decolonize ourselves from the dominant worldview was also discussed.

Discussion

Recognizing that problems cannot always be solved from the same level of thinking that created them, contemporary sustainability and social challenges are prodding us to look beyond conventional approaches to “greening” business as usual, and undertake the hard work required to decolonize ourselves (settlers in North American society) from the colonial, extractivist worldview that currently undergirds the status quo, and to release the fiction that sustainability is a technical risk management problem, or even one of political will. In so doing, we create space to acknowledge the existence and relevance of alternative and hitherto marginalized worldviews, ways of knowing, and perspectives that could be instrumental in the creation of what Charles Eisenstein (2013) refers to as the “more beautiful world our hearts know is possible”.

The Many Lenses for Planetary Health project was a pilot project and we note that the eighteen self-selected participants comprised university students and general public (as well as the conversations we held within the team) and cannot be seen as representative of the general population. We are thus wary of extrapolating much beyond our sample.

We are nevertheless struck by the potential for different ways of seeing and doing to inform out-of-the-box thinking about sustainable futures that do not simply reproduce forms of ecological modernization and the greening of business as usual through the premature galvanizing of “solutions” that do little to expose or transcend our deep complicity with the status quo (or our own troubled disconnection from land, community, spirit), but instead open to the possibility of society being organized in very different ways, and around fundamentally different values, ideas, and principles. This is what motivated us to seek funding for this work, and what we heard and experienced in the Many Lenses for Planetary Health project seems to support those initial convictions.

In comparison to the many other citizen engagement and circle dialogue processes we have witnessed and participated in, an Indigenous talking circle format co-facilitated by an Indigenous Knowledge Keeper, and seeded with short videos to catalyze out-of-the-box thinking, seemed to help participants go deeper and further than conventional engagement processes typically enable. Many participants claimed to have found the process and sharing not only enjoyable but sufficiently novel and meaningful as to have learned something new about themselves and about sustainability and other ways of seeing the world that encouraged deeper reflection on their own ways of seeing.

We are aware of, and draw the reader's attention to the fact that, the themes emerging in the discussions and reported upon above are not typical of most citizen engagement and sustainable futures visioning exercises. We think that our framing of the topic, choice of catalytic videos, and Indigenous talking circle format all contributed to this, though we are unable to say which of these was more influential. While we might be accused of seeding the discussions with "leading questions", we note that (a) while our stance probably drew out certain ideas rather than others, it is unlikely we unilaterally "created" these, but rather curated a space that was fertile ground for the discussion of themes and ideas that would normally be seen as risky to share in more conventional settings; and (b) we had no pretense of being "neutral", the work being informed by a clear intention to "seed" discussion with non-dominant ways of knowing.

The literature on "transformative learning" (Cranton 2016; Taylor and Cranton 2012), including work that links transformative learning to sustainability (Hathaway 2016; Lange 2004; Moore 2005; O'Sullivan and Taylor 2004; Sterling 2010) and to Indigenous ways of knowing (Ball 2004; Williams 2013), emphasizes that the urgency for change requires radical shifts in (adult and higher) education that catalyze, engender and support fundamental shifts in frames of reference (defined as both habits of mind and points of view) or worldview (O'Sullivan 1999; Mezirow and Taylor 2009). This aligns with, but extends beyond, calls for reform in public health education seen as necessary for more effective action on the ecological determinants of health (Hancock et al. 2015; Parkes et al. 2020; Poland et al. 2020; Yassi et al. 2019). As Moore (2005) emphasizes, transformative learning is not for the faint of heart: it can be heart-wrenching, disorienting, and it requires a level of maturity and capacity for critical reflexivity that may exceed what some learners and educators are able to bring to the table; it also requires supports for learners as they go through the emotional upheavals engendered by fundamental shifts in worldview that are mostly not available in settings of higher education (nor indeed in most

community-based or municipally driven citizen engagement processes, where the deeply emotional nature of the contemporary human predicament is scarcely acknowledged or engaged in a skillful empathic way). Without these, and the capacity to question authority and power inside and outside the classroom, there is a danger that transformative learning becomes mere buzzwords (Moore 2005). Taking these observations into account, we recognize the modesty of this initial foray into bringing transformative learning into citizen engagement processes for sustainability transition: something more immersive, collaborative, learner-driven, and land-based would be required to demonstrate fuller impact. And yet, citizen engagement processes are typically more constrained in time and level of commitment to reflexivity than what we developed for the Many Lenses project, so our work can be seen as an initial bridge between the two.

Tantalizing as these initial forays into doing citizen engagement differently are, they will need to be replicated and extended with other populations, issues, and places before anything conclusive can be said about how best to open up spaces for the consideration of alternative ways of seeing and being that might better serve sustainability transition. We note considerable alignment between many of the ideas raised in the talking circles and key elements of Indigenous ways of knowing (relational worldview, importance of community, connection to and learning from the land, traditional ecological knowledge, sacred reciprocity, spirituality, reconciliation, and even Indigenous resurgence). At the same time, few participants linked these ideas and values to the necessity for and issues of two-eyed seeing, decolonization, self-determination, sovereignty, self-governance, land repatriation, language revitalization, institutional racism, Indigenous resistance movements, and settler allyship. We are cognizant of cultural appropriation, and advocate for opening up citizen engagement processes to the broader panoply of knowledges and perspectives that might support our collective capacity to address pressing sustainability issues from a different level of thinking than that which created them. Notwithstanding these caveats, we suggest that the need to seed citizen engagement processes with other ways of knowing, including Indigenous knowledges, and utilize processes that better support deeper listening (inside and out), remains as urgent as ever to the transformative change required for true sustainability and the continued vitality of the ecological determinants of health. We hope that sharing our encouraging experience with the Many Lenses pilot project will inspire and inform other ongoing efforts to operationalize calls for decolonizing and indigenizing public health work on the ecological determinants of health, as well as reimagining what might be possible. At the same time, to quote Williams and Claxton (2017, p. 75), "Practices intended to cultivate social-ecological resilience in an era of reconciliation that has yet to move beyond 'colonial politics of recognition' (Coulthard 2014) require vigilance in retaining a critical perspective and continuing to take great care in how we hold key paradoxes

inherent in this work.” Part of this recognition is the acknowledgement that despite housing some progressive work and allies, higher education as a whole has a long and troubled history of alignment with colonialism that continues to this day (de Sousa Santos 2008), and that is not undone with land acknowledgements or the partial (reluctant or enthusiastic) “indigenization” of curricula or select spaces on campuses across the country, important as these may be in their own right. Decolonizing ourselves from the dominant western paradigm that is arguably at the root of contemporary environmental and social crises (or what Greenwood (2010) calls “problems of empire and globalization”) must, therefore, be accompanied with tangible efforts to re-centre Indigenous voices and priorities, and move reconciliation beyond a rhetorical veneer covering business-as-usual to the settling of land claims, Indigenous sovereignty and governance, addressing historic (and ongoing) Treaty violations, and the implementation of UNDRIP and all of the recommendations of the Truth and Reconciliation Commission. Reconfiguring citizen engagement processes related to envisioning alternative sustainable futures that better reflect the existence (and flourishing) of Indigenous peoples, Indigenous scholars and thought leaders, and Indigenous ways of knowing is but a small step in this direction, not to be misunderstood as (or seen as a stand-in for) the rest of the journey. A “critical pedagogy of place”, as articulated by Gruenewald (2003), seems a particularly promising way forward, bringing together as it does key elements of critical pedagogy and place-based/land-based experiential learning for “living well in place”, ecoliteracy, ecojustice, and anti-oppressive praxis.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

References

- Axon, S. (2016). ‘The Good Life’: Engaging the public with community-based carbon reduction strategies. *Environmental Science & Policy*, 66, 82–92.
- Ball, J. (2004). As if Indigenous knowledge and communities mattered: Transformative education in First Nations communities in Canada. *The American Indian Quarterly*, 28(3&4), 454–479.
- Bartlett, C., Marshall, M., & Marshall, A. (2012). Two-Eyed Seeing and other lessons learned within a co-learning journey of bringing together indigenous and mainstream knowledges and ways of knowing. *Journal of Environmental Studies and Sciences*, 2(4), 331–340.
- Bendell, J. (2018). Deep adaptation: A map for navigating climate tragedy. IFLAS Occasional Paper Two. <http://lifeworth.com/deepadaptation.pdf>.
- Brisbois, B., Cohen, R., Cortinois, A., Poland, B., Elton, S., Maddox, R., Mychajluk, L., Viand, K. “Pedagogy for the Anthropocene: Land-based learning for socioecological transformation”. Poster presented at the *Environmental Studies Association of Canada (ESAC) Annual Conference*, Ryerson, Toronto, May 29–June 1, 2017.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Broadhead, L.-A., & Howard, S. (2011). Deepening the debate over ‘sustainable science’: Indigenous perspectives as a guide on the journey. *Sustainable Development*, 19(5), 301–311.
- Browne, A. J., Smye, V. L., & Varcoe, C. (2005). The relevance of postcolonial theoretical perspectives to research in Aboriginal health. *The Canadian Journal of Nursing Research*, 37(4), 16–37.
- Cajete, G. (2000). *Native science: Natural laws of interdependence*. Santa Fe, NM: Clear Light Publishers.
- Cranton, P. (2016). *Understanding and promoting transformative learning: A guide for educators of adults* (Third ed.). San Francisco: Jossey-Bass.
- Cutts, S. (2017). *Happiness*. [motion picture]. England.
- Darder, A., Baltodano, M. P., & Torres, R. D. (Eds.). (2009). *The critical pedagogy reader* (2nd ed.). London: Routledge.
- Davis, L. (2010). *Alliances: Re/envisioning Indigenous-non-Indigenous relationships*. University of Toronto Press.
- de Sousa Santos, B. (2008). *Another knowledge is possible: Beyond northern epistemologies*. London: Verso.
- Dei, G. J. S. (2000). Rethinking the role of indigenous knowledges in the academy. *International Journal of Inclusive Education*, 4(2), 111–132.
- Dove, M. R. (2006). Indigenous people and environmental politics. *Annual Review of Anthropology*, 35, 191–208.
- Downing, R., & Kowal, E. (2011). A postcolonial analysis of Indigenous cultural awareness training for health workers. *Health Sociology Review*, 20(1), 5–15.
- Eisenstein, C. (2013). *The more beautiful world our hearts know is possible*. Berkeley, CA: North Atlantic Books.
- Flicker, S., O’Campo, P., Monchalin, R., Thistle, J., Worthington, C., Masching, R., Guta, A., Pooyak, S., Whitebird, W., & Thomas, C. (2015). Research done in “A Good Way”: The importance of indigenous elder involvement in HIV community-based research. *American Journal of Public Health*, 105(6), 1149–1154. <https://doi.org/10.2105/AJPH.2014.302522>.
- Gaztambide-Fernandez, R. A. (2012). Decolonization and the pedagogy of solidarity. *Decolonization: Indigeneity, Education & Society*, 1(1), 41–67.
- Getty, G. (2010). The journey between Western and Indigenous research paradigms. *Journal of Transcultural Nursing*, 21(1), 5–14.
- Greenwood, D. A. (2010). Nature, empire and paradox in environmental education. *Canadian Journal of Environmental Education*, 15, 9–24.
- Gruenewald, D. A. (2003). The best of both worlds: A critical pedagogy of place. *Educational Research*, 32(4), 3–12.
- Hancock, T., Spady, D. W., & Soskolne, C. L. (Eds.). (2015). *Global change and public health: Addressing the ecological determinants of health - the report in brief*. Ottawa, ON: Canadian Public Health Association https://www.cpha.ca/sites/default/files/assets/policy/edh-discussion_e.pdf.
- Hatcher, A., Bartlett, C., Marshall, A., & Marshall, M. (2009). Two-eyed seeing in the classroom environment: Concepts, approaches, and challenges. *Canadian Journal of Science, Mathematics and Technology Education*, 9(3), 141–153.

- Hathaway, M. (2016). Activating hope in the midst of crisis: Emotions, transformative learning, and “The Work That Reconnects”. *Journal of Transformative Education*, 1–19.
- Lange, E. A. (2004). Transformative and restorative learning: A vital dialectic for sustainable societies. *Adult Education Quarterly*, 54(2), 121–139.
- Larsen, K., & Gunnarsson-Ostling, U. (2009). Climate change scenarios and citizen-participation: Mitigation and adaptation perspectives in constructing sustainable futures. *Habitat International*, 33(3), 260–266.
- Lavallée, L. F. (2009). Practical application of an Indigenous research framework and two qualitative Indigenous research methods: Sharing circles and Anishnaabe symbol-based reflection. *International Journal of Qualitative Methods*, 8(1), 21–40.
- Ledwith, M. (2001). Community work as critical pedagogy: Re-envisioning Freire and Gramsci. *Community Development Journal*, 36(3), 171–182.
- Makoons Geniusz, W. (2009). *Our knowledge is not primitive: Decolonizing botanical Anishinaabe teachings* (1st ed.). Syracuse University Press.
- Martin, D. H. (2012). Two-eyed seeing: A framework for understanding Indigenous and non-Indigenous approaches to Indigenous health research. *Canadian Journal of Nursing Research*, 44(2), 20–42.
- Mashford-Pringle, A., & Stewart, S. L. (2019). Akiikaa (it is the land): Exploring land-based experiences with university students in Ontario. *Global Health Promotion*, 26(Suppl. 3), 64–72.
- Max, K. (2005). Anti-colonial research: Working as an ally with Aboriginal peoples. *Counterpoints*, 252, 79–94.
- McAlpine, C. A., Seabrook, L. M., Ryan, J. G., Feeney, B. J., Ripple, W. J., Ehrlich, A. H., et al. (2015). Transformational change: Creating a safe operating space for humanity. *Ecology and Society*, 20(1), 56.
- Mezirow, J., & Taylor, E. W. (Eds.). (2009). *Transformative learning in practice: Insights from community, workplace, and higher education*. John Wiley & Sons.
- Moore, J. (2005). Is higher education ready for transformative learning? A question explored in the study of sustainability. *Journal of Transformative Education*, 3(1), 76–91.
- Morgan, D. (2006). Focus groups and social interactions. In J. Gubrium, J. Holstein, A. Marvasti, & K. McKinney (Eds.), *The Sage handbook of interview research* (pp. 161–176). SAGE. <https://doi.org/10.4135/9781452218403.n11>
- MUACSN (n.d). Indigenous ally toolkit. Montreal Urban Aboriginal Community Strategy Network. Available online at <http://reseauumtlnetwork.com/resources/>.
- Norberg-Hodge, H. (2011). *The economics of happiness trailer* [motion picture]. Germany: Local Futures.
- O’Connell, C. (2017). Becoming an ally to indigenous people. In S. Voogd-Cochrane, M. Chhabra, M. A. Jones, & D. Spragg (Eds.), *Culturally responsive teaching and reflection in higher education: Promising practices from the cultural literacy curriculum project* (pp. 53–62). Routledge.
- O’Sullivan, E. (1999). *Transformative learning: Educational vision for the 21st century*. Toronto, ON: University of Toronto Press.
- O’Sullivan, E., & Taylor, M. (Eds.). (2004). *Learning toward an ecological consciousness: Selected transformative practices*. New York: Palgrave.
- Parkes, M. W., Poland, B., Allison, S., Cole, D. C., Culbert, I., Gislason, M. K. et al. (2020). Preparing for the future of public health: Ecological determinants of health and the call for an eco-social approach to public health education. *Canadian Journal of Public Health*, 111(1), 60–64.
- Poland, B. (2020). Coming back to our true nature: What is the inner work that supports transition? In K. Zywert & S. Quilley (Eds.), *Health in the Anthropocene: Living well on a finite planet* (pp. 385–405). University of Toronto Press.
- Poland, B., Parkes, M. W., Hancock, T., McKibbin, G., & Chircop, A. (2020). A changing role for public health in the Anthropocene: The contribution of scenario thinking for reimagining the future. In K. Zywert & S. Quilley (Eds.), *Health in the Anthropocene: Living well on a finite planet* (pp. 172–190). University of Toronto Press.
- Rand, M., Sheppard, A., Jamal, S., Kewayosh, A., & Mashford-Pringle, A. (2019). Evaluation of the Aboriginal relationship and cultural competency courses among a sample of Indigenous services Canada nurses. *International Journal of Indigenous Health*, 14(1). <https://doi.org/10.32799/ijih.v14i1.31967>.
- Redvers, N. (2018). The value of global indigenous knowledge in planetary health. *Challenges*, 9(30). <https://doi.org/10.3390/challe9020030>.
- Rist, S., & Dahdouh-Guebas, F. (2006). Ethnoscience: A step towards integration of scientific and indigenous forms of knowledge in the management of natural resources for the future. *Environment, Development and Sustainability*, 8, 467–493.
- Robinson, J., & Cole, R. J. (2015). Theoretical underpinnings of regenerative sustainability. *Building Research and Information*, 43(2), 133–143.
- Robinson, J., Burch, S., Talwar, S., O’Shea, M., & Walsh, M. (2011). Envisioning sustainability: Recent progress in the use of participatory backcasting approaches for sustainability research. *Technological Forecasting and Social Change*, 78, 756–768.
- Seyfang, G., & Haxeltine, A. (2012). Growing grassroots innovations: Exploring the role of community-based initiatives in governing sustainable energy transitions. *Environment & Planning C*, 30, 381–400.
- Shawanda, A. (2017). *An examination of the integration processes of Anishinaabe smudging ceremonies in Northeastern Ontario health care facilities* (Doctoral dissertation, Laurentian University of Sudbury).
- Simpson, L. (2008). *Lighting the eighth fire: The liberation, resurgence and protection of Indigenous nations*. Winnipeg, MN: Arbeiter Ring Publishing.
- Smith, L. T. (1999). *Decolonizing methodologies: Research and Indigenous peoples*. London: Zed Books.
- Snelgrove, C., Dhamoon, R. K., & Comtassell, J. (2014). Unsettling settler colonialism: The discourse and politics of settlers, and solidarity with Indigenous nations. *Decolonization: Indigeneity, Education & Society*, 3(2), 1–32.
- Sterling, S. (2010). Transformative learning and sustainability: Sketching the conceptual ground. *Learning and Teaching in Higher Education*, 5, 17–33.
- Tachine, A. R., Bird, E. Y., & Cabrera, N. L. (2016). Sharing circles: An Indigenous methodological approach for researching with groups of Indigenous peoples. *International Review of Qualitative Research*, 9(3), 277–295.
- Taylor, E. W., & Cranton, P. (Eds.). (2012). *The handbook of transformative learning: Theory, research, and practice*. San Francisco: John Wiley & Sons.
- Thomson, B. (2011). Pachakuti: Indigenous perspectives, buen vivir, suma qawsay and degrowth. *Development*, 54(4), 448–454.
- Tuck, E., & Yang, W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, Education & Society*, 1(1), 1–40.
- Walia, H. (2012). Decolonizing together: Moving beyond a politics of solidarity toward a practice of decolonization. *Briarpatch, jan/feb*, 27–30.
- Wall Kimmerer, R. (2013). *Braiding Sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants*. Milkweed Editions.
- Wallace, R. (2013). *Merging fires: Grassroots peacebuilding Between Indigenous and Non-Indigenous peoples*. Halifax, NS: Fernwood.
- Watson, J. (2019). *Lo-TEK Design by Radical Indigenism*. Italy: Taschen.
- Williams, L. (2013). Deepening ecological relationality through critical onto-epistemological inquiry: Where transformative learning meets sustainable science. *Journal of Transformative Education*, 11(2), 95–113.

- Williams, L., & Claxton, N. (2017). Recultivating intergenerational resilience: Possibilities for 'scaling DEEP' through disruptive pedagogies of decolonization and reconciliation. *Canadian Journal of Environmental Education*, 22, 58–79.
- Yassi, A., Lockhart, K., Gray, P., & Hancock, T. (2019). Is public health training in Canada meeting current needs? Defrosting the paradigm freeze to respond to the post-truth era. *Critical Public Health*, 29(1), 40–47.
- Zapata Campos, M. J., & Zapata, P. (2017). Infiltrating citizen-driven initiatives for sustainability. *Environmental Politics*, 26(6), 1055–1078.

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