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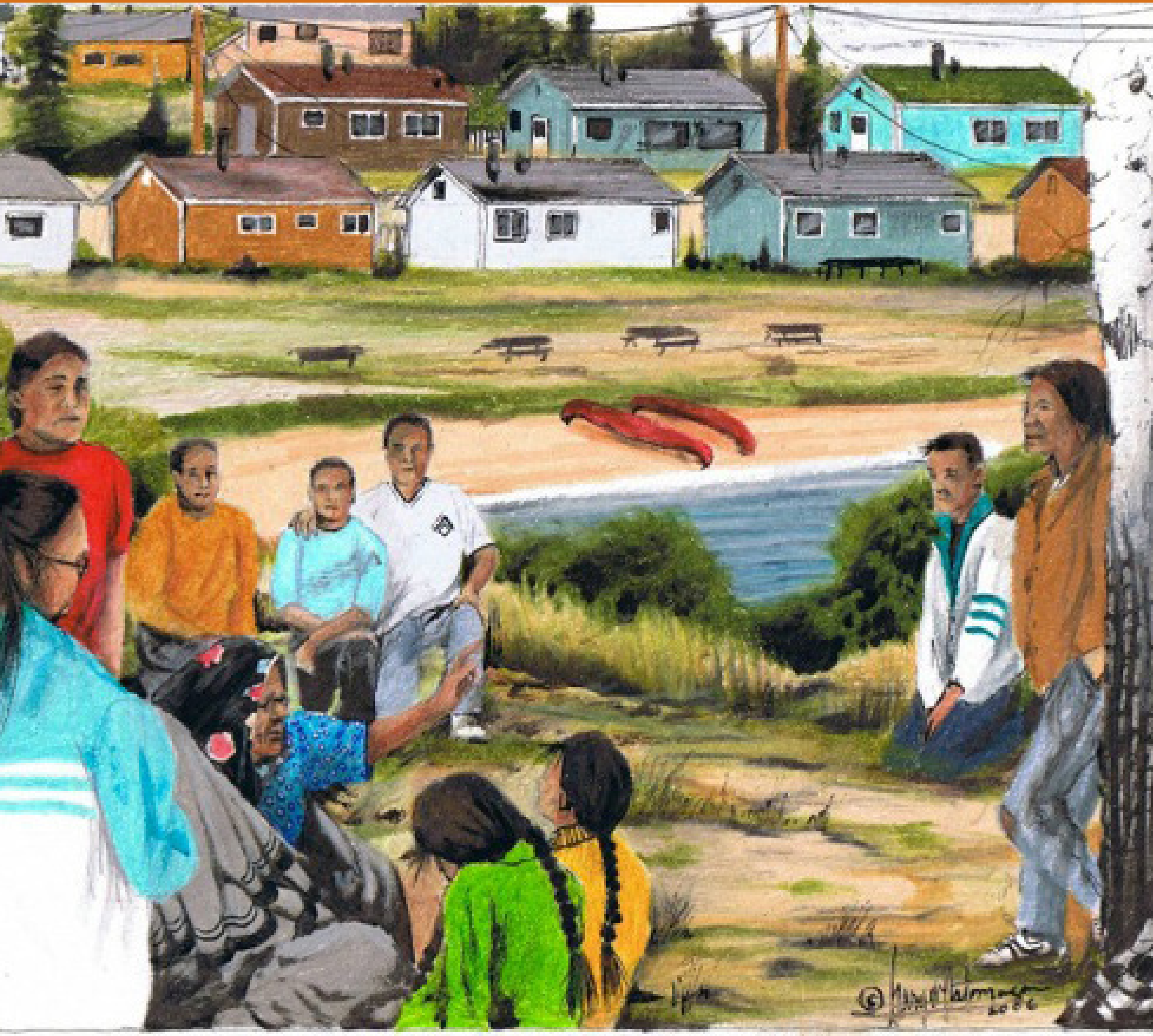

COMMUNITY ENGAGEMENT AND THE ANTHROPOLOGIES OF HEALTH AND WELLBEING

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Community Engagement and the Anthropologies of Health and Wellbeing

Volume 6, Issue 1, Spring 2020

Guest Editors: Sylvia Abonyi and Pamela Downe

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From the Guest Editors

Community Engagement and Health-Related Anthropology

Sylvia Abonyi and Pamela Downe

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This special issue on community engagement in anthropological health research for *The Engaged Scholar Journal* began in 2018. We developed and launched a call for papers addressing the ways anthropologists across all sub-fields of the discipline — archaeology, biological anthropology, cultural anthropology, and linguistics — engage with communities and peoples to attend to health-related questions and needs. At the time, the 2013 to 2016 Ebola pandemic in West Africa had subsided but was still drawing headlines as recovery efforts were ongoing. The outbreak of the Ebola virus disease had devastated communities and caused over 10,000 deaths (World Health Organization, 2016). Anthropologists made significant contributions to controlling the epidemic spread of the hemorrhagic virus. They worked to "build relationships, attend to cultural norms, give respect and deference to traditional leaders and informal social and political systems" (Abramowitz, 2017, p. 425). The term "anthropology" came to "serve as a semantic marker of solidarity with local populations, respect for customary practices and local sociopolitical realities, and an avowed belief in the capacities of local populations to lead localized epidemic and response efforts" (Abramowitz, 2017, p. 421).

Some two years later, we are now in the final stages of completing this issue and we find ourselves in a world dominated by a new threat to global health. SARS-Cov-2, also known as COVID-19, was first identified in December 2019. By June 30, 2020, there had been over 10 million cases, and more than 500,000 deaths reported across over 200 countries (Winfield & Moritsugu, 2020). Anthropologists are again working in partnership with communities of all kinds to stem the spread of the virus and to support those affected by it (e.g., Manderson & Levine, 2020; Sangaramoorthy & Benton, 2020). In doing so, anthropologists are building on, and advancing the approaches for successful, respectful, and trusting community engagement and participatory scholarship that has been foundational to our work for decades. Community effects of COVID-19 may be new to most, but anthropological approaches to understanding and mitigating these effects are familiar and extend backward in time to reveal — for example — lessons from the global influenza pandemic of 1918 that are newly and poignantly relevant (Gagnon et al., 2013; Herring, 2009).

Successful practices of community-engaged scholarship and applied anthropology directed to these major public health threats are well illustrated in the collection of articles and reports from the field that constitute this issue. All but one (Bowness et al.) include engagements with Indigenous communities and peoples around the world. The work of Jean Mitchell and colleagues in southern Vanuatu describes their engagement with community youth to explore the association of well-being with community gardens and local food cultivation. Their work reveals that intergenerational knowledge, social cohesion, and collective responses to non-communicable illnesses are all entangled with land tenure, gardening practices, and healthful food. The participatory approach to the study enables the locally important ontological orientation of *more-than-human world* to be centered, whilst also reminding readers that "community" must be locally defined. Glenn Stuart and Eryn Coward also address the topic of local plant cultivation and use but, as archaeologists, they examine this through a temporal lens. They maintain that archaeological understandings of plant use by Indigenous Peoples of the past, including the deep past, are improved through community-engaged scholarship with descendants of the ancestral Peoples. Trust, reciprocity, and mutual benefit are core values that underpin Stuart and Coward's paleoethnobotanical research on medicinal plant use in the northern Plains. Samantha Purchase bridges cultural anthropology and bioarchaeology through more recent sub-disciplinary convergences in practices of community engagement. Her paper echoes the importance of foregrounding local and descendant community voices in the study of past diseases. Drawing on her work with skeletal populations that range from middle Holocene Siberia through Anglo Saxon and post-Industrial Britain, Purchase argues that it is not enough to rely exclusively on osteological evidence of ancient diseases to interpret their impacts on ancient societies. That evidence, she explains, must be situated within the cultural contexts of past and present through work with descendant communities. Purchase persuasively advocates navigating this temporal terrain through respectful engagement with contemporary community leaders and knowledge keepers.

The examples of community engagements that Mitchell, Purchase, and Stuart and Coward discuss are further reflected in the kind of boundary work that Sarah Duignan and colleagues advance in their collaboration with the Grand River First Nation in Ontario, Canada. Duignan et al. offer crucial insights into local and regional water protection as health promotion. They argue that collaborative action research can and should entail a critical examination of the borders, boundaries, and barriers both enabling and constraining Indigenous Peoples' participation in research and health action. Boundary work (Robinson & Wallington, 2012; Fisher, 1988), is important for engaged research, as it locates sites of conceptual and processual congruency as well as identifies spaces for respectful debate. Savannah Ashton and Tracy Torchetti's report on the research that they undertook to enhance and improve cancer care among the Inuit illustrates the importance of successful boundary work. *Inuusinni Aqqusaaqtara* is a project undertaken in partnership with *Pauktuutit* Inuit Women of Canada and the Canadian Cancer Society to produce a suite of resources that are culturally appropriate and widely accessible. The emphasis in this report is on the importance of language in ensuring clinical accuracy and cultural safety. Ashton and Torchetti are breaking important ground in making a strong anthropological and linguistic contribution to cultural competency and safety protocols for health planning.

The article by James Waldram and the field report by Evan Bowness et al. return us to the importance of understanding health concerning land tenure, gardening, plant cultivation, and plant-based medicines. These papers, however, also introduce the role that visual representation using video plays in community engagement. Waldram's article describes a 15-year research partnership with Q'eqchi' Maya healers in southern Belize. Waldram explains that the ethnographic film that resulted from this long-standing project was led and directed by the healers for use as video advocacy for the traditions of Q'eqchi' medicine. Waldram ultimately argues that the "standard" for successful anthropological film making and documentation must be decolonized to appropriately foreground and to honour Indigenous ways of knowing. Evan Bowness and colleagues undertook a similar video project in a very different context: short term ethnography in Manitoba community gardens. Their project was part of a course on applied visual methods in community-based sociology and explored urban agriculture as a source of well-being in four communities across Manitoba's capital city and one in the rural Manitoba town of Clearwater. In this study, video data collection and production as knowledge translation are described as important to the success of engaged short-term ethnographic methodology. Videos were made at each research site capturing intensive field visits where participants and researchers connect and disconnect with each other in ways reminiscent of Duignan et al.'s boundary work, and served as a vehicle for reciprocity beyond the conclusion of the project.

Together, the contributions in this special issue emphasize the centering of local contemporary and descendent voices in defining past and present concepts of community and health, as well as identifying research priorities. The engagements that all the authors describe are grounded in respect, partnership, community leadership, and trust. The articles represent the kind of community-engaged scholarship and advocacy that is serving anthropologists well as they contribute now to understanding and alleviating the inequitable burdens of ill-health and disease amidst the COVID-19 pandemic. These articles also represent a commitment to community engagement that separates the anthropology of today from its colonial past. As many of the authors note, the history of Anthropology (and all its subfields) is one that involves colonial exploitation, ontological and epistemological hegemony, extractive methods, and dishonorable actions towards Indigenous Peoples around the globe. Conciliation and reconciliation efforts require that we acknowledge this past and work humbly in partnership with Indigenous Peoples to right it. The papers in this issue contribute to this large-scale work through their methodological, theoretical, and ethnographic insights.

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Issue Statistics

A. Authors and Submissions

Authors and Co-Authors	
University-based	13
Community partners	7
Total	**20**

Article Submissions	
Original proposals for peer and editor review	11
Articles submitted for editor review	2
Articles submitted for peer review	9
Peer-reviewed articles accepted for publication	5
Editor-reviewed articles accepted for publication	2
Book reviews submitted for editor review	2
Book reviews accepted for publication	2

Geographic Distribution (Corresponding Authors Only)	
Atlantic Canada	
University of Prince Edward Island	1

Eastern Canada	
McMaster University	1
Non-University	1
Western Canada	
University of British Columbia	2
University of Saskatchewan	4
Total	**9**

B. Peer-Reviewers and Peer-Reviewing

Peer Reviewers	
Total invitations to peer review	16
Number of peer reviewers who accepted invitations	10

Geographic Distribution	
Eastern Canada	
Brock University	1
University of Toronto Scarborough	1
Western Canada	
University of British Columbia	1
University of Saskatchewan	4
University of Victoria	1
Non-University Based	2

Essays

Cultivating Wellbeing:
Young People and Food Gardens on Tanna, Vanuatu

Jean Mitchell, Lesbeth Niefeu and Joan Niras

Abstract Gardens in Vanuatu, an archipelago in the SW Pacific, materialize the multiple relationships between land, humans, and the more-than-human world that facilitate self-reliance, and wellbeing. This paper analyzes a collaborative project (2016-18) undertaken on the Island of Tanna in Vanuatu. A project for and with youth and their communities, it aimed to train young people to do basic research on customary food gardens and to document Indigenous customary knowledge, practices, and customary stories about food and gardens. The project started after a catastrophic cyclone destroyed gardens and infrastructure, rendering the self-sufficient islanders dependent on food aid at a time of rising rates of non-communicable diseases (NCDs). There is also concern about the declining interest in traditional knowledge among youth. With about 60% of the population under 30 years of age, this paper argues that youth are critical actors in ensuring the continuity of customary knowledge and practices that are essential for food sovereignty, the maintenance of social relations and wellbeing, all of which are embedded in relational ecologies of care.

KeyWords Vanuatu; Tanna; youth; traditional knowledge; gardening; food; wellbeing; relationality; care

> "If we don't have a garden how will we live?
> Who are we? We are able to live because we have gardens."
>
> Lesbeth Niefeu

> Ba kisasim, mi sangnien tukun.
> *Yumi wokem karen, yumi glad.*
> We are making a garden, we are glad.

Gardens matter in Vanuatu. Most people in Vanuatu still live in villages on clan-held land that entitles them to grow their food. Root crop staples such as yam and taro and a host of other vegetables are grown in numerous gardens through swidden or shifting horticulture. While such food production in gardens is often rendered as mere subsistence or allocated to the non-formal economy, it provides nutrition and livelihood for over 70% of the population.

Its importance is increasingly recognized as central to the customary economy of Vanuatu. Gardens are also the basis of the gift exchanges that create and sustain social relations. Vanuatu, a y-shaped archipelago in the southwest Pacific with a population of 290,000 and more than a hundred languages, is characterized by an extraordinary cultural and linguistic diversity. Custom or *kastom* in *Bislama*, the lingua franca, refers to the hybrid set of discourses and practices that encompass the knowledge, economy, and sociality that are unique to ni-Vanuatu.[1]

This essay draws on a collaborative research project entitled "Ecologies of Care, Youth and the Cultivation of Well-being," undertaken between 2016-18 on the island of Tanna with the late Chief Jacob Kapere, Director of the Cultural Centre in southern Vanuatu. A project for and with young people and their communities, we worked together with young people to do basic research on food gardens and to document Indigenous customary practices related to gardens. The idea for this project sprang from several contemporary issues: the 2015 catastrophic category five cyclone that destroyed all gardens in Tanna creating dependency on international food aid for months; the effects of climate change evident in food gardens; the expansion of the seasonal migrant agricultural labour program which draws gardeners to the neighbouring countries of New Zealand and Australia (Craven 2015) and the rapid rise of non-communicable diseases (NCDs) as a leading cause of morbidity and mortality in Vanuatu. There are also pervasive concerns about meeting the demands of a growing population, shortage of land in some areas and the fear of declining interest in traditional knowledge among youth.

By engaging young people in the ecology of food gardens, the project aimed to spark their interest in their island's unique land tenure system and in the intricate knowledge of gardening that has accumulated over many generations. Focusing on gardens and identifying young people as key social actors, we wanted to understand youth perspectives on customary gardening and what wellbeing meant to them. The research was conducted by young people in their own or nearby villages, most often with a small team of young researchers from other areas of the island. This created a stimulating context for discussion among the young researchers and community members. I researched with young people over seven months while living in two very different villages in West and Southwest Tanna. Lesbet Niefeu and Joan Niras were two of the young researchers who became deeply interested in the research project and the video documentation of customary (*kastomary)* gardening practices. Lesbeth left school in class seven due to family reasons while Joan is now in university studying social science and plans to continue doing research in the future. Lesbeth continues to document customary practices.

Central to life and customary practices in Tanna is the land tenure system and the social

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[1] It is important to note that the practices of *kastom* (custom) in Vanuatu are variable and not always equitable in terms of land entitlements as Margaret. Rodman (Critchlow) (1987) has shown in Ambae. Siobhan McDonnell charts the increasing disparities and the concentration of wealth derived from illegal land transactions in Efate. Anna Naupa has analyzed (2017) the need to recognize women's entitlement and rights to land in Vanuatu. A number of young people in our research in Tanna cited the shortage of land as key reason for their lack of involvement in gardening.

relationships that are contingent on its clan ownership. According to Joel Simo (2005), a customary land advocate, “land is the web of life that holds together custom, culture, history, and beliefs of each person in a community” (p. 1). Joel Bonnemaison (1984), who studied customary practices in Tanna, underlined the material and spiritual centrality of land which informs a particular vision of the world. The customary land tenure in Vanuatu offers entitlements for food production absent in many places. This land tenure system and the garden ecologies and economies that it facilitates have had a strong capacity to buffer ni-Vanuatu from colonialism and the vagaries of global capitalism. Vanuatu, formerly New Hebrides, had been jointly administered by French and English officials from 1906 until independence in 1980. At that time, the land alienated for plantations was returned to customary clan owners. Customary practices have persisted in Tanna despite more than two hundred years of “compelling historical events” (Lindstrom, 2011, p. 153).

Over the past two decades, non-communicable diseases have emerged as a global health issue linked to food and “life-style” (Montesi, 2017, p. 99). The rapid rise of NCDs in the Pacific Islands has drawn attention to food production and the impact of food imports on health. There is now a pressing need to better understand and appreciate small-scale rural food producers and how they contribute to health and wellbeing through the local production and consumption of food. In the Pacific context, Plahe et al. (2013) argue that the fundamental principles of food sovereignty are embedded in food-growing practices that privilege access to land and care for the community, land, and water (p. 320). Communities engaged in such local or “subsistence” production continue to be food secure in many parts of the Pacific (p. 321). Scholars and policymakers are now compelled to consider health and nutrition in a broader context connecting those issues to access to food, land, and social justice. In their re-examination of diet in *Doing Nutrition Differently*, Allison and Jessica Hayes-Conroy (2013) argue: “It matters whether foods are derived from just social and environmental relationships or not; it matters what kinds of historical, cultural and emotional linkages food have” (p. 8). The authors believe these issues are at “the heart of food-body relationships” (Hayes-Conroy & Hayes-Conroy, 2013). Jacob Kapere was a strong advocate for these relationships. He also promoted customary knowledge and practices that he was engaged in documenting through film and video throughout his lifetime. Genuinely interested in food gardens, he was instrumental in organizing the Regional Melanesian Slow Food Festival in Tanna in 2016. He also conducted community workshops on slow food in Tanna before his untimely and sudden death in June 2017. Jacob frequently stated, “When you change your food, you change who you are.” He was pointing to how the embodied knowledge and the practices of food growing on customary land are integral to the production of particular kinds of persons who have specific relationships to the human and the more-than-human worlds. Lesbeth Niefeu’s queries cited above also point to the centrality of these relations materialized through food gardens.

By focusing on how food is grown, consumed, and exchanged, we draw attention to the generation of wellbeing located within relational realms rather than in individual bodies. In a critical review, Mahali et al. (2018) argue that approaches to wellbeing in the global South are often framed by normative assumptions and conceptual methods from the industrialized global North. Our project shows how wellbeing is rooted in relationships to land and human and more-than-human relations. In so doing, it resonates with research in Indigenous communities elsewhere, such as Zoe Todd's work in Paulatuuq in the Canadian Artic (2011; 2014) and Adelson's work in a Cree community (1998) and in the global South (Langwick, 2018). Emily Yates-Doerr's articulation of health as a "practice of living" (2015, p. 171), which she developed during her research on obesity and hunger in Guatemala, is useful for framing our research findings. Yates-Doerr raises several simple but powerful questions that draw attention to what food "does" in everyday life: How is it used? What relations does it bring about? By tracking these questions, we explore how health and wellbeing materialize through customary gardens on the Island of Tanna. Before doing so, we shall first describe our project, locating it within the contexts of engaged scholarship and Tanna.

Engaged Anthropology and the Ecologies of Care Project

While anthropologists have often privileged engaged scholarship in various ways and in a "myriad of contexts," there is currently a renewed interest in engaged scholarship (Low and Merry, 2010; Mullins, 2011; Rylko-Bauer et al., 2006). Sherry Ortner (2019) has recently commented that many sociocultural anthropologists have now taken what might be called the "engaged turn," that is, "the decision to formulate research projects in such a way as to critically engage with important issues of our time" (p. 1). Kyriakides et al. (2017) connect this "engaged turn" to the experience of working in ethnographic field sites that "display a political volatility and precarity that anthropologists must increasingly grapple with" (p. 4). This is the case in the South Pacific islands and in many other regions of the world that are experiencing the "slow violence of climate change" (Nixon, 2011, p. 2). Political and economic changes are also adversely affecting access to land and food. In engaged anthropological research, the biases "are declared up front" (Ortner, 2019, p. 1). Medical Anthropologist Merrill Singer has emphasized that engaged anthropology means attending to relations of power and social justice (2010). Setha Low and Sally Merry (2010) agree with Singer, but note the possibility that universalizing discourses can undermine the specificity and diversity essential to engaged anthropological research. Low and Merry raise the critical point that engaged anthropology requires rethinking of methods and modes of writing. A key question is: "How can anthropology be engaged without replicating its colonial past?" (2010, p. 203). Such issues are essential for engaged scholarship in postcolonial sites such as Vanuatu. Catherine Besteman's summary of engaged anthropology as "collaborative, critical, reflexive and practical… and values driven" (2013, pp. 3-4) usefully identifies some of the key elements that help to "operationalize" and begin to evaluate efforts to engage with communities using decolonizing methods.

The value of engaged research is evident in Vanuatu where the issue of land is politically charged. While the customary clan control of land was ensured at independence in the 1980 constitution, land has been signed away in long leases over the past 15 years. Anthropologist Siobhan McDonnell (2017) has engaged in research in Vanuatu that documents "a dramatic land grab" (p. 285) which means that 10 percent of all customary land is now leased.[2] Ralph Regenvanu (2017), the official opposition leader in Vanuatu, who started the Land and Justice Party argues that retaining adequate land access is "a major social justice issue" (p. xiv). Access to land is now a major issue in many parts of the world as the "global land rush has drawn new attention to land, its uses and value" (Li, 2014, p. 499). Such land transactions are related to the integration of places like Vanuatu into the global economy now shaped by neo-liberalism (Plahe et al., 2013). However, McDonnell (2017) points out that the political elites of Melanesia are pivotal to inequitable land transformation. Ni-Vanuatu and, more generally, Melanesians are now caught between two very different worldviews, "the idea of land as property and the concept of land as life, which is central to *kastom*" (Regenvanu, 2017, xiv).

My involvement in engaged scholarship began in the mid-1990s while doing my doctoral research in a rapidly growing and under-serviced urban settlement in Port Vila, the capital of Vanuatu. I was struck by the large number of young people living in settlements who felt marginalized in both the worlds of work and custom. While young people now comprise the largest segment of the population, they often do not have a voice (Mitchell, 2011). To address the issues related to urban youth, I worked with the Vanuatu Cultural Centre to start a collaborative project (*Vanuatu Young People's Project*) with young people living in urban settlements to undertake research, advocacy, and action with and for young people across the capital. The project culminated in more than a dozen years of programming and support with and for youth. The extensive research flagged issues such as police violence, young people's feeling of estrangement after being forced out of school due to a shortage of school fees, and their desire to know about customary practices. The project addressed some of the practical needs identified by young people for further training for work and provided opportunities to learn about customary knowledge. It was a pivotal project that drew local and national attention to the situation of young people in urban settlements and opened up possibilities for many of the young researchers who went on to work in research, advocacy, and programming in various government and NGO organizations. Sherry Ortner (2019) has argued that engaged anthropology "always involves attempts to create new opportunities, new possibilities, new programs that will make some kind of contribution to the lives and futures" (p. 6) for those people with whom anthropologists work. This is often a complex undertaking, and power imbalances must always be recognized.

The Ecologies of Care Project began with a group of rural youth, to learn more about customary gardens and the perspectives of young people on Tanna — where customary knowledge is vibrant and essential. We also wanted to build the research skills and capacity for action and advocacy among a group of young people who would then have opportunities to work on future projects with Jacob Kapere at the Cultural Centre. We started the project with a week-long workshop held in July 2016 with 18 young people representing ten different villages from five different areas of Tanna. The young people who came were interested in acquiring

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[2] On the Island of Efate 56.5 per cent of customary land along the coast has been leased reducing islanders' access to land for gardens and to the sea for fishing (McDonnell, 2017, p. 285).

new skills, meeting new people, and telling their own stories about gardens and their lives. We offered basic training on qualitative research methods such as participant observation, mapping, designing research questionnaires, digital storytelling, and video documentation. The young participants, through a series of animated discussions, formulated the research questions that informed the project through an interactive process that sparked lively conversations about gardens, customs, and gender, generational, and ecological differences. They decided that the following research areas were vital: the detailed knowledge and practices of gardening, documenting custom stories and the experiences of the 2015 cyclone, and the perspectives of youth on gardening and the social, economic, and environmental changes underway in Tanna. The research project also obtained information on the relationship between gardens, food, and wellbeing. The research project included extensive structured and semi-structured interviews developed in tandem with the young researchers that featured open-ended questions enabling youth to have detailed conversations with gardeners and elders. The project generated data from over 40 villages of various sizes, some of which were very small while others were large. The research focused on gathering detailed information from each person interviewed.[3] The material collected included 335 extensive and open-ended structured interviews along with documentation of gardens, customary stories, and ceremonies.

Diversity: Villages, youth, and gardens

Engaging youth in the ecological and customary knowledge connected to gardening necessitated understanding smallholder production of food gardens and the specific opportunities and constraints that they face. Attending to the specificity and diversity of local knowledge was an essential part of this engaged research project. While Tanna is a relatively small island of 549 square kilometers, it has varied ecological niches that shape gardening practices. There is Yasur, the active volcano with a commanding presence in the Whitesands area. At the same time, Mount Tukuwasmena in the Southwest of Tanna favours that area with rain in contrast to West Tanna, which experiences drought resulting in lower garden yields. This makes large-scale customary exchanges more challenging to stage in the West than in the Southwest, where there are food surpluses. Understanding local context is critical even in a seemingly "small island." During the project, we visited and stayed in many different villages and these experiences offered insight into how ecological, social, economic, and historical factors shape gardening practices. Factors such as proximity to the Yasur volcano (which showers ash over gardens in the nearby villages), rainfall, population, access to roads, the influence of churches, and the colonial past all converge to create differences in contemporary gardening and exchange practices.

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[3] Some of the questions included in our research: the number of gardens each person had including new and old gardens; the different kinds of food plants and the varieties of the plants grown; the division of labour; fallow periods; knowledge sharing and transmission; how garden produce is used; customary practices associated with each phase of gardening; the problems and advantages related to gardening in each person's village, as well as questions about food, health and wellbeing. Information about youth and the 2015 cyclone was also collected.

Based on research in Nepal, Stacy Leigh Pigg (1992) argues that in the contexts of national and international development “the village crystalizes into a distinct category” (p. 491) and “the essence of villages” becomes “distilled from diverse villages” (p. 507). Within the universalizing framework of development, the village comes to stand for “the locus of under development” and “a space of backwardness” (p. 507). It is, then, not surprising that for many young people, the village becomes that which “imprisons people in what is considered an inferior and outmoded way of life” (Pigg, 1992, p. 507). Youth, too, are often essentialized as “a distinct category” distilled from a multiplicity. However, young people in Tanna are by no means a homogenous group. Several of the main differences among youth evident in this project were gender, geography, and access to education.

Regarding education, Narau, a young man from the Southwest of Tanna explained: “Those who don’t go on in school, go to work in the garden.” Access to higher education spatially and temporally separates young people into different domains. Evermore significant numbers of young people attend school, where the instrumental logic of Western education and markets often undermine the value of Indigenous knowledge practices. In postcolonial Vanuatu, access to education and wage labour has been the basis of emergent class differences (Lindstrom, 2011). During our project, we learned that many of the young school-leavers who were interviewed felt alienated, as they expected to work in the wage sector upon completion of their education but only about one-third of all school-leavers find wage work in Vanuatu. It was often hard for them to return to the village after having been away at school.

This project was rural-based. However, we found that youth are highly mobile, moving between and within places, including towns and villages, and transiting into new spaces of adulthood such as marriage and parenthood. Throughout this project, some of the young people were married, became parents, found employment, undertook humanitarian work on a northern island, started a successful business, and migrated to the capital to assist relatives, while others returned to school. As we worked in villages some young people, such as Lesbeth and Samuel, asked to join the project. We had a core group of nine young people who stayed for the duration of the project.

There are systemic reasons (such as the shortage of land and the need for wage work in Tanna) contributing to the disinterest in food production among youth, now common in many parts of the world (Montesi, 2017). When we talked to young people in Tanna, they conveyed the complexity of their particular situations and aspirations, giving a fuller picture of what is often elided in the term ‘youth disinterest.’ At the same time, the loss of intergenerational knowledge related to food production has serious consequences. In Vanuatu and in other areas of Oceania, environmental risks experienced over centuries, have led to the development of deep knowledge of bio-diverse and sustainable food gardening among local populations. These smallholder garden systems are diverse, complex, and resilient as inputs are supplied within the system without reliance on chemical fertilizers, pesticides, or herbicides. Such traditional gardens are highly efficient and designed to minimize risk (Kaoh et al., 2014). These features are crucial as erratic weather, cyclones, and climate change adversely affect food gardens.

Intergenerational knowledge

The loss of intergenerational knowledge has been identified as problematic by many experts concerned with food production in Vanuatu and the Pacific. They have argued that while the food production system has been robust in dealing with rapid population growth, increasing production of traditional staple crops and cropping systems will be critical for the future. Koah et al. (2014) have noted that the challenge to intensify traditional food systems is more difficult when young generations are disinterested in the traditional knowledge accumulated by Elders. This project provided opportunities through research and documentation for young people to engage with senior and experienced gardeners to learn more about customary gardening practices. Many of the young researchers, for example, were unfamiliar with the full range of varieties of yam and taro and other garden plants that play an essential role in bio-diversity, an issue raised by many of the experienced gardeners. The young researchers were able to learn the names of the diverse varieties, including Indigenous, imported, and hybrid varieties grown in gardens in different areas. Stacey Ann Langwick (2018), in her study of therapeutic gardens in Tanzania, foregrounds the importance of the garden as a site of anthropological inquiry: "Gardens explicitly intervene into relationships between plants and people-remaking them in ways that unsettle assemblages built through colonial plantations, national development, and extractive capital" (p. 417). Langwick further argues that gardens throughout the global South, are now drawing on "local knowledge of how to support the flourishing of plants and people together with ecological and health movements" (p. 417).

Participating in the Ecologies of Care Project and spending time with many different gardeners influenced the young researchers in important ways. Lesbeth Niefeu explains her own experience:

> Before this project I sometimes made a garden, but I didn't think much about it. I'd plant a garden one year but then the next year I wouldn't bother. When I came to this project, I saw that the garden is very important. It is our life. If you just walk around doing nothing – you are not alive.

Yaris, a young woman who grew up in town, returned to her village in Tanna when she married. While she gardened in the urban settlement where she lived in Port Vila, before joining the project, Yaris knew little about ancestral stories and the relational customary practices attached to gardening, which included ancestors, spirits, and the agencies of plants. Similarly, Jako from West Tanna, a hardworking young single mother, was also unaware of the customary knowledge attached to gardening. Samuel, who grew up in the administrative center of Tanna, was surprised by the many different kinds of yam and taro grown in gardens we visited. He also videotaped the large-scale exchange ceremonies associated with the circumcision of 30 young boys in Southwest Tanna and was again impressed by the complex customary gift exchanges.

What Gardens Do: Foregrounding Relational Practices

Wellbeing is at the intersection of humans and their environments that provide not only food, but also shelter and medicine. In Vanuatu, traditional or "leaf" medicine is derived from a variety of plants in the forest and the "bush." These plants are still regarded as essential for the care of bodies, the protection of people, and for fostering relations between people and plants. Plants, Langwick (2018) succinctly writes, are both "remedy and relation" (p. 434). This is the case in Vanuatu. In Tanna, respect is foundational to the customary practices attached to gardens that entail a myriad of relations between humans, non-humans, and spirits. Human effort is essential for gardens, and as many elders have reminded the young researchers, gardens do not grow well without humans attending to and respecting the plants, land, and ancestors.

Respect manifests in multiple ways. In Tanna, respect is accorded to the *tupunis* or customary stones that facilitate the vitality of the gardens. The cultivation of the highly valued yam and taro is informed by rules that promote growth in new yam and taro gardens, and these create mutuality between plants and humans. By joining the research project, Joan Niras recognized that the new yam gardens are marked off as "sacred and special places." Through the research process in various villages, the young researchers heard the importance of rules governing new yam gardens. Several of these include: If you eat meat, fish, or shellfish, you must avoid the garden until you have showered: If you eat turtles you must avoid the new gardens for a full day, and if you are angry you should not go to the garden as such human emotions can adversely affect the growth of yam. Such rules acknowledge the sentience of plants and other non-humans and the complex relationships between humans and gardens. They also show that respect is integral to cultivating not only gardens, but making particular kinds of persons and social relations. Raymond, who follows customary practices explained: "If you respect the land, the garden, and the spirits, then you will be the kind of person who respects others." Customary knowledge of gardens encompasses relationships between humans and the more-than-human worlds such as the spirits of plants and ancestors. While adherence to customary gardening practices varied in our research, there continues to be a deep respect for rituals attached to both the planting and harvesting of new yam and taro gardens. People only plant their new gardens in unison after the custom specialist or "taboo man" performs a customary secret ritual to promote the growth of gardens. Similarly, rituals are performed at the harvest of the first yam and taro before anyone else in the area harvests and eats yam or taro. Respect for these rituals informs the collective ethos based on reciprocity and care.

The value of these relational practices was evident during the catastrophic cyclone of 2015 when gardens across the Island were destroyed, and the landscape was transformed with leafless and uprooted trees. Entire villages were flattened. Most people lost their houses and gardens, and many also lost animals and all possessions, including gardening tools. People across the Island worked together clearing trees, debris, and dead animals from each village and the roads. With gardens destroyed and food aid arriving late, people, as Joan Niras explained, "experienced hunger in Tanna for the first time in living memory." The islanders pooled and shared their meager cache of food salvaged from damaged gardens. Many relied on their customary knowledge to find and share edible wild foods to survive. The resilience of gardeners was evident when immediately after the cyclone, they planted gardens so they could have local food as quickly as possible. When the Ecologies of Care project started in 2016, people were still preoccupied with dealing with the aftermath of the cyclone. Young people and their families described the fear induced by the violence of the cyclone, as they remembered the destruction, the stench of dead animals and birds, and the cries of injured animals and birds left in the wake of the terrifying wind. Despite the ferocity of the cyclone, there were only three human deaths during and immediately after the cyclone.[4]

What Gardens Do: Fostering Multiple Relations

The research confirmed the centrality of the gardens in everyday life and revealed the depth of the knowledge that male and female Elders possessed. The interviews offered insight into the lives of many people who are passionate about their gardens. Food gardens have multiple uses in Tanna that may be summarized in three overlapping categories: food, custom exchanges, and income. We found that food from gardens in Tanna is used to feed extended families and people who do not have enough food due to illness or old age. Food is also sent to extended family in the capital, as Petrou and Connell (2017) have shown in a detailed study of food remittances from the island of Paama. Many Tannese earn money by selling vegetables and other plants such as kava, and the funds are used for paying school fees and different basic needs. The multiple benefits from the garden have allowed Tannese to be self-sufficient while remaining connected. Heather Paxson (2013) has developed the concept of *economies of sentiment* to convey how market and non-market relations are entangled. She argues, "market rationality is one organizing principle of economic activity but not the only one" (p. 20). Medical Anthropologist Elizabeth Roberts (2015), who analyzes food and health in Mexico, draws attention to another organizing principle: the importance of care, by which she means "an affect of tenderness, empathy, compassion and respect" (p. 154). Roberts (2015) argues, "care is another way of operating in the world" (p. 154). The practices of care outlined by Roberts are integral to the relationality at the heart of wellbeing in Tanna.

The concept of relationality has been captured by Moreton-Robinson (2000), who writes, "in Indigenous cultural domains relationality means that one experiences the self as part of others and that others are part of the self: this is learnt through reciprocity, obligation, shared experiences, coexistence, co-operation and social memories" (p. 16). In Tanna, many of these processes are embedded in gardening, where ancestors from the past and the relations-to-be forged in future exchanges are present. The emphasis on growing and sharing food in the everyday and in the ritual exchanges of privileged foods, such as yam and taro, speak to a relational worldview. Based on reciprocity, these customary ceremonies mark every critical phase of life from birth to death and take place within the network of kin relations. All of the young researchers had taken part in such customary ceremonies, as did everyone interviewed. In addition to the life cycle customary ceremonies, there are two major customary gift exchanges

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[4] Another category five cyclone hit northern islands in Vanuatu in April 2020, creating massive destruction. Cyclone Harold is the second category five cyclone within five years in Vanuatu and suggests the intensifying effects of global warming.

in Tanna: the *Toka* and the *Niel*, which are performed periodically in some areas but quite regularly in the South and Southwest region of Tanna. The research project underlined how essential these gift economies were in defining and informing Tannese social relationships and how they depend on and are facilitated by plants from gardens. In Tanna these exchanges forge, maintain, and restore their social relations (Lindstrom, 2011). Access to land for food gardens allows relational sociality to flourish. During the project, we had the opportunity to learn about the large-scale *Niel* held in 2017 on the dancing grounds of Yarukuenwi village in Southwest Tanna. This multi-village customary exchange was one of the largest of its kind held in many years. In this exchange, islanders from six upland villages sculpted more than 50,000 taro into a large ship as part of an exchange with six coastal villages of Tanna. Drawing thousands of people, the *Niel* exchange was designed to draw attention to food-sharing and the centrality of gift economies in the lives of Islanders despite the rapid socio-economic changes underway. Many of the young people from other areas of Tanna in our project had not participated in a *Niel* gift exchange. Learning about it was valuable to all of us. The Chiefs explained that the *Niel* is rooted in myth that privileges protecting land and feeding allies who are usually affines. This exchange, we were told, reminds people that everyone can make gardens, grow food, and share it. We humans may be different in some ways, but we all have the capacity to create relations.

What Gardens Do: Generating Health and Well-being

People, as noted, care not only about gardens being productive, but about the plants, the land, ancestors, and future generations. Bonnemaison (1984) has framed the relationship as follows, "The clan *is* its land, just as the land *is* its ancestors" (p. 1). The gardeners cared for their gardens and paid attention to the relationships among plants and between plants and humans that make the garden and the gardener flourish. People derived pleasure from their gardens and embraced the aesthetics of vitality that they experienced in their gardens. Plants cultivate wellbeing or as Langwick (2018) frames it, "Plants collaborate with people to make vital spaces that enable healing" (p. 434). In Tanna many people spent long hours gardening through necessity, but they also reported that they "liked to visit their garden to see it grow" for it generated feelings of happiness. Nouka, a 51 year old father of five children, explained, "My life is the garden, and the garden takes away all of my worries."

In discussions about nutrition and health, the consumption of food is often privileged over its production (Montesi, 2017). However, Allison Hayes-Conroy and Jessica Hayes-Conroy (2013) argue "that understanding the process by which a body is nourished," necessitates understanding of "the complex ways in which people, foods, lands and places come together" (pp. 2-3). This intersection of people, foods, lands, and places in Vanuatu is expressed by the *Bislama* term *manples* or *womanples* (man of the place or woman of the place). Sanabria and Yates-Doerr (2015) also extend "nourishment beyond what is eaten" arguing that it entails "care for socially, economically and ecologically viable food systems and sustainable diets" (p. 119). As scholars now locate food in the broader context of its cultivation, distribution, and consumption, it is essential to point out that Indigenous peoples such as the Tannese have long understood and operated within this wider context. In Tanna, wellbeing is constituted through associations dependent on access to communally owned land, growing and sharing food, and the large-scale reciprocal exchanges that nourish bodies and relationships.

What Gardens Do: Enacting Bodies

Anne Marie Mol and John Law frame embodiment and the enactment of bodies in ways that resonate with our work in Tanna. They explain, "We all *have* and *are* a body…As part of our daily practices, *we also do (our) bodies*. In practice, we enact them" (Mol and Law, 2004, p. 45). In the Tanna bodies are enacted in some important ways through gardening and ingesting local food. Tamara, a 23 year old woman with three children, explained, "When I make a garden I eat food that I planted. It gives me power. I, then, have power to work in the garden." Alphine, a 24 year old woman with three children, remarked that food from her garden gives her "power and strength." Sila, a 17 year old young man, told us, "Local food makes me alive, with power and blood."

Margaret Jolly (1991), in her research in South Pentecost, Vanuatu, found that customary gardeners depicted imported foods such as rice and tinned food as "weak and soft" (p. 58), in contrast to taro and yam which are "strong" foods creating strong bodies because they are rooted in and part of the land. "The human body, the products locally produced by human effort, and the land itself are conceived as intrinsically and substantially connected" (Jolly, 1991, p. 48). Throughout our project we heard that growing, eating and sharing food from one's land is deemed essential for good health and wellbeing. Linda, a 21 year old mother, explained, "people are eating too much imported food like rice, sugar, and oil…they are not working too much in the garden, they are only sitting down which makes them sick." In another village, Berto, who is a 62 year old father of seven children, told us the new sickness is from overeating food from the store. He goes on to say that the new NCDs are appearing because people "don't sweat or work hard in the garden." Through gardening, the body and its sweat produces the food that staves off sickness and promotes health. At the same time, when people garden, they maintain social relations enacted through reciprocal food exchanges. Nancy Pollock (2017), who has extensively researched and written about food in Oceania, has also noted that store-bought food is not shared in the same way as garden food**.** Gardening and sharing food is part of a broader moral economy (Petrou and Connell 2017), and, as Langwick (2018) contends, the vitality of gardening locates "the body into alternative economies of people and plants" (p. 421).

Many of the people interviewed believed that the emergence of NCDs revolves around the consumption or overconsumption of imported or "white man's" food. Leo, a 30 year old father of four, explains, "we are not following the ways of our ancestors and eating as our ancestors did." When asked about health and wellbeing, Fina Sam, who has eight children, responded, "Food from the store is killing me, but I am well when I eat food from the ground, it makes me fit." Rosline, a young gardener, also clearly stated her views: "I think that people eat too much from the store, which makes them have high blood pressure and diabetes."

People often characterized store-bought food as "dead," in contrast to the vitality of garden food equated with life. “The garden is life” was a refrain we heard very often as people described the “aliveness” of their garden food. Jira, who is 70 years old, explained, “When I eat Island food, I feel strong because it is live food.” Frozen, tinned, and processed foods are examples of “dead” food that cannot be genuinely nourishing. Nouka felt that NCDs are a problem “because we no longer are eating local food, we depend too much on buying from the store and that food is made with chemicals.” Store-bought food was described as having sickness embedded in it, in contrast to local garden food.

Those interviewed frequently pointed out that eating food from one’s garden led to a feeling of fullness. This is expressed by 19 year old Darie Joe, who explains that when you have gardens, “the feeling is that you are rich because in the village the garden is the key to everything.” There is reciprocity between a gardener and her garden as it “supplies everything.” As Banya remarked, “When I make a garden, the garden feeds me and helps my family.” This is echoed by Rose, who explained, “I like island food because it makes me strong and healthy. I have no money, but I always have food from my garden.” However, you must take care of a garden if it is to take care of you. As Fina stated, “I think when you are lazy or not active, you worry, but when you make a garden, you don’t worry because you have everything.”

People were explicit about the value and “power” of garden food in contrast to store-bought food. However, rice and bread are part of urban and, to a lesser extent, rural diets. Tannese Islanders have long been engaged in some measure in the “modern” economy through migrant labour in the colonial and postcolonial eras. Jourdan (2012) analyzed the “localization” of rice in the Solomon Islands, paralleling the situation in Vanuatu. The introduction of rice was tied to both the colonial and mission past, as rations of rice were given to labourers on plantations and students at mission schools (pp. 262-4). While rice at one time indexed colonial and mission projects, it now plays a part in local foodways, particularly in urban areas (Jourdan, 2012, p. 208; Petrou and Connell, 2017). Pacific Islanders have long incorporated practices such as migration for wage work and new foods (Pollard, 2017). However, for many Islanders customary practices depend on maintaining traditional food gardens, protecting entitlements to land, and nourishing relationships.

Conclusion

During our project, the Civil Engineering Construction Corporation of China was undertaking the first phase of a multi-year project to construct costly tar-sealed roads by building bridges, carving through rocky landscapes, and cutting down ancient banyan trees. These roads (and the massive loans to be repaid) signify the changes underway in Vanuatu and on the island of Tanna, where tourists are drawn to its natural beauty, colourful customary practices, and the fiery abyss of the Yasur volcano. With about 60% of the population under 30 years of age, youth are critical actors shaping the land practices embedded in ecologies of care necessary for future Indigenous food sovereignty, the maintenance of social relationships, and wellbeing. However, they are charged with doing so as Vanuatu’s integration into the global economic system deepens, and policies facilitate land speculation and land grabs. This includes signing onto the WTO agreement (Plahe et al., 2013), the growing participation in regional labour markets, and the rapid expansion of digital technologies that remain too costly for creative or community work. Ever higher numbers of young people are now participating in formal education, and we found that when customary knowledge and practices are bypassed or marginalized, it is difficult for young people to privilege such knowledge. This is but one of the many intergenerational dilemmas of the postcolonial era, when climate change poses new dangers to food sovereignty and wellbeing.

While it is remarkably easy to stack up the difficulties and constraints facing Tannese islanders and other ni-Vanuatu it is important to take time to understand what islanders do and have been able to achieve (Hau'ofa, 1993). They have created an extraordinary capacity to live close to the land without mindlessly extracting from it, and their relational and imaginative vision of the world has allowed them to lead self-sufficient lives with vibrant social and ecological relationships. The Ecologies of Care Project in Tanna sought to underline the value of customary knowledge, ecological diversity, and a land tenure system designed to facilitate entitlements at a time when young people are negotiating social and economic changes, catastrophic cyclones, and the "slow violence" of climate change (Nixon, 2011). In conversations with Elders and gardeners, young researchers learned about the intricacies of customary gardens and how they generate wellbeing. We also met many, many young people who are fully engaged and deeply interested in gardening and possessed knowledge and respect for customary practices. Our project started just one year after Cyclone Pam, one of the strongest ever to make landfall in Vanuatu, which rendered the Tannese hungry and dependent on food aid until they could replant and harvest new gardens. How they cared for each other during the chaotic and hungry post-cyclone period illuminates the practices of care integral to a relational way of being and becoming in the world. Care, as Roberts (2015) stated, "is another way of operating in the world" (p. 254) and defies the commodity logic that informs neo-liberalism. The creativity of young people also challenges instrumental logic. The relationships facilitated through gardening matter to young people and, as Lesbeth Niefeu suggests, gardens imprint relational identities. The affect and the vitality of wellbeing generated through gardening that are evident in the chorus of the Garden Song Joan Niras wrote for the project:

Ba kisasim,mi sangnien tukun.
Yumi mekem karen,yumi glad.
We are making a garden, we are glad.
Maring norkeikeian ramsipan aikin (2x)
From lav i stap kam long hem.
Because love comes from it.
Ba kisangnien,misangnien,misangnien tukun nuhuaian.
Yumi glad from gudfala laif
We are glad because of this good life.

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This essay is written in memory of the late Chief Jacob Kapere, who lived the relational power of *kastom,* land, and the love of gardens.

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Engaged Palaeoethnobotany on the Northern Plains: A Compelling Future for Medicinal Plant Research

Glenn S. L. Stuart and Eryn L. Coward

Abstract The University of Saskatchewan Department of Archaeology & Anthropology became the first academic department in Canada to publicly offer a Statement on Reconciliation. Most archaeologists recognize our colonial past and agree we need to expand our focus to incorporate better the thoughts, actions, and desires of the descendant communities of those who produced the material and nonmaterial remains we study. As a subdiscipline of archaeology, palaeoethnobotany with its emphasis on traditional plant use is well-positioned to engage fully with descendant communities. The Northern Plains would seem an ideal candidate for such research, given the rarity of existing palaeoethnobotanical research and the apparent absence of engaged research on medicinal plants. Current literature on the Northern Plains does include various ethnobotanical accounts, including discussion of plants with medicinal purposes. Though rare, there are also a few palaeoethnobotanical studies, which typically incorporate ethnobotanical data to aid interpretations. But what is lacking are clear attempts to bridge these sources of information; to conduct studies specifically designed through the coordinated efforts of Indigenous Knowledge Keepers and Healers with palaeoethnobotanists. We discuss how community-engaged scholarship of medicinal plants research on the Northern Plains may benefit both palaeoethnobotany and descendant communities.

KeyWords Palaeoethnobotany; ethnobotany; archaeology; medicinal plants; Northern Great Plains

Plants have always been a crucial component of First Nations and Native American cultures, and not just for groups for whom cultivating plants was *a*, or in many cases *the*, key component of their subsistence. Nomadic groups, such as those living on the Northern Great Plains of Alberta, Saskatchewan, Montana, and the Dakotas, are typically referred to as hunter-gatherer groups, and the gathered items were primarily plants. The study of the interaction and interrelationships between past peoples and these plants falls within the realm of palaeoethnobotany. Specifically, palaeoethnobotany is the study of behavioral and ecological interactions between past peoples and plants, documented through the analysis of plant remains recovered from archaeological sites (Stuart, 2018, p. 1). It derives from ethnobotany, which refers to the scientific study and recording of the interrelationships between plants and people, especially from the perspective of traditional knowledge of Indigenous communities (Stuart, 2018, p. 3). It also is directly related to archaeobotany, which simply refers to the study of botanical remains from archaeological sites regardless of the purpose for which they are studied, though palaeoethnobotany and palaeoenvironmental reconstruction are the most common.

As palaeoethnobotanical research has continued, it has become apparent that hunter-gatherer groups from many locations around the world practiced at least limited forms of plant manipulation, if not horticulture (Lightfoot, Cuthrell, Striplen, & Hylkema, 2013; Oetelaar & Oetelaar, 2007; Smith, 2011; Turner, 2014a, 2014b). Though there is no doubt that while ancestral First Nations and Native Americans of the Northern Plains placed great emphasis on bison hunting, the use of plants was also of crucial importance (Kornfeld, Frison, & Larson, 2010). The written accounts of early explorers and ethnographers, however, put their emphasis on the male-dominated activity of bison (buffalo) hunting, with rather less said about the female-dominated collection and use of plants (e.g. Fidler, Haig, & Centre, 1991; Grinnell, 1892 [1972]). Similarly, archaeological research on the Northern Plains has tended to emphasize the use of animal resources, whose remains are often abundant in archaeological sites, rather than plant resources, whose remains are often small and difficult to see; a circumstance compounded by the fact that research methods have not systematically sought plant remains. Consequently, our knowledge of plant use in the archaeological record is limited.

This would seem especially true when it comes to medicinal plants, which are likely to be used in smaller quantities than those plants used for subsistence. Thermal features used in the preparation of subsistence items may lead to relatively large quantities of seeds being recovered (e.g., Ramsay, 1993; see also Turner, 2014a). Such does not appear to be the case for those plants employed for medicinal use which are typically used in quantities suitable to produce decoctions, infusions, juice, powders, mixtures, or poultices for individual patients, though healers would also store some plants (Hart, 1981; Turner, Thompson, Thompson, & York, 1990; Uprety, Asselin, Dhakal, & Julien, 2012). Further, it is worth noting that the same plant could be used for medicinal and subsistence purposes, though these applications often involved different plant parts, different preparation techniques, and use of the plant at different lifecycle stages (Moerman, 1996). Additionally, ethnographic data from the Plains and elsewhere typically indicates a greater range of plants is used for medicinal purposes than for subsistence, construction, or other activities (Clavelle, 1997; Kerk & Fisher, 1982; Turner et al., 1990). Hence, developing a coherent understanding of past medicinal plant use is inherently difficult. Here we argue that a crucial way to improve our understanding of such plant use is through community-engaged scholarship with the descendants of these ancestral groups. Our emphasis on medicinal plants would seem particularly apropos for a discussion of community-engaged scholarship, given the cross-disciplinary interest in medicinal plants as well as the exploitive history of at least some past research into Indigenous medicinal plant use (C. G. Armstrong & McAlvay, 2019; de Rus Jacquet et al., 2017; Hitziger et al., 2016; Weckerle et al., 2018).

It seems clear, however, that a better understanding of all aspects of past plant use and human-plant interaction would be gained through a community-engaged scholarship model.

Although her research areas are different biologically, climatically, physiographically, and culturally than those of the Northern Plains, Nancy Turner's decades-long collaborative research in the interior and on the coast of British Columbia (e.g. Turner, 2007, 2014a, 2014b; Turner et al., 1990) provides an excellent example of the high quality of ethnobotanical research achievable through engaged scholarship and serves as an inspirational model for the community-engaged palaeoethnobotanical scholarship we envision.

Community-engaged scholarship in which community-campus partnerships are developed and sustained through trust, reciprocity, and mutual benefit is a rapidly growing aspect of today's academic research (Zimmerman, 2020). Within archaeology, community-engaged scholarship goes by various names, including applied archaeology, Indigenous archaeology, community-oriented archaeology, collaborative Indigenous archaeology or, what seems to be the most commonly employed, community-based archaeology (Angelbeck & Grier, 2014; Atalay, 2006, 2012; McNiven, 2016; Nicholas, 2008; Nicholas et al., 2011); central to all is collaboration. Community-based archaeology — archaeology that is done by, with and for a local, typically Indigenous, community — has its origins in the 1990s, arising from issues involving repatriation and cultural patrimony (Silliman, 2008). Many, if not most, archaeologists recognize the validity of claims that for much of its history archaeology "continued to colonize, appropriate, and take away" (Silliman, 2008, p. 6). Yet, as Silliman (2008) points out, this realization also was instrumental in the development of new modes of archaeology, in which archaeologists sought to collaborate with Indigenous groups "to explore how to make archaeology … a cultural practice that gives back in responsible and needed ways" (p. 8).

Community-engaged archaeological scholarship is now well established, if still practiced only by a minority of archaeologists. There are both practical and philosophical reasons for this. It can typically take several years of hard work to develop a collaborative research program (Atalay, 2012; Nicholas et al., 2011; Nicholas, Welch, & Yellowhorn, 2007), a period not readily compatible with that of granting agencies or student thesis cycles. Another highly significant practical issue concerns intellectual property rights (Nicholas, 2012; Nicholas et al., 2010), which we return to below. Also of concern is "Elder Fatigue" as the demands on the time of Elders, Knowledge Keepers, and Traditional Healers expand beyond conventional roles within Indigenous communities (Latimar, 2019). The reluctance of some archaeologists to become involved in community-based research may also arise, at least in part, from the perception that community-based research is directed by the community, and consequently that archaeologists doing such work lose the ability to conduct value-free research, thereby jeopardizing scientific inquiry (Silliman, 2008; Wylie, 2015). While various authors have questioned the validity of such arguments (McNiven & Russell, 2005; Silliman, 2008; Wylie, 2015), it may not be so much whether such a position is valid, but that such perceptions are still held, despite arguments and evidence to the contrary. Much of the literature on community-engaged scholarship and collaborative research does give primacy to the community — a position with which we do not disagree — but this does not mean that the value to archaeology is necessarily diminished. In this paper, we investigate how research into palaeoethnobotany, centred on medicinal plant use on the Northern Great Plains, is greatly enhanced through collaborative research with

Indigenous Knowledge Keepers and Healers. Further, we indicate how that same research may promote capacity building in Indigenous communities and empower these communities in the restoration and revitalization of their cultural environment (see Ferguson, 2014, pp. 241-2; Morgan & Weedon, 1990). It is crucial to acknowledge, however, that not all communities may be interested in pursuing collaborative work. If members of a community are not interested in collaborating, then the research cannot proceed.

It is important to point out that neither of the current authors is Indigenous, although we are actively engaged in establishing collaborative archaeobotanical and palaeoethnobotanical research partnerships on the Canadian Plains and elsewhere in Western Canada. We could attempt to assume an Indigenous point of view to describe how we see our research benefiting Indigenous communities. However, such a position would perpetuate the colonial attitude that educated non-Indigenous people understand what is better for Indigenous groups than do the groups themselves. This is a fundamentally flawed approach. The best we can do is offer ideas about how we think such an approach might benefit Indigenous communities.

Relatedly, we cannot know the entirety of what it is that we as archaeologists and palaeoethnobotanists would gain from collaborative research. Almost certainly greater insight into past plant use, but following Zimmerman (1989), we, as scientists, must be prepared "to constantly learn (Johnson 1996)" (cited in Wylie, 2015, p. 204) and anticipate that, through collaborative research, we will learn new ways to learn.

It is important to emphasize that collaborative research is not the same as consultation, the latter involving "legal mandates, procedural steps, and compliance whereas collaboration emphasizes social relationships, joint decision-making, equitable communication, mutual respect, and ethics" (Silliman, 2008, p.7). As such, research goals and methods cannot be dictated solely by one party – that is not collaboration. To be truly collaborative, the research must have utility to all members of the collaboration.

Our approach to community-engaged scholarship draws directly from that of Silliman (2008) who stated,

> Unlike traditional ethnographers who once tried to capture aspects of people's lives without too much of their own interference, archaeologists and Native people working on collaborative Indigenous projects actually embark on a joint project. In many cases, archaeologists seek Indigenous participants as co-producers of their own history rather than as informants on a closed repository of such knowledge. … the parties join together in the present to pursue the past with respect to research projects, heritage concerns, and cultural activities for both separate and mutual benefit. (pp. 10-11)

In such an approach, methodological rigour is maintained; the whole idea is to learn more, with projects designed and practiced so that generated knowledge benefits all partners. The main point is that a collaborative project has a recognized value to the community. Benefiting the participants, both Indigenous and non-Indigenous, is a good start, but ideally the larger community would also benefit thereby building a long-term productive relationship, again revealing and emphasizing the long-term commitment of community engagement.

Palaeoethnobotany and Ethnobotany

Before discussing how collaborative research can add to our understanding of past plant use and potentially benefit Indigenous groups, a brief review of the current state of palaeoethnobotanical and ethnobotanical knowledge on the Northern Plains is required. Our emphasis here is to discuss what is missing and therefore is rather critical of existing research. However, we do not mean to minimize the important contributions prior research has made, but rather to indicate what is lacking and how a collaborative research program could help fill these gaps.

Analysis of plant remains can add a great amount of information to the archaeological record, facilitating interpretations relating to environmental reconstruction, identification of specific cultural activities, use of plants in medicine, food preferences, seasonal movement patterns and the nature and form of the interaction between Precontact peoples and the landscapes within which they lived (Stuart, 2018). Most palaeoethnobotanical research conducted on the Great Plains, however, has centred on groups that derive much of their food from plant cultivation (Cutler & Agogino, 1960; Drass, 1993, 2008; Schneider, 2002). Relatively little research has been centred on predominately nomadic groups, though the need for such work has long been known (Keyser, 1986).

Northern Plains archaeobotanical and palaeoethnobotanical research conducted at Wanuskewin Heritage Park in Saskatoon, Saskatchewan has resulted in the recovery of charred seeds from various taxa, including goosefoot, cherry, rose, honeysuckle and poplar from hearth features at the Redtail site (Ramsay, 1993). Unfortunately, no detailed examination of the importance or specific use of these plants was conducted. Analysis of charcoal from various thermal and other features at the Wolf Willow site revealed variations in fuel use through time and by activity type (Stuart & Walker, 2018), though charred seeds, the mainstay of palaeoethnobotanical research, were not analyzed. Current research at Wanuskewin by one of us (EC) is addressing both these concerns.

Further south, palaeoethnobotanical research incorporated as part of a multidisciplinary research project at the Cree Crossing site in Montana involved analysis of ten sediment samples, though only two contained charred seeds. Goosefoot and prickly pear were the only materials discussed, though it was unclear if their presence reflected resource use or was a natural occurrence (Aaberg, Eckerle, & Cannon, 2003).

Falzarano (2014) presents seed counts and identifications as part of her larger analysis involving the spatial distribution of archeological features and their contents within a series of palaeosols reflecting 8000 years of occupation at the Stampede Site in the Cypress Hills of southeastern Alberta. Given species identification, she turns to the ethnobotanical record (e.g., Johnston, 1987; Murphey, 1959) to suggest possible uses of these plants. She (Falzarano, 2014) also uses general plant processing activities within her overall analysis of change and continuity in the patterning of activities at the Stampede site through time.

Elsewhere in Alberta, analysis of starches from several grinding stones and mauls indicated the use of maize (corn) and various local grasses and fruits (Fedyniak & Giering, 2016; Zarrillo & Kooyman, 2006), while analysis of organic residues from a hearth in a stone circle (tipi ring) site revealed a range of local and exotic taxa, including maize, beans, and squash (Leyden, 2011).

While the identification of ancient maize based on the presence of starch grains alone may be questioned as a result of the potential for laboratory contamination (Clarke, 2015; Crowther, Haslam, Oakden, Walde, & Mercader, 2014), stable isotope, trace element, starch, and phytolith evidence for the use of maize has been found on the prairies of Manitoba (Boyd, Surette, & Nicholson, 2006; Boyd, Varney, Surette, & Surette, 2008), while starch and phytolith evidence of both maize and beans was found on the prairies of Saskatchewan (Lints, 2012). We are unaware of any macrobotanical evidence for the use of maize, beans, or squash on the Northern Plains. Though not directly relevant to the current work, research into the potential distribution of maize and other domesticates on the Northern Plains is a vital area of palaeoethnobotanical research, given the importance of maize as a dietary staple in much of North America combined with its previously perceived lack of use amongst nomadic hunter-gatherer populations on the Northern Plains.

Archaeobotanical research focused on Northern Plains palaeoenvironmental reconstruction and how these changing environments might have affected past peoples has also occurred (Cummings, 1995, 1996; Cyr, McNamee, Amundson, & Freeman, 2011; Klassen, 2004; Siegfried, 2002), as have some interesting experiments in palaeoethnobotany (S. W. Armstrong, 1993).

Combined, these archaeobotanical and palaeoethnobotanical studies evidence the scope of research conducted, the wide range of materials studied, and have provided significant contributions. But while medicinal plants are noted in some of these studies, as far as we are aware there are no detailed investigations into the Pre-contact use of medicinal plants on the Northern Plains. For example, Yost and Logan (in Leyden, 2011), Aaberg et al. (2003), and Stuart and Walker (2018) refer to ethnographic and ethnobotanical accounts to document whether or not any of the plant taxa identified through their analyses may have had medicinal uses. Similarly, Zarrillo and Kooyman (2006) refer to the ethnobotanical work of Peacock (1992) to document some of the medicinal plants that were processed by grinding. Such results, however, only indicate that the plants *could* have been used for medicinal purposes not that they *were* used for such a purpose. Granted, analysis of a single hearth or grinding stone is very unlikely to provide any clear indication of medicinal plant use, but then neither do those studies that have multiple samples from multiple features. The tendency toward using relatively small amounts of medicinal plants as noted above is part of the problem, but so too is the nature of the ethnographic record to which paleoethnobotanists derive information on medicinal use.

Ethnographic and ethnobotanical literature on Northern Plains plant use in general and medicinal plant use in particular is limited and occasionally ill-informed. For the Blackfoot Confederacy (Niitsitapi), one of the most extensively ethnographically documented groups on the Northern Plains, B. R. Johnson's (1988) annotated bibliography of 1186 entries lists only seven which deal specifically with plants, and five of those are by the same author (Peacock, 1992). One of the first to pay much attention to plants was Grinnell (1892 [1972]), though he paid considerably more attention to hunting. Only one early ethnographer, Walter McClintock (1910, 1923), extensively documented plant use. Both of these individuals worked and lived with Indigenous groups with their information derived directly from personal connections. Their works also seem to have formed the foundation for much of the subsequent ethnobotanical literature on the Northwestern Plains.

A perusal of ethnobotanical literature of interest to the Northern Plains suggests that such publications tend to build upon previous publications, offering new syntheses and summations, but rarely new information derived from Indigenous Knowledge Keepers. This arises not from some oversight of the researchers, but rather from the purpose of their investigations, which was to try to compile as much ethnobotanical information as possible in one place. Moerman (2009) provides an excellent example:

> *Native American Medicinal Plants* is based on the research of hundreds of scholars. I accumulated the material over a period of more than 25 years. In that period, any time I saw an item containing useful information, I made note of it. In addition, in 1993 I did an intensive search of the literature using traditional techniques such as reading bibliographies and using computerized search techniques. (p. 17)

Thus, though highly useful sources of information, one can wonder if they are truly ethnobotanical publications, given they seldom document first-hand experience derived from Indigenous specialist or non-specialist Healers.

There are, of course, exceptions and some publications specifically state that they received information from Indigenous "informants" or "consultants" (e.g. Hart, 1981; Hart, 1992; Scott-Brown, 1977). However, seldom is context provided as to whether or not the consultant is someone who routinely engaged in healing (a Healing specialist) or is a non-specialist. There is also seldomly a clear indication as to the individuals' affiliation within a specific community. It is a standard ethical requirement that the names of consultants not be provided, though some may choose to be identified. There are, nevertheless, means by which the identity of a particular Knowledge Keeper may be protected while still providing the reader with their background. For example, rather than using names each knowledge provider could be numbered or referred to by a pseudonym with pertinent information, such as the individuals' gender, age, society association, and an indication as to whether the individual is a specialist or non-specialist, provided. This information preserves the anonymity of the consultant while providing the reader with well-sourced information. Further, anonymity can protect the privacy of the Knowledge Keepers and therefore help build trust and rapport between the researcher and the Knowledge Keepers, in turn facilitating a free flow of information. While collaborative community-engaged scholarship may result in those who might otherwise fulfill the role of consultant taking an active role in the research, including as an author on a report or publication, even in such circumstances anonymity may be preserved if so desired.

These synthetic works also typically lack detailed information on how the plants are collected, prepared, or administered. Further, they tend to lack information on specific personal medicinal practices or information on group medicinal practices. Instead, they tend to list plants, using standard Western scientific nomenclature, and describe the ailment for which each plant is used. We do recognize, however, that many are likely to see the lack of information as a plus, as Indigenous groups may not want such details widely available for fear of it being misrepresented, misused, or otherwise appropriated by non-Indigenous people, and justifiably so (see Whitt, 1998).

At least as significant is that much of this literature tends to ignore the spiritual context in which many medicinal plants are collected, processed, and used. Across North America, there is a strong spiritual connection to Indigenous medicinal plant use as it is commonly understood that physical health is intertwined with spiritual well-being (e.g. Morse, McConnell, & Young, 1988; Uprety et al., 2012; Young, Ingram, & Swartz, 1989; Young, Rogers, & Willier, 2015). This is also true for the Northern Plains. Amongst the Piikani (Peigan) (Grinnell, 1892 [1972]) and Nehiyawak (Plains Cree) (Mohling, 1992), for example, evil spirits typically cause illness. On the other hand, spirits also visit people and tell them which plants to use, how to prepare them, and what songs and rituals are necessary to produce a cure (Mohling, 1992; Peacock, 1992). Thus, for Indigenous groups, spirituality is a fundamental part of medicinal plant use, and trying to divorce the medicine from the spirit divorces plant use from cultural tradition (see also Wylie, 2015). Not surprisingly, this would be seen as a fundamentally flawed approach representing another example of appropriation, dispossession, and colonial practice (for a broader perspective see Echo-Hawk, 1997).

Other gaps within the ethnobotanical literature concern differentiation between specialist and non-specialist Healers. Peacock (1992, p. 68) is an exception, noting that some plants were widely used by various members of the Piikani, such as old man's whiskers, which was brewed into a medicinal tea for colds, sore throats, fever, stomach-aches, and kidney troubles. For serious illnesses, however, reliance was placed on specific individuals considered to have spiritual powers for curing (Mohling, 1992; Peacock, 1992). Similarly, the literature is unclear as to where healing occurred, and about whether patients would go to the specialist or if the specialists would go to the patients (or both). From a palaeoethnobotanical and archaeological perspective, the spatial distribution of activities is of fundamental concern (cf. Falzarano, 2014).

However, a few researchers do properly contextualize medicinal plant use, but these same researchers are also the ones who are better immersed in the healing milieu and therefore defer from inappropriately publishing details. For example, Peacock (1992) notes, "due to the sacred nature of spiritual curing it would be inappropriate to discuss personal medicines and curing methods" (p. 69). Though some may see this as a fundamental flaw of more collaborative approaches to research, for the reasons provided below, we do not.

In summary, little palaeoethnobotanical research has been done on the Northern Plains, and even less specifically addresses medicinal plant use. Ethnobotanical information is much more prevalent, and while providing useful information to aid in palaeoethnobotanical interpretation, most of this literature lacks the necessary context to produce archaeologically meaningful interpretations of palaeoethnobotanical remains. There is also a clear conundrum concerning ethnobotanical literature. On the one hand, it is insufficient for facilitating meaningful elucidation of palaeoethnobotanical information as it typically lacks the context of plant use, but on the other hand, these very data that are the most inappropriate to publish. A collaborative approach, however, would help with both of these concerns.

Benefits of Collaborative Research

It is a standard practice in palaeoethnobotany, and archaeology more generally, to employ ethnographic data to ascertain what purposes a given taxon may have had; the theoretical perspective known as ethnographic analogy (Binford, 1972; Currie, 2016). Juniper, for example, was widely used to treat a variety of ailments not only on the Plains but in the Boreal Forest. The Dënesųłıné (Chipewyan) ate cones as a general remedy, smoked them to relieve asthma, or boiled green cones to make a tea for treating back pain associated with kidney problems (Johnson, Kershaw, MacKinnon, & Pojar, 1995). Among the Nihīthawak (Woods Cree), juniper had a variety of medicinal uses, ranging from an antiseptic on wounds to treating coughs, fevers, kidney troubles, teething, lung infections, and diarrhea (Leighton, 1985). The Pikanii used juniper for treating digestive issues, muscle pains, and as a general panacea (Peacock, 1992). Similarly, the Dakota used juniper to treat colds and coughs, as well as cholera (M. R. Gilmore, 1919). While a useful synopsis, such a discussion lacks detail. As palaeoethnobotanists, we are interested in more than just what ailment a plant may have helped cure; we seek information on harvesting loci and timing, whether plant collection locales were maintained and how, processing techniques, who used which plants and under what conditions, and knowledge regarding artifacts or other material remains that were used in association with any of these aspects. In short, we seek a far more holistic account of how a particular plant fits within the general cultural milieu.

Current ethnobotanical works are useful but, as indicated above, they have a strong tendency toward being utilitarian works providing inventories of plants and their uses. There are few attempts to provide information on plant utilization patterns or data on gathering and processing (but see Peacock, 1992). Further, existing ethnographic works emphasize western scientific classifications, with little if any discussion of Indigenous classification systems. From a linguistic perspective, Taylor (1989) highlights that accurately recording Indigenous plant names adds indispensable knowledge to a publication. He also cautions, however, that many if not most of these Indigenous names within the ethnographic record are mistranslated. This results in improper representation of medicinal plant utilization and is something rectifiable through collaborative research. From a palaeoethnobotanical perspective, even if temporally removed from archaeological contexts, incorporating such classification systems provides additional insight into how people assessed similarities, differences, and ascribed relative importance to various plants and plant uses; all of which would have utility in interpreting palaeoethnobotanical materials (see also Turner, 2014a, pp. 117-190). Consequently, it seems prudent that if we want to understand how plants may have structured, and been structured by, the activities of past peoples, we should work with the descendants of those people.

Ideally, such collaborations would involve multiple communities. As the example above illustrates, different groups used the same plant for different ailments. The literature abounds with such examples. The Niitsitapi employed chokecherry as a throat aid and antidiarrheal, whereas other groups such as the Só'taeo'o and Tsétsêhéstâhese (Cheyenne) used chokecherry as a dietary aid to increase the appetite of a sick person, as well as an antidiarrheal (Moerman, 2009). Another example is Canadian mint, employed by the Niitsitapi for chest pains whereas the Só'taeo'o and Tsétsêhéstâhese used it to relieve nausea and prevent vomiting (Moerman, 2009). Several other examples exist; mutual collaboration among various Indigenous researchers could lead to very profitable discussions of variations in plant use.

It was also indicated above that one of the problems with identifying medicinal use of plants in the archaeological record is that the plants are typically used in much smaller amounts than plants used for food as medicines are typically produced for one and food for multiple people. One means by which this problem might be ameliorated is by having access to information that provides greater knowledge as to how medicinal plants might have been distributed across a site, based on their context of use. This sort of information is rarely if ever mentioned in ethnobotanical works, but would seem to be the sort of information that relatively easily might be obtained through collaborative research, and therefore inform an archaeological research design regarding how preparation and use of medicinal plants might be revealed through palaeoethnobotanical evidence (pollen, phytoliths, starch grains, ancient DNA, charred remains) collected from artifacts (grinding stones) or sediment samples.

We also foresee areas of potential benefit to Indigenous groups. First, as with any collaborative or community-based archaeological project, such research would help build a bridge, allowing modern descendants to reconnect with their past. Collaborative palaeoethnobotanical research is also likely to play a role in social and environmental justice by re-affirming the importance of Indigenous ways of knowing. Collaboration does not negate science, but rather offers an opportunity to combine science and Indigenous ways of knowing together to provide a holistic perspective on medicinal plant use. Collaboration with multiple groups would further enhance such a perspective, and re-affirm that knowledge transcends single epistemologies and builds equity (see Atalay, Clauss, McGuire, & Welch, 2014).

Indigenous North American groups have long struggled to protect sacred sites, with only limited success. Depending on location, various municipal, state, provincial, or federal laws are relevant. In Saskatchewan, for example, provincial law (Saskatchewan Heritage Property Act, section 64) designates pictograph, petroglyph, human skeletal material, burial object, burial place or mound, boulder effigy or medicine wheel as Sites of Special Nature, and therefore deserving of additional protection. While no means inclusive — omitting, for example, such well-known and widely recognized sacred sites on the Northern Plains like vision quest sites (Friesen, 2013) — this list nevertheless clearly references sites typically, if not universally, held as sacred by First Nations.

Given that spirituality and sacredness play a huge role in traditional medicine, it is not surprising that collecting medicinal plants is a spiritual activity with offerings and prayers of thanks provided to the plant, accompanied by various rules regarding the amount to be collected and from where plants could be harvested (Karst, 2010; Turner, 2014b, pp. 297-350; Turner et al., 1990). It is not, or at least not necessarily, the presence of the plants themselves that makes them sacred – what makes them sacred is the human component, the act of harvesting and employment of the plant (Brown, 1953; Kovach, 2006; Turner et al., 1990). While some medicinal plants are widely distributed and others ecologically restricted (e.g. Uprety et al., 2012), favoured locations for plant collection exist (Johnston, 1987; Peacock, 1992; Young et al., 2015). By extension, it seems reasonable to posit that the locations that people visit to obtain medicinal plants can themselves be seen as sacred; minimally they would seem significant.

Such areas would seem prime candidates for protection and preservation (Hamilton, 2004; Karst, 2010). This would seem especially pertinent on the Northern Plains, where the scale and scope of agricultural, industrial, and urban development has destroyed about 80 percent of the grassland ecoregion (Acton, Padbury, & Stushnoff, 1998). Yet, this same sacred or significant association may also prevent groups from seeking protection for these areas as doing so draws unwanted attention to the area. Protection might also limit the very activity — the collection of plants — that was central to an area being protect (see also Hamilton, 2004). Might collaborative research facilitate the protection of such locations (and other types of sites) by offering additional means and avenues to protection? If so, such collaboration could potentially have significant ramifications. Collaboration between not only participants of a given project, but rather between the community of archaeologists and Indigenous communities in general might substantially facilitate amending existing Acts and Regulations. Particularly if such amendments are consistent with articles of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) which both Canada and the United States have now adopted. Of particular interest in this regard is Article 24, which states, "Indigenous peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals."

A significant concern about conducting collaborative research and publishing the results that would need to be addressed at the outset is the sharing of knowledge (Atalay, 2012; McNiven, 2016). How can knowledge about medicinal plants be shared in culturally appropriate ways? Who should know about the results of any particular research project, either in whole or in part? Should some knowledge not be shared at all? The sacred nature of much of the knowledge concerning the use of medicinal plants on the Northern Plains is certainly a factor here. For example, Raczka and Bastien (1986, p. 10) indicate that "some very specific and detailed information was obtained concerning … medicine bundles among the Piikáni Tribe..." (cited in Peacock, 1992, p. 26). As medicine bundles typically contain medicinal plants, this information would likely be of considerable interest to many paleoethnobotanists. However, none of this information was included in their manuscript because such items are highly sacred.

Therefore, it would seem prudent to establish as early as possible what information may or may not be shared publicly and to ascertain whether certain aspects of the research should be avoided entirely. Such potential problems are curtailed by developing research projects in collaboration, where community members are engaged in the entire research process from developing the research design, grant application generation, development and implementation of field methods to interpretation and generation of results (Atalay, 2006, 2012).

Further, even if publication is eschewed and data embargoed, research is still very much worth doing if the community decides it would benefit the community itself. At least since the 1980s, ethnobotanical publications have been warning that knowledge of traditional medicine is rapidly declining. It is not simply the fact that Elders with such knowledge are dying, though that is a factor, but also that such knowledge, for various reasons, has not been passed down to younger generations (Morgan & Weedon, 1990). By creating meaningful long-term relationships with Indigenous groups as academics, we can provide the communities with written records that are held within the community; with the community having control as to what can and cannot be published. Toward this end, we support The First Nations Principles of OCAP®, that First Nations communities have the right to own, control, access, and possess information about their peoples as this is "fundamentally tied to self-determination and to the preservation and development of their culture" (FNIGC, 2020). Thus, even if research never leads to a publication or conference presentation, this would still be incredibly important research to undertake, not because it would add to the World's knowledge but rather because it may offer the possibility of helping to restore and revitalize the Community's cultural knowledge (e.g., Ferguson, 2014).

A related important concern is that of Intellectual Property rights (Nicholas, 2012). How might the concept of Intellectual Property apply to investigations of medicinal plants? How does one ensure that publication involving collaborative research into the use of medicinal plants does not negatively affect Intellectual Property rights? The willingness of individual Healers in particular and the community in general to share their knowledge would seem to be a guiding principle. But the colonial and exploitive past is a difficult precedence to overcome, with many Native American and First Nations groups reluctant to share their knowledge of the various benefits and uses of medicinal plants because of past exploitation (see Crane, 2012; M. P. Gilmore & Hardy Eshbaugh, 2011; Nolan & Turner, 2011; Trotti, 2001). Particularly given that such appropriation of pharmaceutical knowledge is only one example; Whitt (1998) provides a long list of items from which Indigenous peoples have been dispossessed. Combine this with the sacred knowledge associated with medicinal plants, plus the fact that some plants used for medicinal purposes are toxic, even lethal if administered inappropriately, and it becomes rather clear why Indigenous groups may be reluctant to become involved in collaborative research regarding medicinal plants.

The most honest and open way of ensuring Intellectual Property rights and dealing with related issues would be for the research to be designed, directed, and implemented through collaborative efforts of Indigenous Healers, other community members, and academic collaborators. This would help ensure that methods and products avoid the extractive and invasive past of investigations of medicinal plant use while contributing to the empowerment of the community itself. As Atalay (2012) notes,

> In developing a partnership with a community, the specifics of the research topic, the field methods, and projected outcomes or products actually play a minimal role. What matters most is a shared ideology of mutual respect and a commitment to partnering in equitable, authentic ways. (pp. 128-129)

Summary and Conclusions

In this article, we have briefly discussed what community-engaged scholarship/collaborative archaeology is, outlined that Northern Plains palaeoethnobotanical research is limited, with little to no research done on the use of medicinal plants, other than the practice of consulting ethnographic and ethnobotanical sources to identify which plants were used by which groups of people to treat which ailments. Contextualization of activities involved in acquiring, processing, and using these plants is lacking, as is a discussion of the spiritual component to healing. This same information is also lacking from most ethnobotanical accounts of medicinal plant use on the Northern Plains, though there are notable exceptions (Mohling, 1992; Peacock, 1992; Scott-Brown, 1977). We also briefly reviewed other gaps in the ethnobotanical literature that limit their uses as references to aid in the interpretation of palaeoethnobotanical materials, though it needs to be noted that such use, was rarely the intention of the authors of these works. Though there are shortcomings, the fact remains that they are still highly useful works for palaeoethnobotanical investigations. We also argued that many of these shortcomings could be addressed through community-engaged collaborative scholarship with First Nation and Native American Elders, Knowledge Keepers, and Healers. Though we also point out that there are concerns involved in such projects that would need to be mutually addressed and that the development of such collaborations requires a long-term commitment.

Though it is not our place to specify how such collaborative research would benefit Indigenous groups, we strongly believe that such a benefit would accrue. For too long archaeologists, and numerous others, have held the position that the cultural histories salvaged by archaeology were not significant to a living community (Wylie, 2015). We have now become much more aware of the basic fact that the materials comprising the archaeological record can readily be argued to be part of a living cultural tradition, in particular the living cultural tradition of modern First Nations and Native Americans. Collaborative research into medicinal plants would seem an excellent means by which the bridge between past and present practices could be at least partially strengthened.

Collaborative research done elsewhere in North America has revealed that such research has the potential to be a capacity-building tool toward enhancing sovereignty and cultural revitalization (Atalay et al., 2014). Collaborative research on medicinal plants would also seem to have similar potential by helping to preserve traditional knowledge and aid in the protection of plant-collecting areas. Thus, we think such research would directly contribute to the wellbeing of the community.

It would also seem likely to contribute to the wellbeing of palaeoethnobotany in particular, and archaeology more generally. It is not incidental that such research would help to heal further the rift between archaeologists and the descendant groups of the people who produced the materials we study. It would also seem likely to contribute directly to the discipline of palaeoethnobotany itself, given Wylie's (2015) contention "that some of the most creative archaeological learning now taking place is in the context of collaborations…; they can and do significantly improve archaeological practice empirically, conceptually, and methodologically" (p. 192). Taylor (1989) emphasized that, "in order to do good ethnobotany, the investigator must have considerable familiarity with the methods and theories of anthropology and linguistics, in addition to botany, natural history, and possibly herbal medicine" (p. 360). These same attributes would seem appropriate to do good palaeoethnobotany, but with the addition that one should also have similar knowledge about the traditional and spiritual component of "herbal medicine". This knowledge, we contend, is best obtained through engaged scholarship with Knowledge Keepers. The implication being that if paleoethnobotanists do not establish the sort of horizontal connections necessary to undertake collaborative research we would seem doomed forever to have a less complete picture of the past. If we want to advance knowledge about medicinal plants in particular and human-plant interaction more generally, then collaborative research is perhaps the only means whereby this can be achieved.

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Perspectives on Health: Working with Communities as Cultural Anthropologists and Bioarchaeologists

Samantha L. Purchase

Abstract The anthropological study of health has always been an integral part of the discipline. With the development of cultural anthropology and physical anthropology (specifically, bioarchaeology) in the nineteenth century came different theories and methodologies concerning the study and definition of communities. Still today, cultural anthropology and bioarchaeology share the same broad goals of exploring the evolving relationships between experiences of health and the community, culture, and environment (being natural, domestic, political, and social). That cultural anthropologists study extant cultures and bioarchaeologists do not has necessitated the evolution of different methodological practices. Here, I explore some of the differences between these two sub-disciplines: their differing notions of community, how they engage with communities, and the relevance of their work to the communities they study. I contextualize this analysis with a short discussion of the sub-disciplines' co-evolution and ground it with examples from my research with middle Holocene Siberian, Russian Federation, and Anglo-Saxon to Post-Industrial British communities.

KeyWords Health; morbidity, community, physical, bioarchaeology

> "*The task of bridging the three bodies — individual, social, and political — remains the missing link in a critical discourse on illness.*" (Scheper-Hughes, 1994, p. 239)

In the anthropological study of health, individual and community-level experiences are explored to further understand the cultures they both form and are formed by. These generalizations allow comparisons to be made between cultures across time and space (Rosman & Rubel, 1995, p. 5). Working within time and space has created different sub-disciplines within anthropology. This report explores how cultural anthropology and physical anthropology (specifically, bioarchaeology) define and engage with the communities they study and how their study of health is of relevance therein. This exploration is grounded within my training and experience as a paleopathologist and draws on my work with skeletal populations from middle Holocene Siberia, Russian Federation, and Anglo-Saxon to Post-Industrial Britain. The evolution of the disciplines will first be discussed to help define the changing notion of community.

Anthropology has its roots in eighteenth-century Europe, when Enlightenment philosophers challenged entrenched political and religious beliefs and the European re-discovery of the so-called New World confronted ethnocentrism (Rosman & Rubel, 1995).

Revolutionary schools of thought mixed with Classics, History, and Geology (Peoples & Bailey, 1997; Trigger, 2006), culminating the following century in the advent of anthropology. Cultural evolution, or the Darwinian theory that cultures evolve or devolve over time following a series of increasingly complex stages, was the prevailing school of thought (Freeman, 1974; Taylor, 1874). The observations used to support this theory, however, were generally acquired second-hand (e.g., Morgan, 1877). Thus, early anthropologists had little or no contact with the communities they deemed to analyze. Concomitantly, American and European medical doctors, anatomists, and other scientists began excavating mortuary sites, to study human remains, and to speculate on the health of skeletal and mummified individuals (Jones, 1876; Matthews et al., 1893). By 1886, the first paleopathology manual was published by William Whitney and, by 1910, Sir Marc Armand Ruffer had defined paleopathology as the scientific study of disease in archaeological human and non-human remains (Aufderheide & Rodríguez-Martín, 1998).

The trained anthropologists of the early twentieth century ushered in cultural relativism. Anthropologists such as Franz Boas emphasized the importance of studying a culture's history and language, and of conducting one's observations in the field (Boas, 1940, 1928; Stocking, 1974). This school of thought was echoed within physical anthropology, though known under different names: culture-historical archaeology (popularized by Gustaf Kossinna and V. Gordon Childe) (Childe, 1929; Trigger, 2006) and social biology (Angel, 1946). C. Aufderheide and Conrado Rodríguez-Martín (1998) argue that before the first world war, skeletal and mummified individuals were still considered to be "curiosities" (p. 3) and true scientific rigor was inconsistently applied. As with other anthropological studies, Nationalism tainted much of the work done by physical anthropologists. The work of Earnest A. Hooton, Alfred V. Kidder and, later, of J. Lawrence Angel went on to change much of this. The former two exploring mortality and morbidity through the lenses of culture, demography, ecology, and heritage (Hooton, 1930; Kidder, 1924), and the latter studying pathology at the individual and population-levels (Angel, 1946).

British anthropologists reacted differently than their American colleagues to cultural evolution, and the early twentieth century in Britain saw the rise of functionalism or "the New Anthropology" (Malinowski, 1935; Radcliffe-Brown, 1952). This was later adopted by American anthropologists, archaeologists (calling it processualism) (Willey and Phillips, 2001), and physical anthropologists (calling it "the New Physical Anthropology") (Washburn, 1953, 1951). Functionalism promotes positivism, or objective truths derived from material evidence as tested by the scientific method (Buikstra et al., 2011; Rosman & Rubel, 1995). Years of fieldwork were now required of anthropologists, as culture was understood to be more complex than previously thought. Physical anthropologists concerned with the study of past human culture via human remains, now calling themselves bioarchaeologists in the Americas (Blakely, 1977; Buikstra, 1977) and osteoarchaeologists in Britain and Europe (Møller-Christensen, 1973), believed that mortuary contexts mirrored the ideologies of the cultures that produced them (Binford, 1971; O'Shea, 1984). Studies of health emphasized the close associations between health, epidemiology, and demography (Aufderheide & Rodríguez-

Martín, 1998). However, archaeology as a whole was preoccupied with questions of human behaviour, subsistence, and social complexity rather than health (Binford, 1971, 1962), an issue that prevails today (Buikstra et al., 2011).

The mid-twentieth century also saw French anthropologist Claude Lévi-Strauss harken back to Franz Boas' work with linguistics and theorize that cultures (like languages) were composed of unconscious systems (such as kinship, mythology, and ceremony) that created larger, meaningful structures. This school of thought is called structuralism (Lévi-Strauss, 1955). Archaeologists were slower to adopt these theories. Change did not occur until the 1980s, with a similar theory called post-processualism (Hodder, 1982a, 1982b). Where processualism was objective and material, the latter was subjective and agency driven. Contrary to processualists, post-processualists believed mortuary contexts reflected the agency of those who created them. Thus, a burial could reflect practical considerations rather than the wishes of the deceased (Hodder, 1982a, 1982b).

Today, anthropology engages in postmodernism, in which no one theory, methodology, or perspective is central to the subject. The structuralism of Boas and Lévi-Strauss persists, and the concept of agency has expanded to recognize that there is a plurality of perspectives within any one culture (Rosman & Rubel, 1995). Thus, ethnographies now sometimes include reactions to the work by members of the community, or deconstructive or discursive reflections by the ethnographer on their own culture or work (Rosman & Rubel, 1995). Physical anthropology, or more specifically, bioarchaeology, also embraces a multiplicity of theories, methodologies, and perspectives. However, contemporary bioarchaeology (especially in Britain) is often accused of focusing too much on individual case studies and not enough on community-level interpretation (Mays, 1997; Roberts & Manchester, 2005).

Engagement with descendant communities (a.k.a. community or collaborative archaeology) is one of — and arguably *the* — most socially and culturally meaningful archaeological practice to have risen from postmodernism. In this practice, archaeologists engage with members of a community descendant from that being studied archaeologically, to decolonize their research and re-empower the descendant community with agency over their culture's history. This practice represents the culmination of fifty years of shifting political, social, (see TRCC, 2015; UN, 2007) and archaeological (e.g., Agbe-Davies, 2014; Colwell, 2016; Shackel, 2014) perspectives on the rights of Indigenous peoples. It recognizes Indigenous peoples' rights to self-determination and that descendant communities are those most-qualified to interpret their own cultures. It exists at the intersection of the anthropological and archaeological practices of community engagement; and exemplifies the disciplines' parallel evolutions and shared values and goals.

In the sphere of health, both disciplines recognize the important role clinical medicine plays in grounding their work in scientific fact. At the same time, both try to move beyond the bounds of clinical reductionism to explore the evolving relationships between experiences of health and the community, culture, and environment (being natural, domestic, political, and social). In this way, all sub-disciplines of anthropology attempt to naturalize (Scheper-Hughes, 1994) the concept of health by embodying it with human experience.

Time is the fundamental difference between the cultures studied by cultural anthropologists and bioarchaeologists. Participant observation is only possible when observing extant cultures and so, archaeologists must study what remains: material culture. This means inferring health from historical documents, human remains, and artifacts (such as examining soil samples for parasites, e.g., Cho et al., 2017).

Consequently, bioarchaeologists define community differently than cultural anthropologists. Abraham Rosman and Paula G. Rubel (1995) explain that the communities studied by early anthropologists were chosen for being naturally small. They were believed to be representative of the larger culture and were composed of people who self-identified as community members (Rosman & Rubel, 1995, p. 11). Today, it is believed that a culture cannot be defined by a community. Rather, a culture is composed of multiple communities, and studying cultural evolution requires the synthesis of multiple ethnographic works (Rosman & Rubel, 1995). What community is selected for ethnographic study is often based on the social problem being investigated (Rosman & Rubel, 1995).

Bioarchaeologists cannot select communities to study in the same way. Human remains come from various sources (e.g., cemeteries associated with a parish or asylum; mass graves associated with a battle or plague; or deviant burials associated with crime or taboo). No one source (called a skeletal population or assemblage) provides an unbiased or complete representation of the wider population. To begin, the demographic distribution of those who are deceased is influenced by invisible biological, socio-economical, and environmental risk factors (discussed further below). With the aid of mathematics, the degree to which certain types of skeletal populations (attritional or infectious) are representative of the wider living population can be roughly calculated (e.g., Wood et al., 2002). Cemeteries also often represent an accumulation of the deceased over time. This means that people buried side-by-side may have died centuries apart and, therefore, have experienced different risk factors affecting their morbidity and mortality. Finally, Roberts and Manchester (2005) highlight that it is rare for entire cemeteries to be excavated. Financial, personnel, and site access limitations, as well as ethical and legal considerations (such as the North American Graves Protection and Repatriation Act in the United States), often result in partial excavation. This is ethically sound; it leaves the dead unmolested and allows for more advanced excavation and data collection methods to be used in the future should further excavation be required (Roberts & Manchester, 2005). Intrinsically, skeletal populations are not wholly representative of the living community/ies.

This is not to say that bioarchaeologists do not, or cannot, study communities. Human remains and their mortuary contexts are imbued with communal and cultural ideology (Buikstra et al., 2011). The postmodern bioarchaeologist balances processual and post-processual theory to interpret mortuary contexts and modern bioarchaeological, clinical, and forensic methodologies to study the remains therein. With the help of history and engagement with descendant communities, skeletal populations are reintegrated into their communities' narrative. Thus, bioarchaeologists, like cultural anthropologists, work from the level of the individual to the community, to the culture. Unlike cultural anthropologists, their efforts involve only one type of evidence: physical.

Bioarchaeologists can engage past communities in two ways. Firstly, they can work as a part of the team that excavates the mortuary site. This is often the case in instances of cultural resource management (a.k.a., commercial archaeology), in which a mortuary site happens to be part of the archaeological survey area (such as the discovery of multiple mortuary sites along the proposed High Speed 2 [HS2] railway line in Britain) (Addley, 2018); or, in instances of academic archaeology, in which a mortuary site is the subject of an ongoing research project (e.g., Baikal-Hokkaido Archaeology Project, University of Alberta). In these instances, the degree to which individual skeletons or mummies are studied varies based on the ethics of the country in which the project is based, the ethics and laws of the country in which the work is being done, and the timeline, resources, and goals of the project.

Secondly, in countries that do not have laws surrounding the repatriation and reburial of human remains (such as England), skeletal populations are often stored at universities (like the Department of Archaeology's Human Skeletal Collection, University of Sheffield) or other institutions (such as the Centre for Human Bioarchaeology, Museum of London). Here, skeletal populations are curated and accessible for research. It was the culture-historical archaeologists of the early twentieth century who first recognized the importance of amassing large, comparative collections of human remains; the most iconic example being Aleš Hrdlička for his formation of the comparative collection at the Smithsonian Institution, United States (Buikstra et al., 2011). In Britain today, the repatriation of human remains is much debated (Simpson, 2002). Without such collections, however, it is difficult for researchers to access large skeletal populations that allow for significant discussions of community-level health. Still, this postmodernist self-reflection speaks well for the type of agency bioarchaeologists wish to have in the twenty-first century.

Therefore, to answer a research question, bioarchaeologists first select (a) past community/ies to study and then which skeletal population(s) this is/are best represented by. Some skeletal populations are too large to be studied by a single researcher or within the project's timeline. Here, a representative sample of the skeletal population is selected. This is common practice and is often done randomly to avoid sampling bias. This practice is similar in theory to the cultural anthropological practice of handing out a survey or questionnaire to a sample of a community. I will endeavor to illustrate these interactions presently with examples from my work.

My Master's research involved investigating the morbidity of hunter-fisher-gatherer communities living in the Baikal region of Siberia, Russian Federation on either side of the climatic shift of the middle Holocene (Purchase, 2016; Purchase et al., 2019). As a member of the Baikal-Hokkaido Archaeology Project based out of the University of Alberta, Canada, I had access to the skeletal collection housed at Irkutsk State University. From this, I selected three skeletal populations to study for the periods to which they belonged, their large size, their level of preservation, and the amount of published research available for comparison. I chose one large skeletal population from before the climate changed and two smaller ones from after. In this way, I could compare the health of the skeletal populations and reflect on the risk factors that influenced their morbidity.

The bioarchaeological study of health (paleopathology), however, carries with it an intrinsic problem—the Osteological Paradox—and this affects how bioarchaeologists interact with the communities they study. The landmark publication of James W. Wood and colleagues (1992) lays-out the following issues for paleopathologists working with skeletal populations: "demographic non-stationarity, selective mortality, and unmeasured, individual-level heterogeneity in the risks of disease and death" (p. 343). In short, the age at death distribution in non-stationary populations is more likely to reflect fertility rate rather than mortality rate; the deceased represent those who succumbed to their mortality risk factors (biological, socio-economical, or environmental) rather than those who experienced those same risk factors and survived; and it is impossible to know the risk factors experienced by individuals at any given age, because they are archaeologically invisible (Wood et al., 1992). The problems of selective mortality and invisible heterogeneity in risk are issues with which I have dealt.

To compensate for the Osteological Paradox, I was conscientious of referring to those with non-specific infection-induced lesions as those who likely suffered from chronic infections, rather than those who suffered from acute infections. Compared to those with chronic infections, individuals who suffer from acute infections recover quickly or die. Therefore, acute infections are less likely to affect the bone and, consequently, can be archaeologically invisible. I also did not assume that chronic infections were the cause of death for such individuals, but that these infections were, instead, an additional risk factor contributing to the individuals' physiological stress levels and morbidity (Wood et al., 1992). Finally, while it cannot be known what risk factors affected an individual at any specific age, the presence of chronic infection within the wider population can be an indicator of broad risk factors within and around a culture. I was mindful of framing my discussion of risk factors at the community level rather than the individual (Roberts & Manchester, 2005). Ultimately, I compared my results to those of other researchers and to what is known about the cultures' lifeways. In doing so, I formed generalizations about the health of the wider hunter-fisher-gatherer communities, their relationships with the environment, and their abilities to adapt.

My current research also concerns studying human morbidity in times of transition. Specifically, I am interested in the levels of mastoid infection, maxillary sinus infection, and rib lesions indicating lower respiratory infection in British skeletal populations from the Anglo-Saxon to Post-Industrial periods (see Purchase, 2018; Purchase et al., 2020). Broadly, this research project investigates the same anthropological themes as my Master's, but through a different lens. Here, I compensate for individual heterogeneity in risk by taking a life history approach to my study of mastoiditis and assess health in terms of frailty and morbidity (see DeWitte, 2014; Marklein et al., 2016).

Like the works of cultural anthropologists since the early twentieth century (Rosman & Rubel, 1995), bioarchaeologists must synthesize multiple reports to understand a subject. It has been recognized since the rise of the "New Anthropology" that it takes multiple perspectives on a subject, community, culture, or theme to adequately capture the complexity of the human experience. In this vein, I am assessing the respiratory health of multiple skeletal populations from various periods to learn more about shifts in community health following shifts in environmental risk factors throughout time. I am adding to my work on the subject and that of other anthropologists.

Ultimately, the postmodern anthropologist is only satisfied if their work is of relevance. Luckily, even seemingly "blue sky" anthropological health research has practical applications. Rosman and Rubel (1995) highlight that many cultural anthropologists become advocates for the communities they study, giving-back in very tangible ways. This goes for bioarchaeologists, too. While the communities they study are no longer living, their research themes are still of relevance (e.g., poverty, pollution, and climate change) and inform not only their politics, but also the impact of their work. The behaviour of illness is best understood through the lenses of diverse communities from various physical and temporal contexts. Paleopathologists, for example, continuously advance the clinical understanding of infections, as they study the natural progression of disease in pre-antibiotic communities (Roberts & Manchester, 2005).

By engaging with communities, past and present, anthropologists lead the social and scientific discussion concerning the relationship between the environment and human culture; their findings inform public health discussions, policies, and laws (Dennis, 2013; Fahlman, 2019; Kiefer, 2007; Page-Reeves et al., 2013; Stellmach et al., 2018); and they have the power to affect meaningful social change (Campbell, 2011; Kiefer, 2007). In studying respiratory health in communities that inhabited various environments, I hope to contribute to our understanding of the health impacts of pollution and poverty. Such a discussion can inform social and environmental policies and regulations in light of the current global change in climate.

In the end, the anthropological study of the past is still actively engaged in the present. By moving from a study of the individual to the community and the culture, both cultural anthropology and bioarchaeology naturalize the study of health and become the "missing link" Scheper-Hughes (1994, p. 239) longs for in the opening quotation. Such research is only possible by engaging with diverse communities across time and space with a multiplicity of perspectives.

About the Author

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Using Boundary Objects to Co-Create Community Health and Water Knowledge with Community-Based Medical Anthropology and Indigenous Knowledge

Sarah Duignan, Tina Moffat, Dawn Martin-Hill

Abstract This article explores how Indigenous Knowledge and medical anthropology can co-construct community health knowledge through boundary work and the use of boundary objects. It will highlight how community-based participatory research (CBPR) in medical anthropology can help co-develop methods and strategies with Indigenous research partners to assess the human health impact of the First Nations water crisis. We draw on a case study of our community-based approach to health research with Six Nations of the Grand River First Nation community stakeholders and McMaster University researchers. We highlight how framing a co-constructed health survey as a boundary object can create dialogical space for Indigenous and western academic pedagogies and priorities. We also explore how this CBPR anthropology approach, informed by Indigenous Knowledge, allows for deeper foundations of culturally centered health to guide our work in identifying current and future community health needs concerning these ongoing water contamination and access issues. Through three health survey versions, priorities and research questions shifted and expanded to suit growing community health priorities. This led to collaborative action to communicate specific messages around water contamination and access across governance, community, and institutional boundaries. We demonstrate how our co-constructed approach and boundary work allows for the respectful and reciprocal development of these long-term research partnerships and works in solidarity with the Two-Row Wampum (*Kaswentha*) treaty established by the Haudenosaunee Nation and European settler nations.

KeyWords Indigenous knowledge; community-based methods; biocultural health; water governance and health; environmental determinants of health; co-creating knowledge

> We have a great opportunity to learn from the past, reorient our relations, and build a relationship based on mutual respect and partnership in the sharing of responsibility in this land and natural world. To achieve this, we must transcend our individualistic motivations and move away from thinking in material terms.
>
> – *the late Chief Harvey Longboat (as cited in Blaser et al.*, 2001)

Indigenous health research has a painful legacy as rooted in western academic science. With significant health disparities between Indigenous and non-Indigenous populations in Canada, there has been growing attention towards building culturally sensitive Indigenous health assessments. The reliance on umbrella approaches to Indigenous health at times offers superficial tools and methodologies that focus on tailoring health approaches to be culturally sensitive or culturally competent (Wallerstein et al., 2019). These approaches look at Indigenous health through surface cultural structures, such as using specific food examples in dietary recalls, or culturally relevant symbols and imagery in health spaces (Resnicow et al., 1999). Often programs explore individual participant health or apply evidence-based approaches without seeking direction and leadership from the community to address their matters (Tremblay et al., 2019). In doing so, this reduces or ignores deeper cultural structures, such as community values, language, Local Knowledge, or the specific sociocultural and environmental challenges that a cultural community face.

In Canada, Indigenous Peoples' water supplies are in crisis due to poor water quality and quantity, lack of access to technology (such as real-time data and transparent standards for drinking water treatment), and skilled management systems. The ongoing legacy of colonialism has created and enforced structural barriers, and socioeconomic burdens for Indigenous Peoples across Canada that directly affect their daily access and quality of water and life. Inadequate infrastructure increases the health burden of these communities in ways not seen in mainstream Canadian society. The water crisis of Indigenous Peoples in Canada profoundly connects to the ongoing struggle to have Indigenous voices heard in the governance and decision-making processes. Bunch and colleagues (2011) suggest, "actions that address both biophysical and social environments have the potential to create a 'double dividend' that improves human health, while also promoting sustainable development (p. 8)."

While there is research exploring the physical health impacts of the longstanding Indigenous water crisis in Canada, the extent to which the water crisis impacts Indigenous health (as defined and understood by Indigenous communities) is less understood. In 2015, there were 105 long-term drinking water advisories issued in over 90 Indigenous communities, affecting more than 50,000 people across Canada (Indigenous Services Canada, 2019). Health inequities for Indigenous populations in Canada persist, and in many instances appear to be increasing with climate change, environmental contamination, and political tensions. The need to move beyond generic approaches to Indigenous health is critical for creating more effective and sustainable solutions to these human and environmental health issues. Indigenous wellness must center on land, language, community, cultural identity, and empowerment (Martin-Hill, 2009).

A growing body of work represents this shift away from former health intervention approaches towards co-creation of research that respectfully addresses and center communities' specific concerns and needs around health and wellness. Community-based participatory research (CBPR) approaches have been particularly useful ways to work with Indigenous communities in health research (Hoover, 2017; Trembley et al., 2019; Tobias et al., 2014; Wallerstein et al., 2019; Zurba et al., 2019). CBPR approaches involve "collective, reflective, and systematic inquiry in which researchers and community stakeholders engage as equal partners in all steps of the research process, with the goals of educating, improving practice, or bringing about social change" (Trembley et al., 2018, p. 2). This work is best understood as a philosophical approach and not just a methodology (Coombes et al., 2012).

Community-based Participatory Research with Six Nations of the Grand River First Nation

This paper explores the ways that Indigenous Knowledge (IK) and medical anthropology can co-construct community health knowledge that is culturally centered using boundary objects within CBPR approaches. We draw on a case study of our community-based health research with Six Nations of the Grand River First Nation community stakeholders and McMaster University researchers. Our trans-disciplinary research project works with Six Nations of the Grand River Peoples in the lands known as Ontario to investigate a range of water challenges by co-creating knowledge and tools. Six Nations has endured generations of limited access to clean water and socioeconomic and human health hardships. The project is community-led, facilitating the sharing and integration of contemporary western science and Indigenous/Local Knowledge in response to water quality threats.

To build respectful relationships within our research community of practice (RCoP) of Six Nations community stakeholders and university researchers, we use the emerging concept of boundary work to frame our co-construction of culturally centered health knowledge. Boundary work, and the use of boundary objects, are emerging concepts from health geography and other allied fields within design research and natural resource management (Zurba et al., 2019). Boundary work is "those acts and structures that create, maintain, and break down boundaries" (MacMynowski, 2007, p. 3). Boundary work involves and promotes collaborative action towards a particular issue and promotes mental flexibility about the roles or ways of engaging in the work (Wenger, 2000). Boundary objects are often integral to boundary work. Cash and Moser (2000) described boundary objects as "items that are valued on both sides of the boundary, and provide a site for cooperation, debate, evaluation, review, and [institutional] accountability" (p. 115). These objects are more tangible than boundary work itself.

As part of this boundary work, we co-created a community health survey and, in this paper, we discuss how the three versions of this health survey operate as boundary objects between sub-groups within our RCoP as our relationships and research priorities grew over 1.5 years. As the community health survey shifted through three distinct versions (or phases), community health priorities and the discussions around the survey led to collaborative action and communication about water contamination and access across community and institutional boundaries.

Through this boundary work, we also explore how CBPR approaches in medical anthropology informed by Indigenous Knowledge allow more culturally centered health practices to guide research by identifying current and future community health needs in relation to ongoing water contamination and access issues. We demonstrate how our co-constructed approach and boundary work allow for the respectful and reciprocal development of this long-term research partnership and works to be in solidarity with the Two-Row Wampum (*Kaswentha*) treaty established by the Haudenosaunee Nation and European settler nations.

We also outline important considerations and challenges experienced by Indigenous and western researchers during the first year of the project. We specifically look to the capacity that western researchers and anthropologists have to be reflexive of our positionality and biases, and how these approaches can help to decolonize the spaces and research collaborations we have with Indigenous Peoples in ways that are respectful of community knowledge and socioeconomic capacity.

Co-Creation of Indigenous Water Quality Tools Project

Co-Creation of Indigenous Water Quality Tools (CCIWQT) is our trans-disciplinary, community-led project, which works with Six Nations of the Grand River First Nation in southern Ontario, and with Lubicon Lake First Nation in northern Alberta. The project is funded through Global Water Futures (GWF), a seven-year research initiative aiming to find solutions that protect water quality and quantity across Canada and the cold regions of the world (GWF, 2020). GWF research projects provide governments, businesses, and communities with the risk management tools they need to tackle threats for Canada's water supply and quality, particularly in the face of dramatically increasing climate change risks (GWF, 2020).

The principal investigator for CCIWQT (DMH) is an associate professor in the Indigenous studies program and the anthropology department at McMaster University and is a member and resident of Six Nations. The large multi-disciplinary team of university researchers includes engineers and biologists, mental health professionals, obstetrician-gynecologist (OB-GYNs), anthropologists, lawyers, philosophers, and Indigenous scholars, and Indigenous health care professionals from Six Nations Health Services and the Birthing Centre. Together, teams work in four separate but related teams: (1) community health; (2) ecosystem health; (3) water governance and Indigenous Knowledge; (4) and water quality monitoring. The research team also includes community navigators, research assistants, and project managers who are members and residents of Six Nations.

This article focuses on the collaborative health assessment work between CCIWQT's health research team and Six Nations stakeholders through three phases of developing a health survey. The community health team members were engaged with Six Nations community stakeholders and research partners to co-develop the community health assessments. The ecosystem health team members engaged in household water testing for organic and inorganic contaminants, briefly reported here as it relates to human health concerns and water use.

Water Contamination Concerns at Six Nations of the Grand River

Six Nations of the Grand River First Nation reserve is Canada's most populated First Nation community and geographically situated in the densely developed Greater Horseshoe region of Ontario (Baird et al., 2013). It is a large urban reserve occupying around 19 hectares of land. Despite having a water treatment plant within the community, drinking water quality remains a problem. Community leaders and collaborators have identified primary concerns around water: the quality of drinking water, the ecological integrity of water sources in and around the Six Nations lands, and the governance of these waters.

Drinking water treated by the water treatment plant is primarily sourced from the Grand River. However, according to an investigative piece in *The Guardian* in 2018, 91% of homes are not connected to the community water treatment plant, and many do not have access to clean drinking water (Shimo, 2018). The direct impacts of water quality and access on community health are less documented for Six Nations but remain primary concerns for many in the community. The majority of residents at Six Nations rely on wells or cisterns (a large water tank or underground water reservoir). While this is a traditional form of water access, many of the wells were not properly built and have not been maintained. Due to pervasive concerns about water contamination, many households at Six Nations rely on purchasing bulk bottled water from the Six Nations water treatment plant or third-party water services and often transport this water to their homes themselves.

In 2003, a water quality survey of domestic wells in Six Nations found a widespread problem with *E. coli* contamination and total coliforms in groundwater (Baird et al., 2013). Concerns emerged about the treatment and distribution of drinking water, along with agricultural runoff, landfill contamination, and poor quality of well water (Baird et al., 2013). Six Nations has experienced enteric infections, and it is suspected many undocumented health problems are caused by contaminated drinking water sources (Baird et al., 2013). Despite the community initiating source water planning processes, the concerns over water quality, treatment, and autonomy are still significant for many community members. A 2010 survey conducted by Six Nations Elected Council (SNEC) found that 76% of residents used bottled water, rather than well or cistern water, as their primary drinking source (Baird et al., 2013). This was mostly due to their knowledge of how contaminated well water had been, and from previous reserve boil-water advisories.

In 2018, our project tested tap water samples from 75 households for pathogenic bacteria, metals, minerals, and organics. The tests revealed 22 of the household samples (29%) were contaminated with E. coli, compared to 19% and 27% in similar studies carried out in 2003 and 2004, respectively (CCIWQT Report 2019; Neegan Burnside 2005). The water samples from the wells, cisterns, and taps of 78 households were also tested for 26 metals, minerals, and organics. Of this sample, 32 of the households (41%) found to have elevated levels of at least one contaminant: chromium in one household (1.5%), aluminum in 14 households (21.5%), manganese in three households (4.6%), arsenic in one household (1.5%), mercury in 18 households (27.7%), and uranium in one household (1.5%) (CCIWQT Report, 2019).

Community Health Assessment Survey

Despite increasing concerns over water contamination from Six Nations community leaders and members, there remained uncertainty about water use at the household level, and connections between water use, contamination, and human health risks were unclear. As part of this broader project on water quality tools, the McMaster health research team (Tina Moffat, Sarah Duignan, Dawn Martin-Hill) and a community member and McMaster student assistant were requested by the Six Nations Health Services to assist in co-developing a community health assessment with Six Nations Health Services team.

This assessment included co-creating a health survey tool with Six Nations Health Services that accurately reflects Haudenosaunee values and wellness models that would provide an understanding of water use and security issues for households and the community a snapshot of holistic health. The health research team thought they could connect this survey assessment to the water contamination tests and analyze the relationship between water use and human health for residents now and for future generations.

Past community health assessments at Six Nations were carried out by external parties (often federally funded) and structured in ways that did not encompass Haudenosaunee health models. This resulted in decreased engagement rates and a decision to not participate in the First Nations Regional Health Survey (FNRHS) in 2017. While the use of IK is critical during every phase of the Co-Creation of Indigenous Water Quality Tools project, having IK guide the co-construction of health assessments, and framing them within CBPR philosophies allowed for the development of a health survey through three distinct phases: (1) A general and expansive community health survey based on previous federal Indigenous health surveys; (2) a short pilot water use and health survey that tackled the water-specific concerns emerging from the community and was integrated the ecosystem health team's water testing results; and finally (3) a holistic health and water survey centered in Haudenosaunee understandings of holistic health and more recent concerns about COVID-19.

In this study, we use three phases of health survey co-creation to discuss the collaborative relationships built between Six Nations and McMaster team members between January 2019 and August 2019. We explore how the survey helped to center Haudenosaunee-specific health models reflecting the interests, concerns, and assessment structures meaningful for Six Nations peoples, framing the survey as a boundary object co-constructing knowledge and helping navigate relationships between different stakeholders. Ultimately, having a boundary object created a space for fruitful dialogical discussions between local Haudenosaunee and western anthropological pedagogies. *Figure 1* provides an outline of the main stakeholders working together through the health survey assessment.

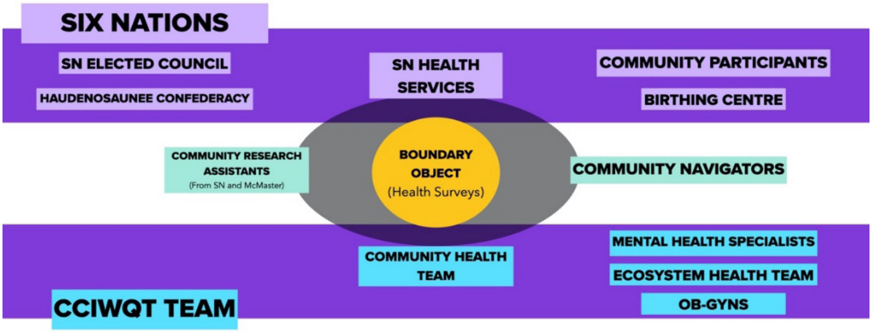

Figure 1. Key groups working in their rows to honour the Kaswentha, while meeting and building relationships at the boundaries through the health survey

Understanding and Defining Community with Six Nations of the Grand River

Understanding who constitutes community for Six Nations is best explored through the historical and current governance of the reserve. The Haudenosaunee Nations (People of the Longhouse) are sometimes referred to as the Iroquois or Six Nations and are one of the oldest Indigenous groups in North America. The Six Nations Confederacy was created hundreds of years ago by five linguistically related nations in the eastern Great Lakes region: the Mohawk, Oneida, Cayuga, Seneca, and Onondaga Nations. In the early 17th century, the Tuscarora Nation joined as the sixth Nation in the Confederacy.

Often within Indigenous health research, the collaborating community stakeholders are solely at the level of First Nation Bands. In Canadian contexts, a First Nation band refers to "the collective of recognized members of a First Nation who have had lands set apart for their use by the Crown or are declared to be a band within the Indian Act" (Tobias et al., 2013, p. 132). The Indian Act of 1876 formalized restrictions for Indigenous Peoples within Canada, "including the dissolution of all existing traditional councils and the establishment of a federally approved elected-council system, as a means of controlling activity on reserves" (Monture, 2014, p. 69). As is the case with many First Nations communities, there are multiple forms of governance operating within Six Nations, which shapes not only community but land and water governance as well.

The Haudenosaunee Confederacy has been in place since time immemorial. Also known as the League of Nations, the five separate Nations agreed to live under the Great Law of Peace (or *Kaianerekowa)* provided by the Peacemaker (Monture, 2014). The symbol of the Confederacy is the longhouse, which was provided by the Peacemaker; it initially signified living together as families of the same house, but today is understood as a symbol that supports the traditional ways and values of the Haudenosaunee (Haudenosaunee Confederacy, 2020).

After the American Revolution, many of the Six Nations Peoples were displaced from traditional lands and moved to Upper Canada, where they were provided with the Haldimand Tract of land by the British Crown in and around the Grand River tract (Hill, 2017). However, much of this land was lost over time due to land sales, leases, and squatters (Haudenosaunee Confederacy, 2020). What land remained became Six Nations Indian Reserve Number 40 in 1842. The Haudenosaunee Confederacy have long maintained their sovereign nationhood (Monture, 2014).

The federally recognized Band Council also exists and operates within the reserve. This band council, Six Nations Elected Council (or SNEC), was enacted by the Canadian federal government in 1924 (Hill, 2017). Six Nations Elected Council (SNEC) represents the Band Council as defined by the Indian Act (Indian and Northern Affairs Canada, 2002). The community's water treatment plant operates under Public Works, which is within the jurisdiction of SNEC, as is Six Nations Health Services.

While these two governing bodies represent different community identities and relationships, it remains of great importance to develop reciprocal relationships with each governing body for this work. Conceptualizing community in referral only to SNEC or only to the Confederacy would be limiting, as the community is not homogenous, and Six Nations community members hold diverse spiritual, social, and political perspectives that impact their concerns and priorities.

Haudenosaunee Environmental and Political Philosophies

As a project led by Six Nations of the Grand River peoples, we frame our work within several Haudenosaunee guiding principles, which will be briefly outlined here. Haudenosaunee environmental philosophies are contained with the *Ohen:ton Karihwatehkwen,* or Thanksgiving Address, the words they say before all else. This address acknowledges all parts of Creation and offers respect and gratitude to them for upholding their responsibilities (King, 2007). An important message for our work from the *Ohen:ton Karihwatehkwen* is that when the land is sick, the people become sick too (Haudenosaunee Environmental Task Force, 1992). For sickness in the community to be healed, sickness in the environment must first be addressed.

This teaching is a keystone to understanding how to center health assessments in Haudenosaunee culture. With federal health assessments that look at individual physical and mental health, such as the First Nations Regional Health Survey (FNRHS), these important connections between health and the environment are not addressed in relation to physical, social, and spiritual health issues. For Six Nations as a community, this means that past health assessments have not been anchored in how they understand health, and so important conditions and concerns around health may likely have been missed, misinterpreted, or under-explored.

The *Kaswentha*, or Two-Row Wampum was the first treaty between Europeans and Indigenous Nations on *Anowarakowa Kawennote* (Great Turtle Island, or North America), established between the Haudenosaunee and the Dutch settlers of eastern New York. It became the foundation of later treaties with France, Britain, and the United States and represents self-determination and a friendship treaty between these two nations. The Two Row Wampum belt is woven with white and purple beads or shells, depicting two boats on a river, with the purple rows representing the paths each boat makes as they travel down the river, one for the European ship, and the other for the Haudenosaunee canoe. While the boats travel alongside one another, their paths do not cross. Inside each boat is what defines it as a society: customs, laws, and ways of life. This symbolizes respect for autonomy for their own way of life and governance. The three white rows represent the river of life, and relationships based on *skennen* (peace), *kariwiio* (good mind), and *kasastensera* (strength) (Haudenosaunee Confederacy, 2020). The fringe on the belt indicates that the relationship is unending (Hill, 2017). Water represents both the river of life, but also the foundation on which the *Kaswentha* agreement is based.

Recognizing the role of water in the *Kaswentha* is important in understanding how settler colonialism has transformed the land and waterways. Through spatial reconfiguring, settlers transformed and re-territorialized waters, bodies, and beings (Schneider, 2013). In doing so, they have broken and tarnished the *Kaswentha* treaty: there have been over 400 years of dehumanizing assimilation, ongoing colonization, and violence on the part of white-settler society. Environmental destruction of the lands in and around Haudenosaunee territory is a form of this continued settler-colonial violence. Hallenbeck (2015) argues that centering research discussions around water "opens up a space for political and relational attention towards the bodies, being, stories, and histories that run through it" (p. 353). The contamination of the Grand River and surrounding waterways must be understood as directly connected to the dispossession of Haudenosaunee territory and subsequent health concerns.

To be in solidarity with the *Kaswentha* is to practice non-interference as a western researcher, to work in ways that are not exploitative. To decentre settler-colonial states, we need to work not only against power and control, but in ways that reimagine alternative institutions and relationships. Working with boundary objects helps to create spaces in which these difficult conversations may arise. Using a health and water use survey as a boundary object, discussions can emerge around the dispossession of Haudenosaunee territory, while decolonizing bodies of water like the Grand River in the process.

Decolonizing Indigenous Research

Decolonizing research has been a priority for Indigenous researchers, community members, and advocates for decades. Māori scholar Linda Tuhiwai Smith (2008) defines decolonization as "a process to undo harmful effects of colonization, including land theft, genocide, and assimilation" (p. 3). Decolonization is more of a praxis that matches theory with practice at every phase of research. Increasingly, we are seeing scholars implementing these approaches into their research, combatting western structures of power and knowledge. To do this, decolonization efforts might include involving elders, community members, and youth at all phases of research.

Language is a powerful tool in decolonization, so understanding key terminology and how it may be used (and how these uses may differ from project to project) is critical to building a foundation of respectful and appropriate work. There can be some confusion between indigenization and decolonization as terms. Indigenization often involves making a space "Indigenous" by including Indigenous peoples, as their presence brings a different perspective. This does not mean that these spaces are challenging white-settler frameworks. Decolonization attempts to challenge these systems of academic and western knowledge. Frequently, there are components of direct action taken to challenge injustices or systems that perpetuate the exclusion and/or assimilation of Indigenous peoples and their knowledges (Drawson, Toombs, & Mushquash, 2017). Decolonization will look different from place to place and project to project.

Decolonization of research includes using IK as the framework and foundation for much research. IK and traditional medicine have been hard to define, as many understandings and descriptions from Indigenous peoples are rooted in deeply localized contexts (Martin-Hill, 2009).

While definitions vary, one of the most used definitions of IK frames it as the "complete knowledge system with its own concepts of epistemology, philosophy, and scientific and logical validity… which can only be understood by means of pedagogy traditionally employed by these people themselves" (Daes, 1994, p. 3).

IK approaches to health will vary based on the culture, language, and place of the communities collaborating on research. Donatuto and colleagues (2014) note, however, that IK concepts around wellbeing are "structured in content and internal logic and comprise practices and knowledge about connections between human beings, nature, and spiritual beings " (p.356). While the particular relationships between humans, nature, and spirit are understood and acted on differently across Indigenous cultures, these more profound responsibilities work within a network of sacred relationships that distinguishes IK from western perspectives on health and sustainable practices (Kealiikanakaoleohaililani & Giardina, 2016). It is a participatory process and an experiential one – it is "not just about understanding relationships, it *is* the relationship with Creation" (McGregor, 2008, pp. 145-146).

While it is problematic to homogenize the cultures and belief systems of First Nations, water is one area where communities widely share similar attitudes and beliefs: water is life (Swain et al., 2006). For Six Nations Peoples, their teachings share that water is the first environment in our lives (in our mother's wombs). In IK, water degradation "directly impacts the people, permeating every aspect of their lives. It threatens their very survival" (McGregor, 2012, p. 10). Local relationships with water and their impact on community health are significant considerations that often get left out of First Nations health assessments. Understanding the histories and politics of water governance specific to each community is helpful in moving towards a more culturally centered assessment of community health.

Decolonizing Community-based Participatory Research work within medical anthropology

CBPR is seen by many Indigenous communities as a necessary standard if research is to continue with academic institutions, given the research abuses by academics in the past (Hoover, 2017). CBPR has been used across many research projects as a way of reducing health disparities for marginalized communities and ensuring health care programming that is culturally appropriate for Indigenous communities across a spectrum of health issues (Garwick & Auger, 2003; Chrisman et al., 1999; Dignan et al., 2005; Strickland, 2006; Trembley et al., 2016; Zurba et al., 2019). Most importantly, CBPR builds a research foundation of a community's right to participate *and* a community's ability to refuse participation as central to ethical research with Indigenous communities (Zurba et al., 2019). Boundary work has been successfully incorporated into CBPR research with First Nations communities in Canada and Indigenous communities in Australia due to its ability to enhance equity and relationships within these research partnerships (Robinson & Wallington, 2012; Zurba & Berkes, 2013; Porter & Barry, 2014; Maclean & The Bana Yarralji Bubu Inc., 2015).

The traditional and cultural values of Six Nations Peoples are well aligned to work on co-developing a CBPR project and have used this approach with success in the past (Gordon et al., 2018). Their collective thinking, concern about how current decisions will impact future generations, and ability to approach gatherings and situations with *kariwiio* (a good mind) showcase their longstanding strength and autonomy as a Nation. The community has multiple decentralized community services, programs, and research projects, including their own research ethics board in relationship with SNEC, and other autonomous and consistent protocols through Confederacy to help create safer and more reciprocal research partnerships with academic institutions. For this phase of the research and beyond, we look to the *Kaswentha* as a reminder of how we can work together in our own rows to develop tools and programs.

Community Health Project Formation

The health dimension of the Co-Creation team began discussions of community needs and concerns in January 2018 with Six Nations Health Services (Director Lori Davis Hill and portfolio team members). Ph.D. candidate Sarah Duignan began to work with Six Nations Health Services as a research assistant over a six-month period, compiling data from over twenty years of health assessments conducted with or by Six Nations Health Services to identify areas of health assessments that were consistently prioritized (or lacking) across multiple and varied household surveys and questionnaires. This allowed us to establish a baseline of what information was known about community health, and what (and who) was missing from the profile.

After realizing how much about community health was inconsistently assessed or not understood, Six Nations Health Services voiced interest in the development of a community health assessment survey that would eventually become an autonomous tool, to use now and for future community health assessments, independent of academics or other institutions such as the federal government. Connected to this was an existing gap in knowledge around how water contamination and water insecurity directly affects human health for Six Nations community members, and whether or not there were correlations between household water sample tests and health experiences. There had been previous work beginning to explore this through the 2010 Source Water Protection Survey through the Haudenosaunee Environmental Task Force, and these community stakeholders wanted to continue this exploration.

In co-constructing and using a survey, the degree of research fatigue experienced by community members must be considered. Six Nations Peoples are surrounded by four major universities, and their proximity to urban locations means they have an abundance of researchers interested in working with them. It is common to hear “We have been researched to death,” which can feel like an understatement given Six Nations’ size and geographical proximity to major research institutions in southern Ontario. This sentiment runs deeply across many First Nations communities, and feelings and experiences of research fatigue have been factored into ownership, control, access, and possession (OCAP) principles (First Nations Information Governance Centre, 2014).

Having an Indigenous scholar as principal investigator and a research team with diverse gendered and racialized identities certainly does matter and helps to make Indigenous researchers central in Indigenous research. For those of us on the project who are non-Indigenous, and speaking particularly to our anthropology backgrounds, it is important to be aware of the ugly history of anthropology rooted in racist science, and how we can actively work to unlearn biases through this collaborative work and in adherence to OCAP principles and local protocols and ethics (Marks, 2012; Smedley & Smedley, 2005).

Ethics Approval from Six Nations Research Ethics Board

Ethics approval for the project-at-large was obtained in January 2018 from Six Nations Research Ethics Board, which represented the approval of Six Nations Elected Council. Verbal agreements and approval were expressed from the Haudenosaunee Confederacy in January of 2018 as well. The umbrella approvals from SNEC and the Haudenosaunee Confederacy were necessary for the application for ethics from the McMaster REB. As this approval was granted for the large, interdisciplinary project, and did not provide the details of each phase and step of the project, institutional ethics boards found this more difficult to comprehend.

We expressed to the institutional REB that these approvals from the two governing bodies of Six Nations were granted as umbrella approvals only, due to the volunteer nature of the community REB and that many of those who worked on the REB were over-worked in multiple spaces. Coming to SNEC and the Confederacy with new formal addenda for each small part of the research project would be more work for them that would take them away from other important community work.

To work around these issues of capacity, the PI (DMH) and co-investigators have engaged in ongoing communication with both governing bodies of Six Nations. They share progress updates, and ask for assistance and insight on critical issues and concerns they may have around water and environmental health as they arise.

As the work continued to unfold, we worked out a memorandum of understanding with Six Nations Health Services, formally written and co-signed between our principal investigator and the director of health services. This established understandings and outlined key principles for the conduct of the research partnership involving community members and leaders. These were written and co-signed in September of 2018. Establishing these clear expectations and outcomes for both sides allowed for the development of ongoing open communication about each side's needs, wants, and abilities that they can bring to this work.

Community Health Surveys as Boundary Objects

The co-construction over two years (2018-2019) of a community health assessment served as the boundary object, or document, from which we were able to bring together parties within our research community of practice for the collective process and construction of a tool that would serve both Six Nations and McMaster collaborators' aims and goals.

There have been three primary versions of the community health survey over the two years, each operating as a boundary object between community and academic collaborators, and in different and overlapping ways. Table 1 outlines which stakeholders were involved at each stage in this boundary work. *Figure 2* shows a timeline of the community health assessment survey development through the three versions.

Table 1. Overview of survey types and stakeholders involved in development

Survey Version	Stakeholders Involved	Use of Survey
1: General Longform Health and Water Survey	McMaster: community health team, mental health team Six Nations: Six Nations Health Services stakeholders, SNEC, Confederacy	Broad: focused on similar assessments as FNRHS but to use autonomously and comparatively; physical, mental health focus
2: Water use and health pilot	McMaster: Community health team, ecosystem health team Six Nations: SNEC, Confederacy, community members	Specifically targeted to households whose water was tested for contaminants to assess water use, self-reported health, and better understand role of water in health concerns
3: Culturally centered health, wellbeing, and water survey	McMaster: community health team, mental health team, ecosystem health team, OB-GYNs Six Nations: SNEC, Six Nations Health Services, the Birthing Centre, dietician, Grandmother's Council, community fishers and hunters	Informed by pilot (SV2) and ongoing feedback, co-constructed health and water use survey grounded in Haudenosaunee values

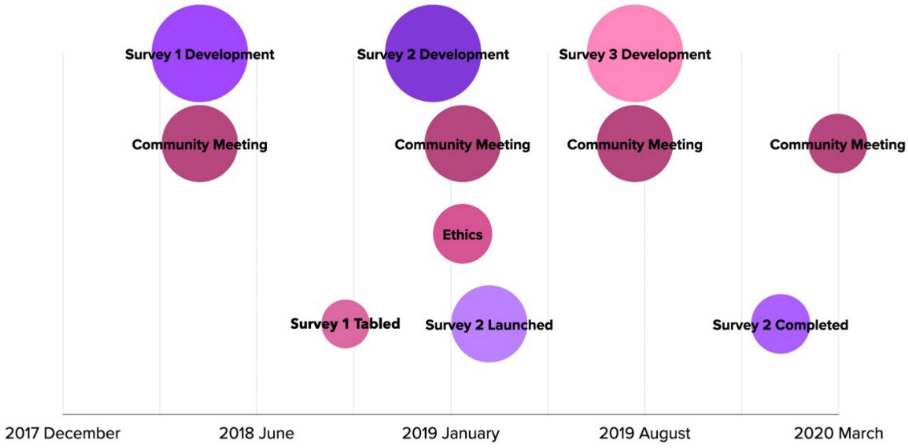

Figure 2. Timeline of community health survey development

Survey Version 1: A General Longform Health Survey

The health survey version 1 (SV1) was developed over the summer of 2018 in collaboration with Six Nations Health Centre. SV1 was a lengthy 30-page survey that reflected Haudenosaunee wellness models while containing measurements of individual health that would be comparable with other First Nations Peoples' health outcomes, as requested by Health Services. It was also developed to be eventually used as an autonomous tool, separate from federal and provincial funding bodies, and had community appropriate snowballing sampling strategies.

Conversations arose during the co-construction of questions in meetings between Six Nations Health Services employees and McMaster researchers around the importance of understanding community traumas. Many Health Services employees wanted trauma-informed questions addressing personal and collective intergenerational and historical trauma. These were important to understand better physical and mental health trends (around chronic pain and mental illness in particular). These meetings became spaces where community members within the RCoP vocalized and engaged in difficult and often personal topics. Structuring the health survey to reflect these diverse forms of collective and individual trauma, which are often bypassed by white-settler approaches to health, helped to challenge traditional power structures and allowed for vulnerable exchanges between stakeholders.

This became one of the first steps in the co-creation process, where power was redistributed in the development of a health survey. As surveys administered within Six Nations in the past often failed to consider and hold community values, re-centering this survey allowed for the knowledge, values, and belief systems held by community stakeholders to be prioritized. The survey as a boundary object helped navigate the boundaries of work between Six Nations Elected Council, Health Services, and McMaster researchers; at survey construction meetings within-community dialogues arose from crucial questions the health survey brought up.

Three main concerns arose: (1) prioritizing health beyond the physical, individual level; (2) engaging community sub-groups who were often left out; and (3) effective and accessible ways to conduct and launch the survey. These were often interrelated concerns, as the generic approach to federal surveys operated through random sampling of households. This meant that the survey would target the person in the home holding the most knowledge of the family (often a female-identifying person) but would only ask questions specific to their person. Additionally, these surveys were administered as pen-and-paper to be mailed back to the survey collectors, which is a tedious and inaccessible method for many, particularly younger generations. The result was consistently having men and youth under-represented in survey data, as well as biases in what health concerns were prioritized. Finally, by centering the survey in the Six Nations Health Services we were attempting to decolonize the research process by questioning who has the capacity to launch the survey, how is the survey conducted, and data storage. While these latter points are still being worked out with the upcoming survey version 3 (SV3), the primary goal of creating these surveys is to eventually have a consistent community health assessment for future use that can be stored in SNHS, and conducted with aid from community navigators, community research assistants (RAs), and McMaster researchers.

McMaster stakeholders also engaged in discussion between separate co-teams within the project. The mental and community health researchers were able to hold conversations around merging our health questions as per the recommendations of Health Services employee recommendations and experiences. Further, it helped non-Indigenous researchers more strongly understand the diversity of perspectives and priorities within different Six Nations Health Services operations and allowed us all better insight into just how big of an undertaking it would be to co-create a tool that was useful and appropriate for the community and useful for academic forms of research and publication. The long form survey was paused in December 2018, due to increasingly limited capacities of some relevant SNHS stakeholders. While the long form survey was paused, the Co-Creation of Indigenous Water Quality Tools project focused on how to address the specific results of the household water quality tests with other community stakeholders.

Survey Version 2: The Piloted Water Use and Health and Water Use Survey

With the realization that household water testing required a focused survey for the specific households engaged in water testing, survey version 2 (SV2) was shortened to 10 pages and more directly connected water quality, use, security, and perspectives on water governance with measured household-level health experiences. This was developed in January of 2019, with ethics approval obtained from McMaster Research Ethics Board in February 2019 and brought to Six Nations Band Council and Confederacy on two separate retreat days in March 2019 and met with approval. As explained above, the McMaster researchers in the ecosystem health assessment dimension of the CCIWQT project tested the tap, well, and cistern water of 75 households (selected through snowball sampling) for biological and heavy metal contamination. Those who participated in their water testing in the summer of 2018 were invited to complete the SV2 during a household visit.

These retreats and meetings further allowed for community partners to express their interest in helping support the dissemination of the health survey, as it relates to the water testing results that both SNEC and Haudenosaunee Confederacy were made aware of during these meetings. Going through the survey questions prompted discussions around specific water concerns for SNEC members, and with Confederacy it inspired discussions of teachings around water's role in the community.

SV2 was launched in April 2019, and then operated as a boundary object between the research team and community members as well. A team of research assistants (RAs) that were both Indigenous and non-Indigenous worked within the community making household visits for those who consented to participate in the survey. The survey acted as a jumping-off point for more discussion in many instances. Questions on the survey prompted discussion between community participants and RAs: personal and family health experiences were shared on both sides, perspectives around water's role in health and wellbeing arose, and many concerns around water contamination were prompted in working through the survey.

For many community members who participated in the survey expressed tremendous dissatisfaction with water services and governance in the community. Even those who were financially comfortable enough to purchase bottled drinking water believed that there was much work to be done on improving the health of the Grand River and its offshoots: if they could not use the water and lands around it the same way generations before could, could the community really be healthy? Indigenous RAs spoke on a more personal level with household and community members and were able to put a face to the research, which was important for building long standing relationships. Further, it gave space for all of us working at our boundaries to better understand each other: for the medical anthropologists, it was a time to listen actively and bring the participants' values and perspectives back to the table when we met with other McMaster researchers on the project and the community stakeholders at further meetings.

Survey Version 3: Culturally Centered Haudenosaunee Health and Wellbeing Survey

The third version of the survey (SV3) was adapted from SV1 and was co-constructed over the summer of 2019 during multiple face to face and digital roundtables with representatives from Six Nations Health Services, the Birthing Centre (Tsi Non:we Ionnakeratstha/Ona:grahsta'), a McMaster OB-GYN with longstanding research relationships with the Birthing Centre, the CWIQT mental health and wellness and community health teams, a registered dietitian, community fishers and hunters. Additionally, the survey was reviewed by a Grandmother's Council through meetings with the mental health team.

This process involved several meetings between interested stakeholders to go through an array of past health surveys (an ongoing Birthing Centre study, examples from the mental health team, and the pilot SV2) to work towards a co-constructed longform survey that represented Haudenosaunee health values. These meetings opened up room for much deeper discussions, as our relationships with each other had grown over the year and a half. Many of us were mothers, and informal discussions about our children then led to much more nuanced discussions of maternal-specific health risks related to water quality for Six Nations residents (e.g. contaminated water and sitz baths postpartum, or lack of access to clean water for traditional medicine making). These were questions none of us had previously considered assessing through research. However, the space provided through these survey-centric meetings allowed us all to draw more reliable culturally-centered connections between water and health for the Six Nations community and to think about more representation from the more vulnerable community members.

Meetings with Faith Keepers and Clan Mothers of the Confederacy helped the survey take a more Haudenosaunee shape. Questions were framed in ways that were open enough for all Six Nations community members (regardless of spiritual or political views), but still reflected fundamental traditional teachings and IK. This was, at times, a more challenging element of co-constructing questions, given the particular skills and tools that academics were used to working with for studies not always being in line with the ways Six Nations collaborators wanted the questions constructed.

Working on questions around mental health at times proved challenging, as most mental health assessments are formatted within validated Likert scale formats (such as positive and negative affect scales, and resiliency scales) or with checklists (such as for post-traumatic stress disorder and trauma-related altered states of consciousness). While validation of scales is useful if the goal is to compare a research study's results to the results of other study populations, this is not a priority for the SNHS. Cross-comparisons are not useful in any immediate sense for the Six Nations community, especially given that the psychosocial burdens around mental health for Six Nations Peoples will be very different from other communities' given their unique relationships to water and land.

There have been numerous surveys exploring western-centric mental health assessments over the years at SNHS, so health care providers were more interested in prioritizing more predominant gaps in knowledge to help frame future programs and policies around mental health and environmental connections. Rather than use these generic validated scales, the group determined it would be best to explore the relationship between one's mental or social health and water quality by asking Likert scale questions such as "I seek out opportunities to spend time around natural sources of water" or "I feel better when I am around natural sources of water." These questions then lead to more specific questions around water-related health practices, such as picking traditional medicines or canoeing and kayaking on the Grand River. These questions were much more relatable for the community than generic mental health questions. They also create a space allowing for more open discussion afterwards about traditional medicine use and access with future participants, because traditional teachings are infused across the survey.

Towards a Culturally-Centred Health Assessment Document

By framing the health surveys as boundary objects that reflect the boundary work between Six Nations and McMaster team members, we were able to move towards a more culturally centered approach to health assessments that are reflective of CBPR principles. The ongoing development allowed for reflection on the relationships and research goals for all members of the RCoP. Each phase incorporated more communal learnings into the research partnership, and more space for Six Nations community members to participate in the research process.

For many marginalized populations, they have dynamic collective consciousnesses rooted in land and language but must respond to oppressive mainstream sociopolitical structures that impact their health (Airhihenbuwa & Liburd, 2006). Rooting this health assessment in relationships to land, language, and community identities speaks to more dynamic and deeper understandings of health and the social, cultural, and political barriers that Six Nations Peoples face. A health assessment based on traditional teachings around water and land is also a step towards more empowerment and autonomy in their community health research.

As stated earlier, a foundational teaching within the *Ohen:ton Karihwatehkwen* is that when the land is sick, the people become sick, too. Rather than researching just how Six Nations Peoples are becoming sick and isolating these experiences from the contamination and degradation of their lands, we are working towards building tools that connect these elements more holistically. This creates tools that are more engaging and empowering, as community members see their values and experiences reflected in the structure of questions. In the case of the smaller community health and water use pilot survey, the survey became a springboard for conversations between participants and the community RAs. They could highlight their own experiences, share important lessons, and know that these conversations will be honoured in the ways the work is shared back with community stakeholders and at events in the future.

For us, as medical anthropologists, it has been an ongoing reflection and assessment of power in health research. This means that we mobilize our power and skillsets as researchers to support broader partnerships within the community as research continues, and recognize the specific skills, interests, and concerns that all parties bring to the table. We are able to reflect upon these through how the survey versions adapted as we brought more parties into our research community of practice. Rather than build longer and longer surveys where community and research needs were roughly patched together without considering how to make them more cohesive, we were able to structurally change the documents so that the foundation was rooted in community IK. The lives and needs of Six Nations Peoples are the core that drives this research forwards, and these engage with non-Indigenous academic lives and approaches along the way.

Community-based Participatory Research as Philosophical Stance in Medical Anthropology

As medical anthropologists working within CBPR approaches, community partnerships are essential sites for co-constructed meaning-making. To honour local IK here means reflecting on our power and privileges as researchers. Tobias et al. (2013) argue that for social scientists working within CBPR initiatives with diverse Indigenous communities, this work "should ideally pursue a set of common objectives: to equalize power differences within the research process; to build trust between the researchers and community; and to foster a sense of ownership tied to generating momentum toward social change" (p. 132).

For a genuinely respectful co-creation partnership, it should also centre decolonizing methods. Dakota scholar Kim TallBear (2013) argues that "rather than integrating community priorities with academic priorities, changing and expanding both in the process, decolonizing methods begin and end with the standpoint of Indigenous lives, needs, and desires, engaging with academic lives, approaches, and priorities along the way" (p.20). For non-Indigenous researchers, this sets new expectations for how we approach our work: we are expected to seek and incorporate community suggestions and directions for research, while being open to learning and accommodating changes to research trajectories and timelines along the way (Hoover, 2017).

The literature on CBPR approaches within medical anthropology is scant, though there is some research on participatory action research (PAR) with similar lenses. The medical anthropology research that does explore CBPR usually discusses it relative to graduate studies education and training opportunities with marginalized communities, and not specifically with Indigenous Peoples (Jessee et al., 2015; Sheehan et al., 2014). There is work within archaeological research that utilizes CBPR, though CBPR is often used as a tool and not as a decolonizing philosophical approach (Atalay, 2007; Hollowell & Nicholas, 2009; Nelson, 2017; Gonzalez et al., 2018; Alvarez, Larrain & McCall, 2019). Atalay (2019) argues that while CBPR within archaeology is growing, the need for more decolonized models and collaborative, sustainable systems are needed for true systemic change within the discipline.

Watson (2019) argues that with the increased interest in PAR and the 'action turn' in anthropology, it is beneficial to repurpose the language of PAR to facilitate more nuanced discussions of what PAR (and CBPR) can be within anthropology. By using CBPR as an approach to research and relationship-building *with* community stakeholders, and not just as a tool for assessing health, medical anthropologists can engage in deeper understandings of these relationships between health, community, and land. Cochran et al. (2008) note that what may be most important in CBPR projects is *how* researchers acquire knowledge working with Indigenous communities, as these methods "may be as critical for eliminating health disparities as the actual knowledge that is gained about a particular health problem." (p.22). The process of respectful relationship building helps challenge power hierarchies shaped by past academic abuses and is integral to mending and co-creating health knowledge.

Medical anthropology has moved away from biomedical approaches of health towards a critical medical anthropology (CMA) over the years. Recent research is more reflexive of biomedical practices, moving away from viewing biomedicine (and western health systems) as an "objective adjudicator of truth and fact that is somehow removed from cultural influences" (Newnham et al., 2016, p. 2). Work within CMA takes a political ecology of health lens, where economic, political, social influences that shape locally contextualized health and disease outcomes – and particularly dimensions that shape health inequalities (Jackson & Neely, 2015; King, 2010; Mayer, 1996; Richmond et al., 2005). Still, there remains space to improve medical anthropological approaches through decolonization and CBPR approaches.

A crucial difference between CBPR and CMA approaches is the shape that fieldwork takes. For traditional fieldwork within CMA, anthropologists spend time trying to participate and learn from the communities they work with, acting as learners and participators. Anthropologists working within CBPR approaches want community members to be collaborators, learning how to conduct investigative work and participating in research-as-culture (Cartwright & Schow, 2016). Given the differences in the roles of community members and researchers between traditional fieldwork and CBPR research, this results in fundamentally different research designs, analyses, and outcomes as well.

Thinking of CBPR approaches as being complementary to traditional anthropological methods does a tremendous disservice to the "transformative logic" of CBPR (Watson, 2019, p. 23). CBPR approaches to medical anthropology research mean that the very process of fieldwork itself is subverted. Through "pursuing research within the context of action," a research project's methodologies and fieldwork will change, "most often in non-linear and unexpected ways, as much as the situation at hand" (Watson, 2019, p. 24). To use CBPR within medical anthropology is to use it as a theoretical lens to approach health research *with* a community. Working with Indigenous communities, this means centering the health concerns, priorities, and values that are brought forward by the community we intend to serve and embrace any changes in direction and interest along the way.

A way forward: Boundary work in medical anthropology

IK understands environmental wellness as inclusive of the people that inhabit it and sees degradative processes as manifesting in community health and wellness as well (Arquette et al., 2014). Given that we come at the construction of a community health assessment with two culturally different understandings of health, it is useful to explore these differences together through boundary work. Within collaborative research, boundary work serves to support and further legitimize marginalized knowledge, such as IK of health (Zurba et al., 2019). Boundary work supports knowledge sharing across traditional boundaries and enhances the co-creation of knowledge within research partnerships. This work can help translate research outcomes into on-the-ground action as well, such as implementing programming and services. The partnership between Six Nations Health Services and McMaster operates within boundary work as a way of brokering interactions between these knowledge systems that may not have worked in shared spaces prior. As stated earlier, the research process is just as important as the final products of collaborative partnerships. However, to our knowledge, these concepts have not been applied within anthropological frameworks.

By using CBPR and boundary approaches within medical anthropology, it shifts the very nature and shape of how this research is carried out. While our health research is informed by our approaches to health as medical anthropologists, it mainly operates by listening to how Six Nations stakeholders wish to conduct the research and assess their own community health status. Given the history of mistrust and abuse between anthropologists and Indigenous communities in the past, framing the discussions we had leading up to and during the co-creation of a health assessment is a useful exercise to better understand the nuanced power dynamics within our research partnership and work towards creating more equitable and culturally centered health knowledge together.

Creating safe health dialogues through boundary objects

Boundary objects are often simple to understand across different members of a research collaboration. They are also structured to work at the margins of communities in order to enhance communication and reach across these boundaries to those with differing perspectives (Sapsed & Salter, 2004). The success of the boundary object is not so much in its ability to bring consensus within a research community of practice, but in its effectiveness to create a space for discussion (Star, 2010). Through the three versions of the health survey over several years, many diverse perspectives and stakeholders were involved in conversations that contributed to the shape the survey took. More importantly, having a tangible document as a foundation for conversation allowed relationships to be built, and for them to grow and expand as trust and rapport was developed, and community concerns and needs shifted. With the history of unethical health research practiced on and not with Indigenous Peoples in Canada, having a boundary object helped to discuss the impacts and ripple effects of previous harm and dishonesty. Importantly, this allowed conversations to de-centre settler colonial perspectives and needs in favour of the concerns and priorities of Six Nations Health Services and community stakeholders on the project.

Zurba and colleagues (2019) argue that it is important to reflect on how the boundary object facilitates boundary work for those working within a research collaboration, but also to assess how to use a boundary object to communicate outwardly. In our case, when we reflect on the community health assessment tool as a boundary object, it created a dialogical space between Indigenous and non-Indigenous research collaborators during its co-development. During the time in which community members were recruited and the household health and water use survey was administered, it operated as a communicative foundation with Six Nations community members. As community work continues to expand and results of preliminary research are shared, the survey will still serve as a boundary object to converse with community members.

Challenges and barriers to co-creation

As co-creation is a process involving multiple voices and perspectives, we wanted to present a brief discussion of the challenges and struggles we faced, as these are a realistic component of the research process. There are several instances where community leaders and partners have been over-worked within Six Nations, and our research project was not a priority, or leaves of absence were taken in response to emerging health and wellness concerns. There are the practical issues of finances, multiple jobs, or being spread too thin as well. These are elements that are difficult to navigate from an institutional perspective for community collaborators as well.

As Ball (2014) points out, “in the bureaucracy of a postsecondary institution, the policies, procedures, and timing that govern matters such as travel advances, expense claim reimbursements, payroll timesheets, cheque disbursements, and food purchases can seem labyrinthine and protracted, even to the most conditioned employees” (p. 35). These slow-moving practical matters were particularly challenging for community members who worked as RAs, where there were bureaucratic delays or policies around processing their wages that were frustrating, particularly for those balancing multiple other jobs and roles in the community. At times this led to departure, with new community members joining the team. This starts the process of relationship and trust-building again, and also means providing more time and space for these newer members to catch up to the speed of the project.

It certainly takes time to build relationships, which is a crucial way of ensuring a more respectful and equitable working partnership. For the health team, establishing relationships with the community navigators who lead and suggest who to reach out to within Six Nations for participation is important. Understanding each other’s work ecologies and limitations (particularly as a graduate student researcher working with a community RA who holds multiple roles within both community and university) helps lay a working relationship foundation. And humour, above all, remains a good way of working through challenges and building relationships that will last beyond funding and research periods.

Institutional Barriers

Within this research project, McMaster and Six Nations collaborators moved in two different ways, similar to the Two Row Wampum. The university as an institution has elaborate self-regulating structures and is slow to change. On the community side there are more fluid movements: leadership, circumstances, goals, and needs can and have changed within shorter periods of time. Singular community events can lead to large changes to the research process and eventual outcomes and dissemination, which means as academic researchers it is important to stay open and flexible, on a journey of discovery rather than being determined to meet specific and timely outcomes. There also feels, at times, a pressure to have immediate outcomes from research that will lead to immediate social changes, rather than accepting that the tools and knowledge that come from this co-creation will take time and may be more ambiguous throughout the process than expected.

The McMaster research team itself has a wide array of knowledge, expertise, and backgrounds, so it can be difficult sometimes to harmonize our work or work at similar speeds. For example, the time-sensitive biological sampling tests of tap and well-water by the ecosystem health team were difficult to perform at the same time as a household visit to do the water use and household health survey. The water samples needed to be back to the McMaster lab within a short time frame, and household visits for the surveys took a much longer time, averaging an hour per home visit. When we made singular trips to a household, those who were able to work more quickly (testing tap water would take 15 minutes per home) at times felt frustrated when the conversations stemming from the health survey made for 45 minutes to hour-long visits per house. Navigating these details and how to create work that is respectful of participants' time as much as respectful of each other's time was a challenge and one that we continue to reassess as we progress with the research.

Within this ambiguity also lies important considerations for academic researchers interested in engaging in this research. Co-creation of knowledge means that collaborators need to be comfortable with high levels of ambiguity and rapid (or punctuated) shifts in needs and directions as led by the community. For more novice researchers such as graduate students, this can be a difficult (albeit fruitful) learning experience to develop more adaptable ways of understanding emergent details and directions while maintaining academic and degree requirements. Guidance from community navigators and senior scholars is quite useful in these instances to help students remain on track, particularly from Indigenous researchers, as they are more experienced working within and between two worlds that may sometimes conflict with one other.

Future Directions

This paper reflects on the process of relationship building and co-developing tools and knowledge, and the dissemination process has not been discussed. Sharing knowledge and disseminating tools is itself a huge effort, in part because of the different ways that we can share the information and knowledge that comes from these health assessments for different audiences. We plan to share this knowledge as stories (digital and oral), as toolkits, and in ways that are useful for Six Nations Health Services to build increasingly more autonomous and resilience programs and policies to prevent illness and promote cultural and physical healing. In ways, the sharing of this knowledge will lead to more partnerships and mobilization of community and global Indigenous collaborations. Already, we are seeing the project grow with more moving parts and expand into important new territories of knowledge and needs as we begin to share findings with the community and expand our networks in varied ways.

We believe this paper contributes to the work of decolonizing medical anthropology by demonstrating how the co-production of a boundary object (through the example of health surveys) assists in bridging cultural and social boundaries. Most importantly, the discussions (or boundary work) around the health survey over the past two years have been spaces of important and respectful dialogue around sensitive issues of community and personal health, historical and intergenerational trauma, water and environmental relationships, and spirituality. The tradition of anthropology, and within that, medical anthropology, has centered itself as "explaining, representing, and exploring the unfamiliar for over a century" (Cartwright & Schow, 2016, p. 137). If we are to continue exploring the unfamiliar, it is time for us to explore how we can build reciprocal, respectful relationships with the communities we work with, and explore the unfamiliarity of challenging conventional research structures and expectations.

It is important to assess the capacity for co-created research and work at the boundaries of cultural groups with a legacy of colonial power hierarchies. Ball (2014, p. 43) states that "In the expanded terrain of community-university engagement, risks are real and must, therefore, be carefully assessed. Before university-based and community partners venture onto the ice, they must be reasonably certain it is strong enough to withstand having holes drilled into it without risking lives." For our work on water quality and community health and resilience, this ice is much like the white rows of the *Kaswentha,* the river of life upon which our relationships are built and based in peace, strength, and a good mind. In times of challenges or emergent/divergent research orientations, coming back to this foundation helps to revitalize our strengths working in harmony as western and Indigenous researchers.

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Participatory Ethnographic Film: Video Advocacy and Engagement with Q'eqchi' Maya Medical Practitioners in Belize

James B. Waldram

Abstract There continues to be significant debate about what constitutes a "participatory ethnographic film." Contemporary standards for production require large budgets and sophisticated film crews, and as a result marginalizes those films produced at the local level designed to meet local needs. This article documents the process of creating a participatory ethnographic film at the behest of a group of Q'eqchi' Maya medical practitioners in Belize. From conception through to the approval of the final cut and distribution, the project was directed by the practitioners and executed on a shoestring budget and 'in kind' contributions. I argue that the genre of ethnographic film must accommodate local level aesthetic sensibilities about what constitutes a "good" representation of cultural issues, and consider the nature of the intended audience, thereby allowing space for a collaborative filmmaking process attendant to the world of the participants rather than that of international film festivals.

KeyWords participatory ethnographic film; Q'eqchi' Maya; Belize; ethnography

Ethnographic film these days is dominated by professional filmmakers, whose credentials as ethnographers may be a little suspect in many cases. Of course, ethnographic film has traditionally been the purview of well-trained filmmakers, and one need only recall the works of such pioneers as Tim Asch here. But filmmaking in the early years required extensive technical equipment, resources, and skills not readily accessible to most ethnographers let alone their participants. And the goal was the production of cinematic or TV quality documentaries or, at the very least, films that would find their way into the core curriculum of introductory anthropology classes. Classic ethnographic film was modeled on modernist anthropology, an effort to portray visually what otherwise was written in ethnographies; it was a positivist approach to describing a "culture" (Marks, 1995; Ruby, 1975). There was nothing particularly participatory or engaged about it, and the research participant's role was largely to act out (or at least be filmed engaging in) the ceremony, ritual, hunt, or other aspects of daily life as they would if the cameras were not present. As Jay Ruby (1975) points out, the cultural portrayals generated in this manner were highly subjective and contributed to stereotyping and essentialism. They were examples of primitivist discourse, Edward Said's Orientalism, and "othering,' which in retrospect told us more about the anthropologist and anthropological/

western concerns than it did the people at the other end of the lens (Borjan, 2013).

As anthropology entered its "crisis of representation" turn these issues rose to the fore, and culturally descriptive ethnographic films, sometimes including staged performances, gave way to a new approach which seemed more issue-oriented and more aesthetically vibrant, but less anthropological. I am not the first one to notice how anthropologists have been somewhat squeezed out of the ethnographic film enterprise, as indeed this process started some time ago. Back in 1998 Ruby offered a paper at the American Anthropological Association conference titled "The Death of Ethnographic Film" that argued that, "It is a genre constrained by marketplace…and dominated by filmmakers with no training or apparent interest in ethnography." There were exceptions to this, of course. The film series *Millenium: Tribal Wisdom and the Modern World* was created by Richard Meech, a Ph.D. in anthropology, and hosted by anthropologist David Maybury-Lewis, a founder of the engaged and activist organization Cultural Survival. Aired first in 1992, even this project was undertaken with an eye toward commercial success as well as a means of educating the public about the plight of many of the world's tribal peoples through poignant comparisons with westerners. Ethnographic film on that grand scale is invariably expensive, and the final product largely inaccessible to many of the people it portrays.

One response to issues of representation was the emergence of more participatory approaches, including the idea of providing the technology and training to people to allow them to tell their own stories (Gruber, 2016). The most famous of these is no doubt the project collaboration among anthropologists Sol Worth, John Adair, and members of the Navajo reservation, which culminated in a series of Navajo-controlled films and a monograph detailing the project (Worth & Adair, 1997). More typical was the production of ethnographic films involving varying degrees of collaboration in which the filmmaker retained a strong measure of control over the process and the final product and followed certain cinematic conventions (Henley, 2020). Today, the situation is potentially much different. The digital age has brought us relatively user-friendly equipment and editing software; the shift from film to video has been revolutionary (Pink, 2013), and some compelling video can even be shot on a smartphone! Yet, despite the YouTube age we are in, ethnographic film has remained largely the domain of professional filmmakers and production companies. One need only explore the credentials behind most films shown at "ethnographic" film festivals to appreciate that "amateurs" are not all that welcome. As an example, a perusal of the feature films for the 2019 Ethnographic Film festival of the Royal Anthropological Institute, arguably the most important such festival in the world, is almost completely lacking in references to ethnography, and promotes the work of professional – and in some cases, Oscar-nominated – filmmakers. Digging into the program one does find some anthropological involvement, but this is overshadowed by the Hollywoodization of the genre in general as exhibited at this festival. The idea that what makes a film ethnographic is a solid grounding in ethnographic research as a first step seems to have been lost (Henley, 2020).

Ethnographic film today is big business, the search for adequate funding is time-consuming, and anthropologists are cautioned about entering into partnerships with commercial documentary film companies to underwrite their projects (Jell-Bahlsen, 2003). Big festivals, like that of the Royal Anthropological Institute, or the Margaret Mead Documentary Film Festival of the American Museum of Natural History, and companies such as Documentary Ethnographic Resources—or DER—are emerging as the arbiters of what constitutes a quality ethnographic film. Other firms, such as Elemental Productions (owned by an anthropologist), tell us what a good ethnographic film should look like, and not surprisingly a lot like the ones that they produce (eg. Lemelson & Tucker, 2015). Most ethnographic films are made for a western audience to consume and are typically made on a for-profit basis. Western standards for performativity, cinematography, and narrative define the standards of success. Ethnographic accuracy is perhaps less important than producing a compelling story with some fabulous photography to back it up. But what if the standards for valuing the film are those of the subject participants themselves? More specifically, if we adopt a participatory action research approach, such as one defined by Jean Schensul and Margaret LeCompte (2016) and approach the participatory ethnographic film as an "emancipatory process that places actors affected by an issue at the heart of a research endeavor" (p. 332), then can we entertain alternative standards for judging the quality of research products, standards which are also defined by those very actors?

Accessible technology and software have led to an emergence of alt-ethnographic film based on a participatory model, and typically undertaken with limited funding and limited distribution. Professional anthropological filmmakers like Lemelson and Tucker (2015) can easily advocate for high levels of training and even collaborations with experts, arguing that,

> It is not enough simply to have a camera available, since the kinds of footage appropriate for data collection and analysis, shot by an often unsteady hand, poorly lit, poorly composed, and with inadequate audio levels, will not necessarily be compelling, or even usable, when attempts are made to transform this material either into full-length films or even shorter compositions edited for lecture, conference, or translational presentations (p.31).

Compelling for what audience? Does their approach not structurally detach the very participants of our research from the ability to be more actively involved in telling their own stories? If we are to seriously embrace famed ethnographic filmmaker Jean Rouch's call for a "shared anthropology," or, in more contemporary terms, a "visually engaged ethnography" (Bell, 2016), then we must share the filmmaking process. The world's marginalized people – the kind we often work with as anthropologists – do not have big film resources and, more importantly, may care little about producing a film about their plight that plays well in the art theatres of Santa Monica or the ethnographic film festival of the Royal Anthropological Association or the Margaret Mead Festival. What is "compelling" for them may involve values that are quite different from the aesthetic and cinematic values typically brought to bear in producing and assessing most contemporary ethnographic film undertaken for commercial purposes. What makes an ethnographic film "participatory," then, depends on the degree of meaningful participation, that is, moving beyond the subjects as actors to where the idea of the film, the topic, the contents, the imagery, and the intended audience are shaped if not defined by the participants themselves (Henley, 2020). Its foundation is in the robustness of relationships between the ethnographer and participants, and this cannot be established quickly.

I am not talking about ethnographic video recording solely for data collection; it is not Margaret Mead's camera-as-note-taker that she advocated many years ago (1963). Nor is this "ethnographic verité" filmmaking, where the subject is provoked "into revealing emotions and subtleties of unobservable culture" (Kahn, 2006, p.19). Such an approach, while valuable in some contexts, lends itself to the kinds of exotic voyeurism characteristic of ethnographic film festivals. Participatory ethnographic film is a means by which people – once our "participants" or "interlocutors" - can play an active role in the strategic production of a product that meets their goals and standards. It is filmmaking for their people that may have relevance beyond. It is collaborative by definition, with an appreciation that collaboration, contrary to what Ruby (1991) has suggested, does not require complete equality in all aspects of the filmmaking process; true collaboration is based on teamwork, with members of the team playing an equally important but often different role. In this article, I describe the unfolding process that leads to the production of one such film, and my role as a seasoned ethnographer but rookie filmmaker with no real budget, as I sought to honor the request of a group of Q'eqchi' medical practitioners for assistance.

Figure 1. Members of the Maya Healers Association of Belize, (l-r): Francisco Caal, Manuel Baki, Lorenzo Choc, Emilio Kal, Victor Cal, Manuel Choc, Tomas Caal

The Big Picture

I have been working with a group of Q'eqchi Maya *iloneleb',* or medical practitioners, in the Toledo District of southern Belize for more than fifteen years. The Q'eqchi' are one of three "Maya" groups in Belize (along with the Mopan and Yucatec). The Maya as a whole represent only ten percent of the total national population of some 340,000 people. However, in the southern Toledo District they constitute almost two-thirds of the population, with the Q'eqchi' in particular the largest Maya group at roughly half the district population. They live in many small villages throughout the district, some quite remote but others along highways, and also in the southern regional capital of Punta Gorda.

While the Spanish initially controlled the territory that would become Belize, in 1862 Britain claimed the territory and created British Honduras. In 1981, the colony was granted independence and became Belize. While the British presence lead to the use of English as the official language, Spanish remains an important second language in many of the Q'eqchi' villages in Toledo. Indeed, many Q'eqchi' trace their families to neighboring Guatemala, where they continue to have many relatives. There was a significant exodus of Q'eqchi' from Guatemala to the Toledo district during the violence of the Guatemalan civil conflicts in the 1970s and 1980s. Several of the *iloneleb'* are from the Petén province of Guatemala.

The eight *iloneleb'* with whom I have worked came together in 1999 to form an association, known initially as the "Q'eqchi' Healers Association," and subsequently the "Maya Healers Association of Belize," as a response to a declining interest among their people in the knowledge and practice of Q'eqchi' medicine (Waldram, Cal, & Maquin, 2009). I was initially contacted by them to research their medical practices, thanks to a former student who was doing some development work in Belize after Hurricane Iris in 2001. The practitioners had been involved in some research with botanists from Canada and Costa Rica, who were studying their plant medicines. However, they were concerned that such a narrow focus would lead to misunderstanding of the comprehensive and integrated nature of their medical practice, in which the use of botanicals, while important, was just one element.

The Q'eqchi' practitioner's continued interest in research is guided by several main concerns: their own people are being discouraged from pursuing traditional ways by church influence in the formal education system and aggressive tactics of US-based evangelical Christian churches; there are serious environmental threats to their way of life, including the medicinal plants that are central to their work; biomedical services in the southern part of Belize are still rudimentary, and they see an on-going need for their medical services; they have made few in-roads in attempting to work collaboratively with the government and its medical services branch; and they believe that their voices were not being heard as Belize worked to formulate a cultural policy for the nation.

The overall goal of the research is to understand the Q'eqchi' medical system and explain it to others. These others include not only government and medical people in Belize, but the broader scientific and medical worlds beyond Belize. But the *iloneleb'* also wish to speak to their people. They understand that the interest in their work by "scientists" helps to counteract the vigorous opposition of the churches; it is a means of validating their knowledge so their people will take notice. So, in a nutshell, they wish to talk to everyone who is not a Q'eqchi' medical practitioner and recognize that the means to do so lies, in part, with allies such as myself. They recognize that translation of their knowledge into terms, and languages, that others can understand is central to this task. They see biomedicine as their comparator, and a powerful one at that, and so they do not shy from comparisons but rather encourage them. Many medical anthropologists would reject an explicit use of western knowledge to frame the knowledge of Indigenous peoples, but this is precisely what these Q'eqchi' medical practitioners want. This is a pragmatic reading of the power-laden post-colonial context in which they live. The essence of participatory research, of course, is to honour—not criticize—the goals of research participants.

The entire research agenda is shaped by the *iloneleb'*, and over the years we have met regularly to discuss ideas for new directions to take our work. We have endeavored collaboratively to understand each other and slowly tease out a working model of Q'eqchi' medicine that can be translated to the world (Waldram 2020). To achieve this we have employed several different ethnographic methods, including interviews, observation, field walks, photovoice, clinical case analysis, and cognitive techniques like free lists and pile sorts. Part of my job has been to determine the best methods to achieve their goals, explain them and adapt as necessary, and employ them. The trust that has developed among us over the years is significant in that the *iloneleb'* have essentially deputized me to determine how best to undertake the research, and they have proven quite willing to wade adventurously into many data-gathering exercises that are very alien to them.

"The ideal arrangement," writes ethnographic film expert Karl Heider (2006), "is for the ethnographer to do the fieldwork first, complete the analysis and writing, and then return to the scene with a film-maker to shoot a film that has been carefully thought out based on the written work" (p. 112). As Heider (2006) encourages, many scholarly articles, a book, and public-oriented materials have been produced so far from our research, providing both description and analysis of the extensive data set that has accrued. I never planned to get into filmmaking, however.

Figure 2. Film planning meeting, (l-r): Augustino Sho, Manuel Choc, Tomas Caal, Francisco Caal, James Waldram, Manuel Baki

The Film-Making Process

It was at one of our meetings that the practitioners mentioned that they would like me to make a film that would show the work they do and be distributed widely. Needless to say, I was very surprised by this request, as none of them have televisions and most lack electricity, and there is no cinema in their region. Yet they had enough experience and foresight to understand the potential power of this medium. Despite never having made a film, I agreed to help them. We talked at length about the point of the film, what it would – and could - show and what it would argue. We sought guidance through ceremony, in which those practitioners trained as *Guia Espiritual Maya* (Maya spiritual specialists) along with some others from nearby communities, prayed to *Qaawa'* ("God") for assistance in ensuring the well-being of all participants and the insight necessary to produce the stories of the *iloneleb'* respectfully and accurately. We had several meetings to refine ideas about content and work through potential problems in translating their medical work to film. For instance, when I suggested that the film would have to show some medical practices if it was to have any persuasive force at all – since viewers would most assuredly want to see this — there was considerable discussion about how this could be done since it seemed somewhat inappropriate to them to ask patients to allow filming. Their idea, with which they excitedly engaged, was to demonstrate procedures on each other's family members, simulations if you will, which, in the end, turned out to be real treatments!

When we discussed the target audience for the film, they determined that, first and foremost, they wanted to talk to their people, and then the government and medical establishment. Therefore, the film should be in their language. But when they realized that few non-Q'eqchi' would be able to understand such a film, people such as government policy-makers and the medical establishment, I explained the idea of English sub-titles, which reassured them.

Figure 3. Preparing for ceremony to seek support for the film project

I returned to Canada to work on a script, pulling together the *iloneleb'* ideas and adding my own from the many hours of research interviews and participant-observation. I had many hours of video recorded already—the "research" video that those critics previously mentioned would suggest is inadequate for an ethnographic film—but the additional video was needed that was focused more directly on this project. Several trips back to Belize to workshop the script ensued before we were able to start shooting actual footage. And of course, once shooting began, the script needed to be rewritten several times. Throughout this process, I was aided by Q'eqchi' language and cultural expert, Tomas Caal. Tomas is one of the practitioner's sons and has deep knowledge about Q'eqchi' culture and medical practices, as well as important ethical sensibilities on the form and appropriateness of the representations we would document. While I did not replay footage to the practitioners during the production phase to get their feedback —what Jean Rouch has referred to as audio-visual reciprocity—Tomas was with me every step of the way as their representative. He was there during all the filming; he reviewed the clips and together we selected the ones to use. It is his voice that you hear narrating the film in Q'eqchi'. Frankly, this aspect of film production was one in which the *iloneleb'* had no interest in participating.

Several components were developed for the film. The *iloneleb'* sat for interviews about their work, often repeating information that they had previously provided in research-oriented interviews. They also demonstrated various treatment techniques, for both video and still shooting. Treatment sessions were recorded. And a variety of informative "B roll" video was taken to provide context, with the *iloneleb'* frequently suggesting what scenes should be filmed.

It was a most interesting process for us all once the filming began. Effectively, there were only three of us involved; I operated the camera, lights, and sound, and directed each scene, feeding the interview questions or acting directions to my Q'eqchi' colleague for

Figure 4. Filming an interview, (l-r): James Waldram, Tomas Caal, Francisco Caal

translation. Tomas then worked to explain it all to the *iloenelb'*, translate back to me, and offer invaluable advice as to what would or would not be appropriate to ask the *iloneleb'* to talk about or do. The third person was my graduate student, who admirably carried out the role of gofer and animal rustler (chickens, pigs, and dogs often wandered into the shoots). The *iloneleb'* were occasionally impatient while I fiddled with the camera, the lighting, or the microphone and audio levels, or requested that they reposition themselves or their patients to get a better angle or more suitable lighting (lighting in the houses was extremely variable). Sometimes they would start a treatment before I was ready, requiring me to interrupt them and ask them to restart. When I requested retakes and other changes they always complied.

Figure 5. *Ilonel* Lorenzo Choc reading the pulse of a patient (still taken from the film)

We did try to have the *iloneleb'* dramatize certain aspects of the treatment process that we could not otherwise easily capture. For instance, we had one practitioner pretend to be a local villager to demonstrate the process of approaching an *iloneb'* to ask for help. They had trouble pretending and kept bursting into laughter in the middle of the scenes. When we finally had a complete scene recorded without interruption, I asked how "real" the encounter was. They started laughing again. We did not use these scenes.

As I noted, the treatment sessions that we recorded turned out to be real after all. We were not long into the process when I began to suspect that these were not "simulations." There is no difference between these and any other treatment sessions that I have witnessed. Each "patient" was a family member of another *iloneleb'* being treated for a real problem. As I learned, the idea of pretending to treat a patient was nonsensical; it could not be different from an actual treatment, and an actual treatment absolutely could not be undertaken with a non-suffering actor due to the inherent dangers to both practitioner and "patient." Further, pretending to treat represents a violation of the ethical code of conduct of the MHA and puts one at risk of being labeled a charlatan who convinces patients that they have a disorder to charge exorbitantly to treat it.

There were many complications, of course. Due to the high humidity, the camera lens would often steam up when I removed the cap, and take a half-hour or so to clear. The camera would sometimes over-heat, stopping filming while I took it apart and attempted to cool it down. The humidity and heat also seemed to combine at times to thwart my attempts to maintain camera focus. Chickens and other animals often appeared during the filming of treatment sessions, squawking into the microphone which was usually placed on the floor in a coffee cup (I did not have a boom). Some of the homes were so poorly lit that at times even with my portable lights the video remained

Figure 6. The recording studio

dark and murky. Noise was ubiquitous. Many homes were built next to highways and roads, yet even the most remote villages proved to be very noisy for filming. Gas-powered machines of all types, from weed whackers to old rumbling trucks, forced us to constantly stop and restart interviews. Family members were always present, going about their daily chores (the slapping sound of tortillas being made is surprisingly loud!). Children were very interested in the camera and what we were doing, and would often walk into the frame to stare at us, or climb on their father's knee during the shooting of an interview. This is the Q'eqchi' way of filmmaking—Q'eqchi' cinema verité if you will. You do not create an artificial context for purportedly showing reality, even if that will lead to a more cinematic final product.

The script was recorded by my Q'eqchi' colleague Tomas in an abandoned radio shack in a small village, the only place we could find with a semblance of sound control due to some simple acoustic renovations to the broadcast studio (the tropical forest being a remarkably noisy place!). A local contact found us some of the old station equipment, a microphone, and a simple mixing board, and a villager with some experience to operate it all. The script, written initially in English by me and then translated into Q'eqchi' by Tomas, was pinned, page by page, to the wall of the studio where Tomas could easily see it while speaking into the microphone. We did two or three takes of each passage, consisting often of only one or two sentences at a time. Despite the stifling hot temperatures inside the shack – which we had to keep closed up during recording – we managed to record both Q'eqchi' and English tracks (keeping open the possibility of an English language version of the film).

Figure 7. Tomas Caal recording the narration from script

Tomas and I took the recorded video footage and the audio and painstakingly matched the Q'eqchi' narration to the appropriate scenes, then confirmed the scene's English translation in preparation for the subtitles. I then returned to Canada, where I worked with the audio-visual unit at my university for post-production. I was well aware that film editing is a sophisticated technical process and that I would not develop sufficient expertise in a reasonable time to do this film justice. Using Final Cut Pro, the film editor and I put the video, stills, and audio narration together to produce a rough cut. The initial running time was about one hour and twenty minutes, far to long for our purposes. Ruthlessly cutting scenes we were able to reduce it to just under an hour.

I took the rough cut back to Belize to show the *iloneleb'*, seeking their feedback and approval to move forward to the next step of producing a final cut. The only place we could find that was capable of showing the film was a rural bar with a karaoke set-up; we did our work in the morning before it opened at noon. I started the session by explaining what they would see and what issues I felt might still need to be addressed, and then I showed them the rough cut. As they watched with stony, expressionless faces, I became increasingly worried that they did not like it. I had tried to make an aesthetically pleasing film, but Q'eqchi' aesthetics are different, I learned. The film ended. No applause (I learned that clapping one's hands together is not a common way of showing favour). Just quiet.

We moved over to a table and opened a discussion about the film. No one commented on the aesthetics, the artful scene transitions, the soundtrack, the unfolding compelling narrative. They were concerned with the accuracy of the presentation, and whether or not the film would help them achieve their goals. Did I get it "right" from their perspective? They had several very concrete suggestions to amend the film, mostly some inclusions (such as showing more treatment paraphernalia because the police kept rousting them on suspicion that their technological items and plant medicines were somehow illegal). After the meeting, when I asked a Q'eqchi' colleague if they liked the film, because I could not tell, he responded with an emphatic "Oh yes!"

Figure 8. Members of the Maya Healers Association viewing the rough cut

Figure 9. Post-viewing discussion of rough cut

I returned to Canada to undertake the final editing process, honouring the suggestions from the group, then found a Belize company to produce several hundred copies of the film for free distribution in the country. We titled the film *Kawil Poyanam, Chaab'il Yu'am: Eb' Laj Ilonel Re B'elis,"* or "Healthy People, Beautiful Life: Maya Healers of Belize." I then traveled to southern Belize, where we celebrated the film's "world" premiere showing with the *iloneleb'* and their families in the same bar. Again, the audience showed little enthusiasm save for the end when one of the practitioners appeared playing his homemade fiddle while the credits rolled, and everyone laughed. The children seemed a little bored even though their fathers, mothers, and other family members were on TV. But in the end, there were smiles, followed by a feast and dancing. I was now certain that the film had met their expectations. I had got it "right."

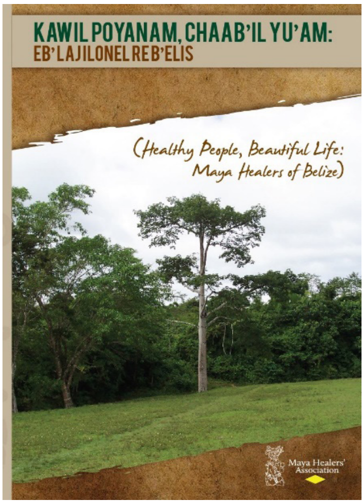

Figure 10. DVD cover, showing the sacred ceiba tree, symbol of the universe

Conclusion

The definition of an "ethnographic" film, versus a documentary, remains somewhat contentious, but as Ruby (1975) argues, emulating an ethnography is key. This means there should be some kind of engagement with anthropological theory beyond the case portrayed. But this, of course, is representative of the modernist tradition of the time when he was writing, and did not anticipate what would become known as participatory ethnographic film. Indeed, it is hard to find a place between the ethnographic-documentary poles for participatory ethnographic film. This would be a place where the partnership between an anthropologist and a community does not aim to be explicitly anthropological nor contribute directly to theory, nor aim to be a commercial success, and yet strives more for accurate rather than exotic cultural representation following participant epistemological aesthetics.

A participatory ethnographic film can be defined by the active role of the participants in the portrayal of the 'culture" on screen, with varying degrees of input and control from conceptualization to decisions where and to whom the film is intended to be shown. This can be an intense process. It would not be an understatement to say that none of us involved in the making of the film had any clue at the outset about how to do it. But at every step of the way we worked collaboratively to ensure that the film would meet the standards of the participants – the *iloneleb'* – even though at times what those standards were was not always evident because, frankly, they had never thought about how to portray their work cinematographically. What mattered to them was the accuracy of the message, and a Q'eqchi' message at that, one communicated in their language and their manner according to their cultural sensibilities understood and contextualized by their ultimate goal of educating others. The medium of film was simply the conduit to deliver that message. The form of the film was certainly a product of my doing, as they had no idea what such a film should look like, or how it should be put together to promote their message. In this sense, it can be criticized as representing a western cinematic form (although I had no training in that form) (Borjan, 2013; Henley, 2020). The film is linear, with clear episodes following (to me) a logical unfolding of the issues. But the content was theirs, a product of our many years of working together in the context of research as well as focused efforts to determine what should be in the film's message. This is a lesson of participatory filmmakers whose works are shaped significantly by non-Hollywood style aesthetic concerns (Flores, 2004*)*. The film may not meet the production standards for the big international ethnographic film festivals, but it does meet the standards of the participants, and those standards come first in participatory work. The film remains freely available on Vimeo, Facebook, and YouTube, where it has been viewed over a thousand times so far and is now being used to educate government and medical staff. It is playing in schools, colleges, and village community centres throughout southern Belize. I realize that the right standards were honoured. I am happy that the film has also found its way into North American university courses.

In 2013, ethnographic filmmaker and critic Jay Ruby wrote that,

> New anthrofilmmakers seem uninterested in considering the question of how films communicate so that they might select the best cinematic style to convey their insights. They are afraid to take the chance of doing something stylistically different …. The digital revolution has not thus far produced an anthrofilm avant garde but rather an anthrofilm that is more and more retardataire [para 10].

Perhaps it will be the participatory ethnographic film that will represent this avant-garde, one that shifts the aesthetic standards to those of the people with whom we work and who have much at stake in the film's production, rather than those of the people who only consume. To once again return to Jean Rouch, I conclude with his observation that "This type of totally participatory research, as idealistic as it may seem, appears to me to be the only morally and scientifically feasible anthropological attitude today" (Rouch, 1973, pp. 11-12). Somewhat ironically, Rouch failed to live up to this mantra in his work (Gruber, 2016). However, we are in a new era, brought on by video technology, globalization, and decolonization, in which ethnographic film has become an important means by which peoples around the world can control the public image of their culture and the message they wish to communicate, a new wave concerned more with how film plays out among their peoples or in the hallways of power where decisions affecting them are made. It is a response to the elitism of contemporary ethnographic film, with its western aesthetics and Hollywood production values and budgets. It is a field rich for engaged research and collaboration.

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Reports from the Field

Reconnecting through Urban Agriculture: A Community Engaged Video Ethnography in Winnipeg

Evan Bowness, Natalie Baird, Avery Hallberg, Mark Packulak, and Students from Sociology 3460 (2018) class

Abstract While contemporary urban life in many ways seems disconnected from nature, the practice of urban agriculture —growing food in and around cities — is often pointed to as a source of well-being through connection to the land. In addition to providing access to healthy food and providing a means for increased physical activity, urban agriculture boasts several positive experiences for participants. Reporting from an intensive, community-based ethnographic research project in Winnipeg, Manitoba, students and course organizers of the University of Manitoba's "Applied Visual Methods in Community-Based Sociology" course explored urban agriculture as a source of well-being through the lens of disconnection and reconnection. During the course, eight students from different disciplinary backgrounds conducted participatory observation and interviews in five community garden sites. The results of the research were developed in a group paper and presented in a short video. This report from the field shares the methodology of short-term ethnographic video as a means of both engaged scholarship through the principle of reciprocity and as a vehicle for exploring urban agriculture (and other food movement activities) as a pathway to well-being by reconnecting to land, to food, and to the community.

KeyWords urban agriculture; video ethnography; community-engaged learning, reciprocity; urban reconnection

Learning about Urban Agriculture through a Community-Based Visual Sociology Course

This report from the field describes a community-based learning experience during a 2018 summer institute on visual sociology and urban agriculture at the University of Manitoba (SOC 3460: Applied Visual Methods in Community-Based Sociology). Urban agriculture is something of a buzzword in academic literature and among environmental movements in Canada – and the discourse is (mostly) positive. This diverse practice of growing food in cities changes landscapes, builds skills, enables physical activity and leisure, and provides fresh local food, leading to an array of socio-cultural, environmental, economic, and health outcomes (Santo, Palmer, & Kim, 2016). Whether a community garden or an urban farm, urban agriculture sites provide spaces to gather, encourage civic engagement with the food system, and promote community and individual well-being.

Research Details

We visited and conducted interviews at the following five distinct agriculture sites.

Sustainable South Osborne	Spence Neighbourhood Association	Fort Whyte Alive	University of Manitoba	Harvest Moon
• A network of urban food production spaces, containing approximately 1.5 hectares of food forests and community gardens located in the southern suburban neighborhoods of Lord Roberts and Riverview • Interviewed: Rod Kueneman, Vice President (Programming) of SSO	• 12 separate community gardens in Winnipeg's West End, a dense urban mixed-income neighborhood • Interviewed: Natalie James (Environment and Open Spaces Coordinator), Mavis Saunders and Son Cha (Gardeners / Volunteers).	• A peri-urban working farm located in an environmental education center located on 640 acres of protected land • Two acres under production in a mixed vegetable and animal operation Interviewed: Danielle Mondor (Farm Manager) and Dipen Patel (Volunteer)	• The province's largest university, historically an agricultural campus • Interviewed: Eliana Hotz (Coordinator of the UManitoba Campus Food Strategy Group), Ryan Woods (manager of Degrees Restaurant, a campus restaurant with outdoor garden located in the University Centre) and Madeline Beauvais (Steward at the Permaculture Learning Garden, a small demonstration garden)	• Located in Clearwater MB. • Organization that connects urban and rural people through workshops, events, courses and a music festival • Interviewed: Carissa Quadfass (neighbour and organizer)

Figure 1. Description of field sites

Winnipeg has several urban agriculture organizations and related local food initiatives. Over two weeks, our team of eight students (including Hallberg and Packulak), along with course assistant (Baird) and instructor (Bowness), visited five of them – four inside the city of Winnipeg and one in the rural town of Clearwater, Manitoba about 200 km away (see Figure 1). Using a semi-structured interview schedule, we video interviewed participants (n=10) who reflected on their experiences growing food in cities.Students in the course produced an ethnographic video and class paper reporting on their findings, which became the basis for this report from the field. They titled the video *Reconnecting to Land, Food and Community*. The video highlighted the core themes discovered through the research process as relating to well-being, noting that growing food in cities supports experiences of well-being by reversing the experiences of disconnection in contemporary urban life.

Methodology

As a six-week-long summer institute introducing students to ethnographic methods, two of which happen (literally) in the field, this course offers an example of what Sarah Pink and Jennie Morgan (2013) call "short-term ethnography" (see Figure 2). This approach is very well-suited to intensive and visually-supplemented fieldwork. Ethnographic research involves undertaking a qualitative, in-depth inquiry using different forms of observation of people in their social

Figure 2. Students and course organizers in Sociology 3460 class

context. Ethnographers are tasked with telling "the story of how people, through collaborative and indirectly interdependent behaviour, create the ongoing character of particular social places and practices" (Katz, 1997, cited in Shrum & Scott, 2016). Ethnographic video-making, an emerging methodology within the fields of anthropology and sociology, uses video documentation as a means of exploring these places and practices through a visual medium (Shrum & Scott, 2016). This approach allows the viewer to experience the social context in ways that text alone cannot by adding a visual component to traditional ethnographic methods. The data collection tools that we used during site visits included participant observation with fieldnote taking and qualitative interviews, which were video-recorded.

What makes short-term ethnography different from 'quick and dirty' ethnography — disparaged by both qualitative and quantitative researchers — is its intensity. Pink and Morgan (2013) outline three distinct types of intensity in ethnographic research: "…of the research encounters themselves; of the ethnographic-theoretical dialog; and of the post-fieldwork engagements with materials" (p. 359). They argue that you can arrive at valid interpretations of the research context in a reduced amount of time so long as the intensity is high.

Intensive field visits

The first type of intensity in short-term ethnography comes from the nature of data collection while in the field, that is, from processes or methods that help researchers make a note of essential details. Video interviews are intensive research experiences. People rarely enjoy speaking with several cameras pointed at them, along with lighting gear, audio equipment, and multiple note-takers. This could be described as an intensive research experience from the perspective of the interview participant. To give students an idea of what participants would experience, students conducted mock-interviews taking the roles of both interviewer and interviewee during preparation for the field visits. The exposure gave students an added sense of respect for the contributions made by research participants, and made it all the more critical that the interviews were conducted efficiently. Before or after the interviews, students also engaged in another intensive data gathering experience while working in the gardens alongside participants. This allowed for more intensive sensory experiences that come along with the practice of growing food. Finally, the structure of the course was one of intensity in terms of time. It packed a full course that would usually span eight months into two weeks, where students spent whole days together with research participants before returning to class to reflect on the day's activities. Overall, the insights gained through the course were the result of an intensive learning environment and experience.

This course project is community-based in the sense that the research participants are members of community organizations, and the research took place 'in the community.' But what moved the experience from community-based to community-engaged was that we designed elements of reciprocity into the research process, which also increased its intensity. Reciprocal relationships were central to each phase of the research design, including planning, project initiation, data collection, and dissemination. Maiter and colleagues (2008) define reciprocity as an "ongoing process of exchange with the aim of establishing and maintaining equality between parties," where interchange is central to ethical practice of community-based research (p. 321). Reciprocity is a crucial principle of engaged scholarship, where sharing knowledge and resources are "at the heart" of producing sustainable and mutually beneficial outcomes that bridge gaps between the university and civil society (Beaulieu, Breton, & Brousselle, 2018).

The foundation of the community-engaged short-term ethnography course drew from relationships that already existed between course organizers and the local urban agriculture community. Participants thus provided input in the research design, especially for planning the site visits. During the visits, while students gathered information, they also offered garden labour in exchange for community members' time and knowledge and their willingness to speak on-camera. This mutually beneficial exchange is especially useful in the context of community urban agriculture sites, where there's always work to do and where the best way to learn is by doing. Community members were keen to put students to work in hands-on activities such as weeding, hauling water, and preparing food. It was mostly through these experiential activities that students were able to capture essential elements of the research context to provide rich interpretations of participant experience. For many students, this was their first experience in a community garden, and this experience is essential to understanding what the participants had to say. But reciprocity was meant to extend beyond the site visits, in that the video produced as a final course output was intended to be meaningful for the participants who contributed to it.

Intensive post-fieldwork engagement

A second type of intensity in short-term ethnography stems from the nature of post-fieldwork engagement with the materials collected. Pink and Morgan argue that visuals help to increase the power of reviewing data, and thus help in making inferences based upon them. For students, visual data in the form of the video footage shot on-site and also though their fieldnotes were supplemented through photo-voice reflections (Nykiforuk, Vallianatos, & Nieuwendyk, 2011). As the interviews were video-recorded to produce a video, the interviews were reviewed not only for content but also for visual elements. A personal lapel microphone recorded each participant, as well as a camera-mounted microphone for back-up audio and ambient sound. Each participant was filmed by two to three cameras set at different angles. Additional footage — known as B-roll — of garden and farm activities was captured by digital video cameras and a GoPro camera. Capturing many angles during the interview as well as B-roll footage was necessary for editing the video. Following each day of shooting, students catalogued the video files and organized them by content and technical quality. Each interview was transcribed with time-stamps and then coded using NVivo software. The codes were reported in the group paper and a group video, which was then screened for participants before finalizing it and sharing it online.

Intensive theoretical engagement

A final type of intensity in short-term ethnography refers to the interaction between the concrete observations made in the field and abstract ideas. As a sociology course, students engaged with sociological theories of social movements, referring to concepts related to collective identity, social networks, and collective action frames. Through long days in the field, making observations in conversation with course participants coupled with readings, discussions, and photovoice reflections, "well-being" emerged as a central theme in the data. Students began to see urban agriculture as social practice connecting social movement participants and broader communities of people in diverse processes of *reconnection as a process of being well.* Anthropological perspectives on well-being recognize that happiness, contentment, and satisfaction with one's life situation are subjective experiences that are also contextually specific and multifaceted. From this perspective, "well-being connotes being well psychologically, physically, and socioeconomically, and culturally: It is all of these things working together" (Mathews & Izquierdo, 2009, p. 3). The anthropological study of well-being usually involves ethnographic accounts of participant experiences which show well-being to be a relational concept, in that it is defined in relation to both the sources of well-being and states of being unwell. As the results of the video would show, the students engaged in an in-depth reflection on how participants experienced the concept of "well-being" through urban agriculture.

Results: Reconnecting through Urban Agriculture

Participants shared a sentiment that people today have lost a connection to essential elements of social life and pointed to the nature of cities as the source of this disconnection. The list of theoretical concepts characterizing this link in the anthropological and sociological canon is long and deep (for example, using the classic theories of alienation and anomie). These concepts point to Western societies' histories and how, through industrialization and urbanization, people have detached from their agrarian roots. As one participant notes: "We have a generational break where most people don't know how to grow their food. They don't even know what a good tomato tastes like." This participant went on to further say that people are not only disconnected from the practices of growing food and identifying quality food, but also from the knowledge of how industrial food is grown. They noted that people don't realize how much "poison" (agri-chemicals such as synthetically manufactured herbicides, fungicides, or pesticides) gets applied to vegetables grown conventionally. Also common among participants was a general sentiment that living in cities causes a disconnection from other people in the community, with fewer face-to-face and ongoing interactions. As one participant noted, people "are working one and a half jobs or working overtime. They have kids that are, you know they're driving them off to soccer and baseball and ballet and whatever. But, they don't really have that much time to get embedded in the community." Another participant noted, "There [are] a lot of conversations about the subversive nature of agriculture, I think, in cities. And it is subversive in cities. The people are looking for a connection with their land, with food. So, I definitely feel like there's a collective desire for change." Participants generally saw urban people as being disconnected from the process by which the food that sustains them is grown, and this noted as a source of being unwell in cities.

While participants saw urban life and contemporary urban food systems as characterized by a disconnection from land, food, and community, they also shared with students how urban agriculture provides a way to 'reconnect' to what they felt was lost in cities. Through the experience of reconnecting to food-growing lands, to the process of growing and eating high-quality and healthy food, and to other people in food-growing places, urban agriculture offers a source of well-being. As one participant noted, "Food is everything. It's not only nourishing our bodies, it is sharing the table, it's a place to build community." Others noted how spending time on food-growing land is a source of physical well-being, how a sense of satisfaction can derive through producing one's food, and how "these green spaces are really important for the mental health of our community." Participants also noted how these positive experiences extend to others as participants share them, with one participant saying, "It's really inspiring to see youth engaging in a way that was so transformative when they stuck their hands in the soil. So, youth are then able to take care of their environment or themselves or their community and then can grow to be teachers and mentors in that community as well."

Conclusion: Community-Based Video Ethnography, Urban Agriculture and Well-being

Research participants saw urban life in terms of disconnection from nature, healthy food, and close-knit community ties. In contrast, they felt that urban agriculture provided possibilities for new forms of social interaction and connection. This was done by offering a space for people in cities to interact with nature, with the land and natural processes, and with each other by experiencing cultural practices and traditions, learning to cook with different ingredients, and increasing consumption of healthy and fresh food. Overall, this report reaffirms what many are already saying about urban agriculture –those who can participate in it find it to be a positive experience that provides a space to experience well-being. The intensive summer institute, "Applied Visual Methods in Community-Based Sociology," provided students with a set of skills for learning about urban agriculture as a social activity with various effects. The methodological and pedagogical approach of the course, as a community-engaged, experiential research project organized around the principle of reciprocity, proved to be a useful model for ethnographically exploring well-being. It also shows that courses structured in this way can effectively teach skills and produce community benefits and research results in a short timeframe.

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Inuusinni Aqqusaaqtara – My Journey: Meeting the Information Needs of Inuit Living with Cancer

Savanah Ashton, Tracy Torchetti

Abstract The Inuit Cancer Project aims to help Inuit better understand cancer and improve communication between Inuit with cancer and non-Inuit healthcare providers and support services. The project has created resources that are culturally relevant, appropriate, and accessible to Inuit patients and the healthcare providers working with them. Not only are we helping to educate and empower Inuit patients and their families, but also better educating healthcare providers around the importance of cultural knowledge in cancer care. Our ultimate goal is to improve health outcomes by increasing awareness and understanding of cancer among Inuit communities. This project is a collaboration between Pauktuutit Inuit Women of Canada and the Canadian Cancer Society. It highlights how partnerships with organizations, both big and small, and connected with the community, can have a real impact.

KeyWords Inuit; Inuktut language; community health; cancer care; patient resources

The Inuit Cancer Project aims to help Inuit better understand cancer and improve communication between Inuit with cancer and non-Inuit doctors and support services. This five-year project is a collaboration between Pauktuutit Inuit Women of Canada (Pauktuutit) and the Canadian Cancer Society (CCS) that began in 2015.

Our partnership pairs CCS's expertise in developing accurate, evidence-based, and easy-to-understand cancer information with Pauktuutit's expertise in community-based research and dissemination. It is an initiative that highlights how important partnerships between different organizations can collaborate to guide community-rooted projects.

As a result of this partnership, we have created a suite of resources that are accurate, culturally appropriate, and accessible to Inuit patients and the healthcare providers working with them. In phase one of the project (before CCS became a formal partner), Pauktuutit conducted focus groups with Inuit communities and experts. This research and engagement included knowledge gathering to ensure that the resources and tools were appropriately informed by Inuit culture, language and lived experience, and involved engaging and working with cultural and linguistic experts and cancer terminology content experts. This ultimately led to the production of the Kaggutiq Inuit Cancer Glossary, in English and five dialects of Inuktut. In phase two, Pauktuutit and CCS focused on the further dissemination of cancer information to Inuit. We developed a book called *Inuusinni Aqqusaaqtara – My Journey*, a resource for those who must travel to major centres for tests and cancer treatments. Accompanying e-learning modules are also being created to help cancer patients, their families, and service providers understand and use the content.

Why the project matters

The cancer death rate among Inuit is high, and we want to change this.

Many factors contribute to high cancer rates among Inuit, including tobacco and alcohol use, poor diet, and physical inactivity. Furthermore, when available information is not culturally or linguistically appropriate, low cancer awareness and limited access to cancer information are also contributing factors. A lack of accessible information can prevent people from getting regular health checkups, can lead to a misunderstanding of diagnosis and treatment plans, and often means people wait to visit their doctor until they are very sick. This means culturally appropriate cancer information needs to be in a language and dialect that the patient understands (e.g. Inuktut, Inuinnaqtun, Inuvialuktun), include terms and concepts relevant to Inuit (e.g. family, country food, connection with the land, Inuit Nunangat), and contain imagery that would resonate with patients and their families. This project did just that by uniting cancer experts, Inuit, and Inuit-represented organizations to ensure the tools and resources were created by and for Inuit.

Historically, Inuit have also viewed cancer as a death sentence, largely due to poor and inaccurate translations. This, among many other reasons, has led to people not seeking treatment for treatable cancers.

A better understanding of cancer can reduce fear and empower Inuit to seek healthcare services sooner and more frequently. Often, early diagnosis and treatment means a better chance of survival. Building knowledge will help to empower not only the people with cancer but also their families and friends who want to offer support. Improved health literacy — for patients and healthcare providers — results in fewer misunderstandings and a better quality of care. By empowering Inuit with more knowledge, we hope to reduce fear and increase the likelihood that Inuit will see healthcare providers early. Ultimately, this can reduce mortality rates and improve the quality of life for Inuit living with cancer.

About Pauktuutit Inuit Women of Canada

Pauktuutit Inuit Women of Canada was incorporated in 1984 to act as the national representative organization of Inuit women in Canada. Pauktuutit addresses a range of social and health issues experienced across the 51 communities of the Canadian Arctic, along with that of Inuit in urban centres. Pauktuutit's work on health is also intended to influence policy and program development to better meet the needs of Inuit women and their families, partly by developing plain language bilingual information resources for individuals, front-line workers, and healthcare providers. We use a population health approach with a holistic view to address the social determinants of health, with language, culture, and gender as central considerations.

Pauktuutit considers the unique needs and priorities of women, men, elders, and youth in its policy and project initiatives. Our work on health issues is unique in that it seeks advice from Inuit subject matter experts and other partners through advisory committees to its projects. The resources are intended for use or modification by all Inuit communities and, whenever possible, translated into several dialects of Inuktut. Pauktuutit's health projects have addressed both the need for relevant bilingual health information and resources in the communities, as well as the need to build community capacity to deliver workshops and hold other events locally through train-the-trainer projects. Community health workers have told Pauktuutit that the Inuit-specific resources, and the support that they provide, give them the confidence to use the materials in their communities. We are recognized among Inuit as a credible source of health information that is more likely to be used than products produced by provincial and federal governments. The outcomes of these projects also provide strategic policy advice to the federal government on priorities and appropriate interventions.

Pauktuutit widely distributes its products to health centres and front-line health workers, land claims organizations, regional health boards, government partners, and other stakeholders. Our work is also widely promoted through conferences and other public events.

About the Canadian Cancer Society

The Canadian Cancer Society is a national, community-based organization of volunteers whose mission is to eradicate cancer and enhance the quality of life of people living with cancer. CCS is highly regarded for its cancer information resources and support programs. The goal is to provide highly credible and reliable cancer information through varied modalities and to increase the reach of programs using a person-centered and health literate approach.

A unique national infrastructure underpins the operations of information and support services. A combination of online, in-person, and telephone-based services seek to wrap around people diagnosed with cancer and their caregivers to provide barrier-free access to evidence-based and reliable information about cancer and support interventions.

CCS is committed to better understanding disparities faced by communities in accessing health information and support and to working with communities to understand how CCS products and services can be tailored or adapted to help address unmet needs. The partnership between CCS and Pauktuutit is one way to achieve this.

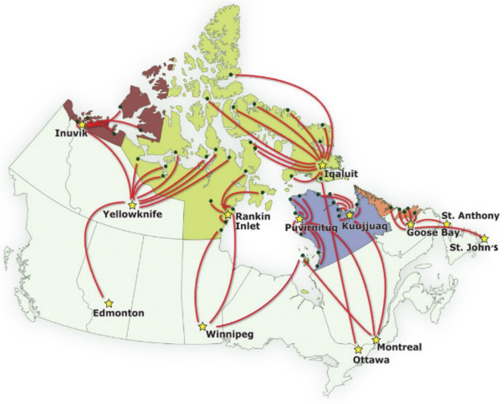


Figure 1. Map showing the great distances patients travel for care into urban centres in southern Canada

Inuit in Canada

Inuit are culturally, historically, and linguistically distinct from other Indigenous Peoples. There are approximately 65,000 Inuit in Canada, most of whom live in 51 communities across the North, along with a growing urban population. With a median age of only 23, Inuit are the youngest and fastest-growing population in Canada. Over the last one hundred years, Inuit have endured rapid colonization, shifting from a nomadic lifestyle to living in permanent settlements in only two generations. Various policies put in place to exercise control over Inuit included the removal of children from their homes and into residential schools, forced relocations to the High Arctic and other permanent settlements, and forced medical treatment, for example, removal and relocation for lengthy tuberculosis treatment. This has created intergenerational trauma for Inuit and a culture of mistrust of authority figures, including healthcare and social care providers. However, despite colonization, Inuit remain resilient and strong, and they have deep connections to land, family, language, community, and traditional knowledge, which have been sustained over thousands of years.

Today, there is a lack of human resource capacity in the communities across the spectrum of health and wellness services. Most Inuit communities are served by a health centre staffed only by nurses who rotate in and out of Arctic communities. Accessing hospitals or specialized services can require travelling thousands of miles by air from home to larger centres such as Iqaluit, Winnipeg, Edmonton, Ottawa, Montreal, or St John's (see Figure 1). In some cases, including cancer treatment, there are no community-based services equivalent to those that can be found in larger places across Canada, and specialist services are severely lacking.

Many Inuit do not have family doctors. This is due, in part, to the rotation of healthcare staff through communities. As a result, Inuit may not be able to build trusting relationships with their healthcare providers and must often repeat their medical history whenever they meet a new healthcare or service provider. This lack of access to health services also correlates to a lack of access to early testing and diagnosis. Far too often, Inuit are diagnosed at late stages of disease, when it is too late for potentially life-saving treatments.

Inuit and Cancer

The Inuktut term for cancer lacks precision. It is broadly understood as a disease that lacks a cure. This, in combination with limited health literacy about cancer and a lack of culturally appropriate cancer awareness resources, reinforces fear, stigma, and a fatalistic attitude about the disease, which in turn may discourage early screening.

Health service systems, cancer screening, and diagnostic programs and services vary between the four regions of Inuit Nunangat (Inuvialuit Settlement Region, Nunavut, Nunavik, and Nunatsiavut). Generally, diagnostic services and cancer treatment facilities are limited or non-existent in the communities, and there are no cancer clinics in Inuit Nunangat. Cultural barriers — language, lack of cultural sensitivity within the healthcare system, and a lack of culturally appropriate information resources — limit the ability of healthcare providers to meet the information needs of Inuit.

Compared to the general Canadian population, Inuit have elevated rates of nasopharyngeal, lung and bronchus, colorectal, stomach, kidney, and renal pelvis cancers. Contributing factors for high cancer incidence among Inuit include (Carrière et al., 2012):

- rapid change in lifestyle due to colonization
- socio-economic determinants of health such as low income, inadequate housing and education, food insecurity, and less access to healthcare services, including early detection screening

- high rates of tobacco use and other modifiable risk factors such as poor diet, high alcohol use, and physical inactivity; and
- lack of access to healthcare services in remote communities, including situations where Inuit are discouraged from seeking non-urgent medical care

Also, reduced engagement in cancer screening in Inuit regions may result in cancer rates being underestimated in these regions. Potential factors in reduced access to screening include remoteness, unavailability of specialized services and screening programs, and language barriers (Inuit Tapiriit Kanatami, 2008; Tait, 2008). Furthermore, there may be an unwillingness to seek screening because the diagnosis and treatment of many cancers often requires travel outside of Inuit regions.

Inuit Cancer Project, Phase 1: Focus Groups, Language Forum, Glossary

Pauktuutit created the Inuit Cancer Project to address these problems. With financial support from the Public Health Agency of Canada, Pauktuutit partnered with the Canadian Cancer Society, the Canadian Breast Cancer Network, the Government of Nunavut and the Canadian Partnership Against Cancer to achieve the following objectives: increase Inuit knowledge (health literacy) about different cancers, cancer screening and early detection, and cancer care and treatment; increase the capacity of frontline healthcare providers to explain and promote the importance of participation in cancer screening and early detection programs; increase the understanding among non-Inuit healthcare providers about their Inuit cancer patients, Inuit culture, and Inuit attitudes about cancer and cancer treatment; and increase the cancer language/terminology capacity of all front-line healthcare providers working with Inuit.

The Inuit Cancer Project was initially a two-year initiative to develop culturally appropriate cancer awareness tools that promoted increased screening and early diagnosis of cancer among Inuit living in the Inuvialuit Settlement Region, Nunavut, Nunavik, and Nunatsiavut. The project aimed to increase awareness about cancer among Inuit to reduce the stigma associated with cancer screening and early detection and reduce the health disparities among Inuit diagnosed with the disease.

The project's early key activities included an environmental scan (literature review, online searches, and key informant interviews); nine Inuit-specific knowledge-attitude-behaviour focus group sessions; a terminology forum to develop an Inuktut glossary of cancer-related terms; and the development, translation and field testing of culturally and linguistically appropriate plain-language cancer awareness tools and complementary support material for use by Community Health Representatives/Workers and non-Inuit healthcare providers. To this end, an advisory committee with cultural, regional, administrative and subject matter expertise was established to guide the cultural content, the project's methodology and development of the final products.

Focus Groups

The focus groups helped to develop an understanding of Inuit knowledge, attitudes, and behaviours about cancer, and they offered an opportunity to gain unique regional perspectives on how Inuit view the topic. This was an important starting point, as information campaigns are filtered through cultural lenses, and therefore, awareness products should be developed accordingly. In this case, the information gathered supported the development of educational resources and tools that better target Inuit and helped identify the best formats and media to reach Inuit and raise awareness. Furthermore, the focus groups provided an opportunity to gauge Inuit understanding of cancer in terms of what they know and feel about cancer and what behaviours and attitudes guide their reasons to participate in screening initiatives. The method allowed interaction and learning between participants and offered the potential to gather information on group consensus or diversity. Focus groups support the oral traditions of Inuit, such as face-to-face communication and sharing with community members, all of which Inuit highly value.

The focus groups confirmed that there is limited awareness among Inuit about cancer and resources. Many people do not know enough about screening and diagnosis. The lack of suitable cancer information was commonly cited as a problem. Although information is readily available in southern secondary and tertiary facilities, it is typically in English and not brought back home by Inuit cancer patients. It was found that even northern community health providers are largely unaware of the patient support services provided by treatment facilities and other organizations. For example, CCS offers a free, confidential cancer information helpline in over 100 languages, including Inuktut, and offers peer support services that can connect Inuit cancer patients with others who might have similar experiences.

> *All my kids, husband – they were affected when I had lung cancer. The word cancer scares everyone. It's a scary topic. Even when we hear it's only a possibility.*

All the focus group sessions included individuals who had had cancer or had a family history of cancer. Participants in Nunavut and Nunavik were most likely to offer statements that cancer is incurable. The late diagnosis of cancer among Inuit probably reinforced the perception of cancer as an incurable or fatal disease. Having experienced specific cancers personally, having a family history with certain cancers, or knowing someone who had suffered from cancer seemed to be a factor in what people knew about the disease. Even so, cancer was often referred to in general terms, with no reference to a specific type.

> *We know it can't be cured. We understand that. It scares us. It's a scary topic.*
> *We see so many people — Inuit — die from cancer so it scares me.*

In most focus group sessions, at least one participant would refer to cancer as an incurable disease. Besides fear, participants equated a cancer diagnosis with death, some expressed that they would be devastated, would give up hope, and would accept their fate.

> *My mother is going to be 80 years old, she's 79 years old, yes, she's quite old. For me, I am 50 years old and I am capable of using the computer and I read and understand and can ask in English, so I would understand more about this than her.*

When asked how best to inform Inuit about cancer prevention, screening and treatment, the focus groups offered a range of suggestions. Participants agreed there was limited information available to them about cancer. Some noted there was plenty of information at the cancer clinics in the south, but far less in the North. Some, however, expressed concerns about information for those who do not speak English and those who do not read. Though pamphlets were recommended, it was noted that if too long, they will not be read.

> *No, there will never be enough information about cancer but especially in the North. Now that you mention, I can't even think of any information provided to the public about cancer.*

Participants specifically identified the need for information about different types of cancers, cancer risks, testing, treatment and diagnosis information in Inuktut for use by interpreters.

Language Forum

Before awareness tools were developed, translated, and distributed, a terminology forum was conducted in 2013 with the participation of content and language experts. It made certain that technical and cancer-related terms had suitable Inuktut-equivalent wording and contributed to the effective knowledge exchange of cancer information in each of the four Inuit regions.

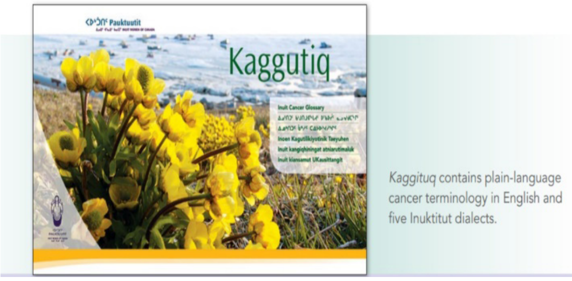
> *There should be a different name. When we hear the word cancer, we automatically think of the worst; that it's incurable.*
> *For me, when I hear the word cancer, I automatically assume it's something that's going to kill you. Even if it's not a deadly cancer, I still think it's going to kill you. I know it's a disease in the body but I also know often times, it's a deadly one.*

There was widespread recognition that the current Inuktut term for cancer (*annia aaqqijuajunnangituq*, which means "incurable ailment") needed to be changed. The term invoked fear and discouraged people from seeking treatment and fighting the illness. As a result, some participants viewed cancer as an incurable disease. Others, however, recognized that cancer could be treated and managed, and they commented about the inaccuracies of the Inuktut meaning for the word "cancer." Participants in most sessions spoke about the lack of Inuktut terminology for different cancers. It was also suggested that those who cannot read or understand English need to learn about cancer verbally using Inuktut.

Glossary

The final deliverable of phase one was the *Kaggutiq Inuit Cancer Glossary*, a resource with cancer terminology and definitions for Inuit (see Figure 2). It is intended to provide Inuit with cancer and their caregivers, as well as healthcare providers, plain-language information about cancer in English, along with five dialects of Inuktut.

The cancer glossary inspired Pauktuutit and Canadian Cancer Society to find a way to continue the work of the Inuit Cancer Project. We recognized that a lack of commonly understood and used Inuktut vocabulary was a barrier to communicating effectively about cancer. We also knew that working together as partners would be an effective way to combine our experience and expertise. Together, we found funding to begin phase two of the project that included the dissemination of the glossary and the development of new tools and resources to support patients, cancer survivors, family members, and healthcare providers.



Kaggituq contains plain-language cancer terminology in English and five Inuktitut dialects.

Figure 2. Inuktut-language cancer glossary

Inuit Cancer Project, Phase 2: Dissemination, *My Journey*, e-Learning

Pauktuutit, CCS, and the project advisory committee are currently collaborating on the second phase of the Inuit Cancer Project. During the first four years, Jaguar Land Rover Canada provided funding, with the fifth and final year of the project funded by CCS. This phase focusses on developing and providing accurate information and culturally appropriate resources to support recently diagnosed Inuit through their cancer journey and improving communication among Inuit, their medical interpreters, and healthcare providers. The patient resource *Inuusinni Aqqusaaqtara – My Journey* has been successfully launched throughout the regions of Inuit Nunangat, with enhanced outreach and dissemination to the cancer healthcare community serving Inuit remaining a steady focus (see Figure 3).

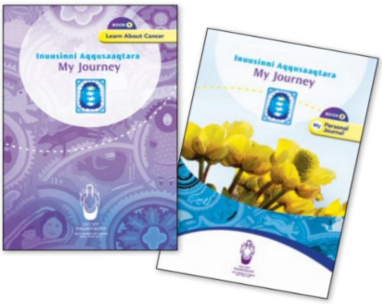


Figure 3. *My Journey* patient resource

Many Inuit with cancer prefer seeing and hearing from someone else with a similar experience rather than just relying on written information. Through consultation with our stakeholders and advisory committee, we found that while individuals found the *My Journey* printed resources valuable, without someone explaining its significance or how to use it, it was likely to get lost in the sea of resources given to patients during their cancer journey. To fill this gap, the project team is creating e-learning modules to help promote the *My Journey* resources and encourage their use of an inviting and engaging way.

E-learning will allow people to learn in different ways and at their own pace. The modules will be designed to facilitate online and offline learning to accommodate both accessibility within northern communities and education before participants leave their communities. The modules will also be created using the best online learning design practices to ensure learners are fully engaged and will complement the existing *My Journey* resources.

One e-learning module will be designed for Inuit who have recently had a cancer diagnosis and their family members/caregivers. The goal of this module is to help them feel as comfortable as possible along the journey and to encourage them to use the resources Pauktuutit and CCS have developed. It will cover the following topics:

- Learning about cancer
- How to use cancer resources
- What to expect through the cancer journey
- What to expect when going south for treatment
- Suggestions for mental wellness supports
- Examples of survivorship resources
- Sample questions to keep in mind; and
- Cultural and strength-based encouragement throughout their journey

The other e-learning module will be geared toward healthcare providers in the communities where patients live and in cities where they go for treatment. While one of our main priorities is ensuring Inuit patients and families are informed and have access to the important knowledge they need about cancer, it is important that they alone do not hold the responsibility of educating care providers regarding their histories, culture, and unique needs. This module will encourage healthcare providers to learn more about the unique needs of Inuit, cultural competency, the historical context of colonization, unresolved trauma and healing-centered engagement, and its impacts today, Inuit ways of knowing and knowledge, how to use and share the *My Journey* cancer resources, language, spirituality and other relevant topics.

The main goal of this module will be for healthcare providers to be able to provide cancer patients and their families with a healthcare environment where they feel respected and safe and are provided the information needed to feel as comfortable as possible throughout the treatment and recovery process. At the same time, healthcare providers will learn more about cultural competence, and the ability to demonstrate respect and empathy towards patients with diverse communication styles, different worldviews, values, and life experiences (Inuit Tuttarvingat, 2010).

Conclusion

Over the last century, Inuit have endured rapid colonization, shifting from a nomadic lifestyle to living in permanent settlements in only two generations. Various policies put in place to exercise control over Inuit include the removal of children from their homes and into residential schools, forced relocations to the High Arctic and within permanent settlements, forced medical treatment, and removal and relocation for lengthy tuberculosis treatment. This has resulted in intergenerational trauma and created a culture of mistrust by the Inuit of authority figures, including health and social care providers. Traditional Inuit ways of living sustained strong and healthy cultures and identities for thousands of years before colonization. Inuit remain resilient and strong and have deep connections to land, family, language, community, and traditional knowledge.

The purpose of these resources is two-fold: one, to provide information to Inuit recently diagnosed with cancer to better support them throughout their journey, and two, facilitate healthcare providers' knowledge of culturally appropriate engagement. A better understanding of cancer can reduce fear and empower Inuit to seek healthcare services sooner and more frequently. The early diagnosis and treatment are important because it often means a better chance of survival. Building knowledge will help to empower not only patients, but also their families and friends who want to offer support. If you are given resources that were made by others with similar experiences, you are more likely to use them. Improved health literacy — for patients and healthcare providers — results in fewer misunderstandings and better quality of care.

In building this suite of resources, we acknowledge the importance of meaningfully engaging with the communities in which our resources are meant to serve. Meaningful engagement has many different definitions and it is up to organizations like Pauktuutit Inuit Women of Canada and the Canadian Cancer Society to ask communities not only about the best ways to do so, but also whether they feel this goal has been reached. Organizations should not see meaningful engagement as a "checkbox" or make assumptions regarding the fulfillment of that engagement; rather, engagement requires consistent conversations over long periods, like this project will continue to do. It includes face-to-face conversations and meeting with people from the community, both patients and healthcare, and service providers. It also means sustaining those relationships to build trust, just like we are trying to establish between patients and their healthcare providers.

As a result of this project, we hope Inuit will be more knowledgeable and less fearful about cancer, so they will be more likely to see their healthcare providers. We hope that, ultimately, it will contribute to reducing cancer incidence and mortality rates and improve the quality of life of Inuit living with cancer.

For more information about the partnership *and* ***resources, please go to the Pauktuutit: Inuit Women of Canada website.***

About the Authors

Savanah Ashton, is the manager of health policy and programs at Pauktuutit Inuit Women of Canada. She is primarily responsible for the overall management of the health department and projects and policy initiatives related to Inuit health and well-being in arctic communities and urban hubs. With over ten years of combined experience in project management and stakeholder engagement, her priority areas include sexual and reproductive health, cancer care, and substance use and addiction.

Tracy Torchetti *(corresponding author)* is director of cancer information and policy at the Canadian Cancer Society. She oversees a knowledge translation and dissemination team responsible for developing cancer information on topics ranging from risk reduction to treatment, supportive care, and statistics. Her background is in medical anthropology and adult literacy. Most recently, she helped develop cancer resources for Inuit patients and healthcare professionals in Canada's Arctic. Email: Tracy.Torchetti@cancer.ca

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Book Reviews

Children as Caregivers: The Global Fight Against Tuberculosis and HIV in Zambia, by Jean Hunleth. Rutgers, NJ: Rutgers University, 2017.

In *Children as Caregivers: The Global Fight Against Tuberculosis and HIV in Zambia*, anthropologist and public health researcher Jean Hunleth explores "how intergenerational care happens when infectious disease becomes woven into the structure, relationships, and rhythms of day-of-day life" (p. 3). Working in George Compound in Lusaka, Zambia, Hunleth centers her ethnographic research of "the continued pursuit of universal treatment for TB and HIV" (p. 3) on the experiences and voices of children with ill family members. In so doing, she addresses the broad erasure of children from both public health research, and studies of caregiving and care work. She eloquently demonstrates the very real role and work that children do in caring for their ill parents and supporting broader kin-networks. The affective relationships among children and adults in George are central to the treatment of TB and HIV. Through her experience researching both infectious disease and children, Hunleth offers engaged scholars important lessons about the agency of children within intergenerational caregiving and including children as expert participants.

Hunleth's multidisciplinary research experience with the delivery of universal public health initiatives stands as the foundation for her examination and exploration of children's experiences and caregiving amid the Zambian TB and HIV crisis. Children, she writes, have largely been absent from public health initiatives of infectious disease and medical research (p. 12). In part, this erasure is rooted in Eurocentric assumptions of children as non-agentic beings, and inadequate conceptualization of children as family members (p. 15). This erasure is further compounded for child caregivers as predominant Euro-American models of childhood enacted by public health initiatives paint the caregiving and care-work done by children as child abuse. By focusing this ethnographic account on children, their voices, and experiences, Hunleth begins to rectify this erasure by critically repositioning children as social actors. She not only reminds engaged scholars that children are also impacted by the structural inequities of George and infectious disease, but also that children too "tailor global health, humanitarian, and biomedical systems of knowledge and practice to their particular circumstances" (p. 4).

A critical lens through which to consider the agency of George children is the care work and caregiving they perform for their ill parents and family members. The recent consideration of children's caregiving by social scientists has primarily focused on domestic tasks. Hunleth problematizes this "care equals work" model by focusing on the experiences of children themselves. While the children in George do variously clean house, fetch water, and complete domestic tasks, Hunleth tells us that reducing care to domestic tasks fails to account for the nuanced and affective nature of care. What is critical for both children and adults in George is the care that these children provide by staying close (geographically, residentially) to their parents, by reminding ill family members to take their medicine, and by avoiding direct naming of both TB and HIV. In extending her understanding of care beyond domestic task models, Hunleth (re)introduces the affective nature of parent-child relationships into our understanding of care. Care, in this model, is focused on maintaining the intergenerational relationships which provide both resources and safety in a constantly fluctuating context.

It becomes clear then, that childhood and children in George are inherently relational.

Beyond the obvious cultural constructions of "child" in opposition to "adult," children and adults in George mutually rely upon each other to navigate the poverty, illness, and structural violence that characterizes their lives. As Hunleth writes,

"The resources and opportunities children [in George] are afforded depend on relationships, and children make day-to-day life meaningful and possible through their affective and practical actions. That is, interdependence characterized the relationship between adults and children" (p. 48).

It is necessary to understand then that children in George do not care for their ill parents simply because they are structurally or culturally expected to do so. Rather, engaged scholars can learn from Hunleth's work that these children receive valuable benefits by caring for their parents, including parental love, support, and material resources. With these lessons in mind, it is essential to actively incorporate acknowledgement of children's care work into biomedical treatment protocols for infectious disease.

Children as Caregivers also serves as an example of how to practically incorporate children as participants in ethnographic research. Euro-American constructions of children place less weight or value on the opinions, thoughts, and interpretations of children than those of adults. Hunleth, however, prefaces the voices of child participants. Throughout the book, she draws on workshops, role-play, and games played with the children. She incorporates children's voices into the conversation through their drawings and stories, as well as transcripts of audio-recordings the children made themselves. Relating the children's understandings of illness, she does not "correct" their interpretations, but instead acknowledges the value of their authoritative knowledge (p. 103). In so doing, Hunleth not only recognizes children as experts of their own experiences but positions children's agency at the heart of her analysis. Her inclusion of children as participants (and, critically, the children's own experiences and voices) highlights the need for engaged scholars to incorporate children as participants when research thoughtfully calls for their perspectives. We must acknowledge that children play a role equitable to adults in informing, influencing, and engaging with the economic, social, and political structures of daily life.

As a doctoral student studying the intersections of assisted reproduction and reproductive decision making, I was particularly drawn to Hunleth's central positioning of children's care work. Anthropological study of assisted reproduction and infertility has frequently considered the experiences of infertile couples, without acknowledgment of either the caregiving of/from the other member of the couple, or any children present within the home or extended family. In *Children as Caregivers*, I found a reconsideration of the affective nature of familial connection, as well as an analytical focus on the interdependence central to kin relations. This has inspired me to begin to consider how children's voices, agency, and care must be centrally considered within reproductive and kinship studies.

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Lissa: A Story About Medical Promise, Friendship, and Revolution. Sherine Hamdy and Coleman Nye. Toronto: University of Toronto Press, 2017.

In the graphic novel *Lissa: A Story About Medical Promise, Friendship, and Revolution* anthropologists Sherine Hamdy and Coleman Nye tell the story of Anna and Layla, two childhood friends growing up together in Egypt and whose cultural and religious differences lead them to live very different, yet connected lives.

Anna and Layla are composite characters; they are derived from hundreds of separate interviews conducted by Hamdy and Nye on "how social contexts shape medical decisions" (p. 264). The social contexts are contrasted and intertwined throughout the graphic novel. After the death of Anna's mother, her father decides to move them back to the United States, leaving Egypt and her best friend behind. Into adulthood and oceans apart, Anna and Layla are both faced with tough medical decisions. Layla's father finds out he has kidney disease and will only live if he is to have a transplant. He refuses to let his children donate, ultimately choosing to leave his fate in the hands of God. At the same time, Anna learns she is living with the BRCA1 mutation, increasing her chance of developing breast cancer like her mother. Anna must decide whether or not to have a preemptive mastectomy and trust her fate in the hands of modern medicine.

Although Layla urges Anna not to have the mastectomy, lamenting, "Here we don't have enough medicine. There, you've got too much" (p. 119), back in America, Anna chooses to go through with the surgery. Upon returning to Egypt following the death of Layla's father, Anna hides her surgery from her friend. To further complicate the story, in the background of these medical emergencies, the Egyptian Revolution has begun, reminding readers of the influence of politics on lived experiences, including medical decision-making. The graphic novel ends with Anna and Layla walking through the streets of Cairo when Anna tells her friend about the surgery. Anna tells Layla, "I changed my body so that I could have a better future… but here, now you've risked your life for the exact same reason" (p. 228). The two continue on their walk, stopping at a wall covered in graffiti. The word *lissa* in Egyptian Arabic covers the wall, and Layla tells Anna that it means "not yet" or "still", signifying a hope for the future that is not lost.

In the graphic novel's foreword, anthropologist George E. Marcus defines the word transduction: "the action or process of converting something, and especially energy or a message, into another form" (*Webster's Third New International Dictionary*). By weaving anthropological concepts and ethnographic methods into a graphic novel, Hamdy and Nye are doing just this. Illustrations by Sarula Bao and Caroline Brewer tell the story of sociopolitical conflict, medical decision-making, and friendship, urging readers to understand the anthropological through the visual. While much of the story is told in the dialogue between Layla and Anna, much is also told through the graphics themselves. The reader can understand the cultural, social, and religious influences and implications in the decisions made by Anna's and Layla's families throughout the graphic novel, along with the fear, sadness, and sense of hope from both characters. Sometimes, what is not said is as important as what is.

Lissa is an example of what anthropologists can create when there is an emphasis on engaged scholarship. When anthropologists collaborate and think outside of the box, graphic novels like *Lissa* can come to life and encourage new readership. Individuals learn and process information in different ways, and in using a new medium to share their work, Hamdy and Nye are expanding the possibilities of public anthropology and who it can benefit. Ethnography has been the hallmark of anthropological studies, however, its readership is often limited to that of other anthropologists and academics. Many in the discipline are working towards approaches that are more accessible and attractive to the public. Hamdy and Nye are engaging a new group of readers and in doing so, are rethinking and revisualizing ethnography.

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