Beyond Subsistence: Understanding Local Food Procurement Efforts in the Wapekeka First Nation in Northern Ontario

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For Batman (the dog), Kehdysh, and Mukwah,

PART ONE

Indigenous peoples of what is now known as Canada have undergone dietary and lifestyle transformations that have resulted in alarming rates of food insecurity (Damman, Eide, & Kuhnlein, 2008; Elliott, Jayatilaka, Brown, Varley, & Corbett, 2012; Willows, 2005). Food security exists "when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (World Health Organization, 1996). Food insecurity in remote and northern Indigenous communities has led to higher than average experiences with diet related health disparities (Batal, Gray-Donald, Kuhnlein, & Recerveur, 2004; Haman et al., 2010; Imbeault et al., 2011; Power, 2008). The nutritional problems of Indigenous peoples stem from European contact and the forced transition from eating off the land to eating market foods (Batal et al., 2004; H. Kuhnlein & Receveur, 1996; Pal, Haman, & Robidoux, 2013) that are highly processed and deficient in nutrient density (Batal et al., 2004).

Most Indigenous communities are going through a westernization of diet and lifestyles known as the "nutrition transition" (Samson & Pretty, 2006). Dietary westernization has been defined as "the diffusion and adoption of Western food culture" (Uusitalo et al., 2005). The nutrition transition is characterized by the reduced consumption of land-based foods, and an increased reliance on a market-based diet high in refined carbohydrates (Damman et al., 2008; H. Kuhnlein, Receveur, Soueida, & Egeland, 2004) that has led to increased rates of obesity and diabetes (Popkin, Horton, Kim, Mahal, & Shuigao, 2001). Remote Indigenous communities typically rely on one primary food distributor for market foods. Prices are often exorbitant with this provider, in large part due to the cost of transportation and the monopoly providers exercise over the remote regions they operate in (Haman et al., 2010; Lamden, Receveur, Marshall, & Kuhnlein, 2006; Pal et al., 2013; Robidoux et al., 2012). Consequently, northern Indigenous

communities have extremely limited access to nutritious foods from the store because these foods are either absent or in poor quality.

Food procured form the land, or traditional food, does provide a healthier source of food, and these foods are still an important part of Indigenous diets in northern Canada, however most communities heavily rely on foods purchased from the store (Wein, 1995). Northern traditional or country food security is defined as, "the continued and predictable availability and access to food, derived from northern environments through Indigenous cultural practices" (Paci, Dickson, Nickels, Chan, & Furgal, 2004, p. 1). It is important to note here that "traditional food system" is used to identify all food accepted within a particular culture that is available from local natural resources. The term encompasses aspects such as sociocultural meanings, and acquisition and processing techniques. "Traditional food" is usually, and for the sake of this thesis, used to mean any food that is harvested or hunted from the regional ecosystem. "Indigenous people" refers to a cultural group in a particular ecologic area, while the plural form "Indigenous peoples" refers to more than one cultural group. In remote First Nations communities in Northern Ontario, Canada, diets are typically composed of both traditional foods procured from the land, and store-bought foods in varying proportions (Robidoux et al., 2012).

A resurgence of traditional or off-the land food efforts are desired by Indigenous communities in Canada, as these efforts have important cultural and nutritional value (Batal et al., 2004; Bonnekessen, 2010; Elliott et al., 2012; Humphrey, 1989). Traditional food procurement in the form of hunting and fishing is often suggested to improve food security and diet quality in remote Indigenous communities. However, there are several financial and logistical barriers that prevent land-based food efforts. It has been documented that it takes a tremendous amount of work in order to maintain traditional dietary practices (Leibovitch

Randazzo & Robidoux, 2018). Additionally, some traditional foods procured from the land are comparable or even more expensive than food purchased from the store (Pal et al., 2013; Robidoux et al., 2012). For the subarctic region of Canada in this thesis, hunting and fishing trips are not always successful and are therefore not a consistent food source (Pal et al., 2013). The abundance of wild game has also been impacted by climate and environment change (Loring & Gerlach, 2010; Wesche & Chan, 2010). Indigenous peoples' reliance on local wild resources means that climate impacts on ecosystems have a particularly important impact on subsistence. Dependence on regional ecosystems also leaves Indigenous peoples vulnerable to the impacts of contaminants and pathogens on the quality of subsistence foods (Seabert et al., 2013).

A solution to the problems of food insecurity and diet related disease is undoubtedly complex. Not only are there local and regional challenges that communities are facing, food production is also intertwined with larger global agri-food systems (GAFS). In a neo-liberal era, the production-oriented GAFS, along with a loss of access to traditional lands, and socio-economic marginalization have all greatly impacted the ability of many communities to maintain an adequate, culturally appropriate, and healthy diet (Morrison, 2011). The neglect of local food production is especially problematic when it comes to feeding rural and remote communities (Enyedi & Volgyes, 1982; Friedmann, 1993; Laforge, Anderson, & McLachlan, 2017; Sage, 2014). Thus, the Canadian government, various non-governmental organizations (NGOs), and numerous individual communities are seeking alternative and grassroots ways to introduce healthy foods to remote communities. In Canada, issues of food access are being addressed within broader national organizations such as Food Secure Canada (Koc, Desjardins, & Roberts, 2008). The same issues are being addressed by influential international organizations such as La

Via Campensina, which seeks to challenge the fundamental workings of food systems on a global scale (Leblanc & Burnett, 2017; Sage, 2014). While these organizations are engaging with the broader issues of the global food system such as the reliance on international trade, there is also an interplay with localized movements that "seek to generate some of their own solutions to food insecurity, increase food sovereignty, and address health issues" (Robidoux & Mason, 2017, p. 2). Small-scale efforts complement broader national developments by generating new ideas, understandings, and information on how food is working and being understood by communities. Therefore, we need a precise way of explaining the interplay between the westernization of lifestyle and diets, and the challenges and nuances of traditional food practices.

In order to achieve this, we can critically analyze the problems nuances of the GAFS and local dietary and culinary practices in remote and northern communities within the context of "coloniality" (Quijano, 2000). By drawing from the work of Argentine philosopher and semiotician, Walter Mignolo (2000), and his concept of "border thinking", the complex subsistence practices in the Canadian North and how they are located within larger global foodways can be explained. Border thinking provides a means to understand and engage in de-colonial thought processes to address Indigenous community health issues. By pointing to where border thinking is possible in the context of local subsistence practices in the North, one can understand how traditional food practices work within the constraints of the colonial, but are also emerging from the local. Guided by participatory research methods, this thesis focuses on traditional subsistence practices and small-scale gardening initiatives in a remote fly-in First Nation community in northwestern Ontario.

The main objective is to understand how local food practices are operating within the Wapekeka First Nation. The first article addresses the general viability of a hoop house

gardening project implemented in the community in May 2017. Hoop houses are simple, minimally climate-controlled greenhouse-like structures over bare ground that rely on passive solar heating (Russo & Shrefler, 2012). The purpose of this article is to address how hoop house gardening can play a role in improving local food security. It also questions if local gardening efforts can be in-line with traditional subsistence practices. The second article seeks to further understand local traditional subsistence efforts in the Wapekeka First Nation through the theoretical lens of border thinking. The second article looks to global food systems, and addresses the challenges of food systems navigating both the local and the global. The purpose of the second article is to use fieldwork examples to critically local meanings around food in the Wapekeka First Nation within the context of coloniality using border thinking. If the values and beliefs around food can be understood in this way, how to feed a community can be inclusive of what is socially and culturally appropriate from the perspective of the people most affected by food insecurity.

Literature Review

To situate this thesis, I will first provide historical context regarding the colonization of Indigenous people in Canada, and the subsequent marginalization and violent imposition on Indigenous food systems. I will place particular emphasis on the nutrition transition, and the implications of the phenomena for the health of Indigenous peoples in Canada. I will then frame Canada within the global food system, and explain it in the context of the dominance of food within a Western framework. An examination of local responses to food production and Indigenous efforts to build a more sustainable food system will follow. Finally, I will introduce the community of Wapekeka First Nation with an emphasis on the importance of working with and understanding communities within their specific regional and cultural context.

Historical Context

In order to appreciate the complexities of dietary practices in remote Indigenous communities in what is now northern Canada, it is necessary to acknowledge the rapid and dramatic changes Indigenous peoples faced as a result of a sustained European presence from the late 17th century onwards. Colonialism started in the late 15th century, and is understood as the establishment of foreign rule over a dependent country, territory, or people. It is associated with the legal domination over a subordinate people, and the exploitation and redistribution of natural resources to benefit imperial interests (Kroll-Zeldin, 2016). Colonization involved abstract processes that allowed empires to define themselves as superior, while simultaneously devaluing any way of life that did not align with western systems of knowledge (Ashcroft, Griffiths, & Tiffin, 1998). Even in the 21st century, whole communities are still trying to recover from the impacts of colonial legislation, structural influences, and tactics of assimilation perpetuated by the Canadian government (Czyzewski, 2011). Colonization included processes by which policies undermined Indigenous food systems by disrupting and often eradicating land-based food practices (Leblanc & Burnett, 2017). When Europeans first sailed to North America, the continent was treated as *terra nullius,* a Latin phrase meaning "empty land", despite the Indigenous peoples already residing there (Alan & Eldon, 2014; Patton, 1998). With the assertion that they had discovered a *terra nullius*, European settlers "saw only a mysterious, empty land casually inhabited by the Native people but essentially unclaimed" (Alan & Eldon, 2014, p. 24). Although *terra nullius* is no longer accepted in legal terms, it was once a powerful instrument that legitimized the European claims to land already occupied by Indigenous peoples.

Indigenous food systems were marginalized and dominated by the arrival of European settlers, who built fixed farming communities, and incorporated Indigenous communities into a

European capitalist economy by introducing the fur trade (Bishop, 1970; Krech, III, 1984; Wiebe & Wipf, 2011). Pre-contact, Indigenous food systems were complex, ranging from intensive agriculture in some regions, to mixed farming, hunting and gathering, and intensive fishing in others (Wiebe & Wipf, 2011). For millennia, Indigenous peoples sustained themselves with food from the land in a semi-nomadic, subsistence-based lifestyle. Increasing involvement in the fur trade altered the political economy of Indigenous communities as animal resources were being harvested for capital exchange rather than purely for subsistence/material needs (Bishop, 1970). These new demands on local animal populations (for fur, hides and meat) eventually depleted critical food sources, impacting people's ability to feed themselves and/or to economically profit from them (Leblanc & Burnett, 2017). Food no longer was produced and redistributed locally, resulting in different approaches to food production and distribution. The development of the fur trade in this region was the driving force behind government policies that led to the subjugation of traditional foodways.

The erosion of local food systems and altered food practices was further perpetuated by several major policies enacted by the Canadian government. Formal control over Indigenous peoples and their territories was solidified when the federal government consolidated all extant legislation pertaining to Indigenous peoples under the Indian Act (Leblanc & Burnett, 2017). This created a paternalistic system and produced conflict in regard to the management of natural resources. Significantly, the Indian Act constrained Indigenous people's abilities to habituate and manage their lands as they had for generations and the "modern" treaty-making process furthered imperial control. The treaties included cession of land and creation of reserves, the guarantee of annuities, the description of the government's obligations and responsibilities, and the continued right to hunt and fish by Indigenous peoples on Crown lands (Miller, 1996; Surtees, 1986). The

initiation of the reserve system restricted Indigenous peoples' ability to utilize traditional subsistence practices by creating permanent settlements that forced a shift from a semi-nomadic land-based existence to a sedentary, community-based way of life and the gradual introduction of community stores (Alfred, 2009; Robidoux et al., 2012). Further, the residential school system was established, which was an attempt by the government to prevent environmental, cultural, and linguistic knowledge from being passed down from one generation to the next (Chrisjohn & Young, 1997; Miller, 1996; Streit & Mason, 2017). Such interventions forced people towards a dependency on Western foods and a market-based food system (Rudolph & McLachlan, 2013). The Truth and Reconciliation Commission of Canada (2015) reported that the food policies that emerged from colonization played a particularly violent and destructive role. It is now widely accepted that processes of culinary acculturation are a key feature of colonialism (Turner, 2014). Various stages of intervention had a part in undermining local food systems and food practices by creating a long-term dependency on the government that continues to impact Indigenous food security throughout Canada (Morrison, 2011; Rudolph & McLachlan, 2013).

The transformations seen in Indigenous diets due to colonization are often termed the "nutrition transition", described by Samson and Pretty (2006) as "the abrupt shift from consumption of wild foods to processed foods" (p.531). An increased consumption of foods sourced from commercial processes greatly compromises the nutritional quality of diet, the nutrition transition has been paralleled by an increase prevalence of obesity, type II diabetes, and other diet-related disease (Damman et al., 2008; Haman et al., 2010; H. Kuhnlein et al., 2004). Indigenous peoples in remote regions in Canada face both the challenging logistics of food retailing (such as high prices and limited availability of nutritious food), and low per capita income (Council of Canadian Academics, 2014). Indigenous peoples in Canada pay some of the

highest food prices in the country and have some of the lowest household incomes (Canadian Council of Academics, 2014; Veeraraghavan et al., 2016). Collectively, these factors promote the higher reliance on non-perishable, and highly processed foods (Chen & Che, 2001; Egeland, Johnson-Down, Cao, Sheikh, & Weiler, 2011). The nutrition transition and the subsequent westernization of Indigenous diets also implies reduced consumption of foods accessed through land-based procurement, such as hunting, fishing and gathering. While foods procured from the land still contribute to the diet of Indigenous peoples in northern Canada, a shift to a diet predominantly made up of market food is being observed (Pal et al., 2013; Wein, 1995).

The maintained use of traditional, or land-based foods, has been proposed as means of mitigating the nutrition transition as these foods are generally presented as being a healthier alternative to store-bought foods (Foley, 2005; H. V. Kuhnlein & Receveur, 1996; Pal et al., 2013; Power, 2008; Willows, 2005). The term "traditional" is ambiguous terminology often used to define those foods constituting Indigenous diets prior to contact with Europeans (Humphrey, 1989). For the purpose of this paper, the term is used to define any foods that have been procured (hunted, fished, or gathered) form the local ecosystem. While definitions often remain vague, there is no doubt that when food is labeled traditional, it is a mark of approval; this endorsement gives the word "traditional" power, status, and meaning (Humphrey, 1989). The power and meaning accredited to foods when they are marked "traditional" leads to the idea that those foods reinforce Indigenous identities and connections to family and ancestors and continue to hold socio-cultural meaning and value (Humphrey, 1989; Powers & Powers, 1984; Robidoux et al., 2012). The sustainable use of local biodiversity can be an effective and culturally-relevant approach to addressing current dietary challenges faced by Indigenous peoples (Johns & Eyzaguirre, 2006). However, there are also critical financial and logistical barriers northern First

Nation peoples face acquiring land based foods, despite their relative abundance (Pal et al., 2013; Robidoux et al., 2012).

First, land food availability is not consistent due to circumstances (such as weather) beyond the control of the hunter. Therefore, along with socio-economic challenges, Indigenous peoples in the Canadian north are also facing ecological changes that relate to climate change (Brinkman et al., 2016; Ford, 2009). Dependence on regional ecosystems also leaves Indigenous peoples vulnerable to the impacts of contaminants and pathogens on the quality of subsistence foods (Seabert et al., 2013). Regional ecosystems in Canada incredibly diverse and variable, therefore blanket solutions to improve local food access using traditional harvesting practices are often ineffective. What works to revitalise traditional food practices and bring food into communities in one area may not be effective for a neighbouring community, or even in a subsequent year.

Although it was noted that many are interested in, and recognize the value of traditional food, most individuals simply do not have the time, resources, or financial means to obtain them on their own (Pal et al., 2013). In the region of Ontario in this thesis it was documented that certain community members rely extensively on local food sources, and rarely consume land-food (Leibovitch Randazzo & Robidoux, 2018). Traditional foods are clearly valued and continue to play an important role in community life, but the overall consumption of land food remains relatively limited for the huge majority of people (Robidoux et al., 2012). It was found that for many individuals, traditional food may be inaccessible due to lack of proper equipment, expertise, time, and physical strength and endurance required to harvest most of these foods (Schuster, Wein, Dickson, & Chan, 2011). A study by Pal et al. (2013) documented the costs of hunting and fishing in a remote First Nation in northern Ontario as an alternative to relying on

store-bought foods. Researchers noted that prices of store foods in this region are often unaffordable and not always in stock (Pal et al., 2013). Along with the time and effort required for the procurement of land based foods, the average cost was also demonstrated to be higher than the cost of the store at $14.32/kg (compared to $6 to $11 at the store) (Pal et al., 2013). Traditional foods undoubtedly have a part to play in the northern food system, but they face too many barriers to adequately address food insecurity and diet related disease (Haman et al., 2010).

Local traditional food procurement, while highly valued, is not working when it comes to adequately feeding remote and northern peoples. Northern communities are falling victim to the failures of the national system that results in the poor quality and exorbitantly priced market foods being shipped to these regions (Akram-Lodhi, 2013; Friedmann, 1993). Canada has failed to adequately respect, protect, and fulfill Indigenous peoples' right to food (Levkoe, 2014; UNGA, 2012). The northern food system is acting outside of national production chains in the form of local or traditional subsistence practices, but these efforts have been eroded and marginalized to the point that they no longer adequately feed the population. Thus, Canada is facing a serious issues of who has access to healthy foods (W. Wilson, Warren, Sodeke, & Wilson, 2013). The challenges of remoteness, climate change, and high costs of food, fuel, and equipment all play important roles in food security. However, the primary drivers of food insecurity relate to governance and policy challenges that have been recognized and critiqued for decades (Loring & Gerlach, 2015). A better understanding of the global food framework, and how it is intertwined with local food movements is needed in order to fully comprehend the multidimensional food security problems Indigenous peoples' face.

Food Security, Food Sovereignty, and the Global Agri-food System

At the World Health Summit of 1996, the World Health Organization (WHO) defined food security as existing "when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (World Health Organization, 1996). This definition takes into account physical availability of food, economic and physical access to food, and food utilization, meaning the sufficient energy and nutrient content of foods (Power, 2008). It also mentions food preference, and in the context of Indigenous peoples in Canada this usually means having access to foods that are culturally appropriate such as traditional food. A study on the prevalence and sociodemographic risk factors related to household food security amongst off-reserve Indigenous peoples in Canada revealed that 33% of Indigenous households were food insecure, compared to 9% of non-Indigenous households (Willows, Veugelers, Raine, & Kuhle, 2009). Additionally, 14% of Indigenous households have severe food insecurity, whereas only 3% of non-Indigenous households have experienced severe insecurity (Willows et al., 2009). For on-reserve Indigenous peoples in remote regions in Canada, the rates of food insecurity reach up to 70% in some regions (Council of Canadian Academics, 2014). Food security is a useful concept for addressing issues of hunger and malnutrition across the globe. However, it operates under the assumption that solutions to hunger are economically driven, and enacted by a privileged few. In order to get a sense of local food practices in a remote Indigenous community as a means of addressing food insecurity, we must also consider the current global food systems as well as the larger food movements in Canada.

In Canada, issues of food access are being addressed within broader national organizations such as Food Secure Canada (Koc et al., 2008). Food security does not take into

consideration gaining more control over food systems locally, and does not take into account historical injustices and cultural aspects of food issues. Thus, the term "food sovereignty" coined by La Via Campensina in 1996, has been increasingly employed by scholars and food activists in order to bypass such capitalistic and neoclassical economic thinking (Leblanc & Burnett, 2017). La Via Campensina seeks to challenge the fundamental workings of food systems on a global scale (Leblanc & Burnett, 2017; Sage, 2014). Food systems worldwide are operating within a Western framework of a globalized market economy and a neoliberal trade regime controlled by powerful transnational corporations (Desmarais, 2007; Enyedi & Volgyes, 1982; McMichael, 2004). The global food model continues to exclude other viewpoints, resulting in the silence of the voices of Indigenous peoples (Zarate, 1998).

Food has become an international commodity at the expense of subsistence land-use, Indigenous food systems, and small-scale agriculture oriented to local markets (Rudolph, 2012). The consequence of operating within a Western framework in this context is that autonomous, sustainable, food initiatives continue to be marginalized. The GAFS is an overarching framework that is actualized through transnational corporate-favouring policies in the World Trade Organization (WTO), and the North American Free Trade Agreement (NAFTA) (Desmarais, 2007; Holt Giménez & Shattuck, 2011). MacRae and Abergel (2012) point to the fact that the establishment of the GAFS in a neoliberal era means that some nation states have given up their capacity to determine national priorities because of international trade treaties. Neoliberal ideology emerged as a legitimizing discourse justifying corporate restructuring, globalization, and an emphasis on the free movement of goods (Koc & Bas, 2012). The critique of neoliberalism is that it "prioritizes export-oriented production and trade liberalization, international harmonization of regulatory practice, and the deepening of transnational capital

integration" (Wittman, Desmarais, & Wiebe, 2011, p. 190). While the aim of this thesis is not to analyze the complex dimensions of economic globalization, it is nonetheless important to identify the implications of this process on Indigenous food security. It is clear that there are vast disparities within the country when it comes to food production versus consumption. In response to the working of the GAFS, several food movements have emerged that are focused on the development of sustainable and alternative food systems.

In Canada, neoliberal reforms began in the late 1970s as a response to the pressures of the global economy. The subsequent emphasis on privatization meant that the burden of attending to the needs of more vulnerable populations were transferred to local authorities and nongovernmental organizations often working with limited resources (Koc & Bas, 2012). In the late 1990s, governments attempted to respond to the distressing reports of food insecurity by adopting Canada's Action Plan for Food Security (CAPFS). This unique historical document identified clear targets to achieve food security nationally and globally with a multi-sectoral approach (Koc & Bas, 2012). This was one of the most comprehensive food policy documents in Canada, formed in the months following the 1996 World Food Summit in Rome. The Summit called for each nation to develop and implement a national plan of action to achieve food security domestically and internationally (Koc & Bas, 2012). As a result, "one hundred and eighty seven countries committed to develop plans and to reduce by half the number of undernourished people no later than the year 2015" (Koc & Bas, 2012, p. 184). Unfortunately, the document lacked coherence and direction, and there was a significant failure to implement CAPFS. Regrettably, it was largely ignored and forgotten. While there continues to be disheartening evidence of widespread food insecurity in Canada, the future is not entirely bleak. The Canadian federal government is currently setting up a long-term vision for the health,

environment, social, and economic goals related to food in the nation's first comprehensive food policy, "a Food Policy for Canada" scheduled to be released in 2018 (Government of Canada, 2017). In September 2017, the House of Commons Standing Committee on Agriculture and Agri-Food began a study on Canada's first national food policy (House of Commons, 2017). The Commitee created a report that focuses on broad policy themes including increasing access to affordable food through food distribution, and supporting local and regional production (House of Commons, 2017). Thankfully, the problems of food insecurity for remote Indigenous communities is beginning to emerge within federal policy.

Complimenting this, are the past and current initiatives outside of the federal government existing with the underlying objective of contributing to a future of sustainable food systems. Such initiates began to emerge in the early 2000s, and began to move the Canadian agenda further, beyond the concept of food security to a new understanding of the various food movements. A growing number of Canadian and international participatory research projects and community-based programs have begun to make valuable contributions to both food security and food sovereignty research (Council of Canadian Academics, 2014). Food sovereignty is distinct from food security in that food sovereignty initiatives accept cultural, political, and environmental aspects of food systems, whereas food security "ignores the defining power relations that determine production, distribution and consumption patterns within the food system" (Wiebe & Wipf, 2011, p. 4). One of the major milestones for both food security and food sovereignty research was the founding of a national coalition called Food Secure Canada (FSC) in 2005. FSC is an umbrella organization for Canada's community food security movement that advocates for safe, sufficient, and nutritious food through sustainable local food systems (Koc et al., 2008). With so many factors influencing the direction and scope of such

initiatives, recent work has begun to develop a number of ideological approaches to the food system (Holt Giménez, Patel, & Shattuck, 2009; Holt Giménez & Shattuck, 2011; Holt-Giméénez & Wang, 2011)

Referring to global food movements in their entirety, Holt-Gimenez and Shattuck (2011) identify two trends which they label *Radical* (or food sovereignty) and *Progressive* (or food justice). The Radical approach advocates a complete transformation of the prevailing corporate-led agri-food system; this approach is served by the notion of food sovereignty which focuses squarely upon power and the rights of people to determine their own futures (Sage, 2014). In contrast to the Radical approach, the Progressive trend is more closely associated with food justice discourse "grounded in an empowerment orientation in which the poor, oppressed, and undeserved assert their rights through the power of self-respect and community organization" (Holt Giménez & Shattuck, 2011). Food justice formulates its food-security discourse in the "context of institutional racism, racial formation, and racialized geographies" (Alkon & Norgaard, 2009). The Progressive category includes such initiatives as local growing schemes and community gardens (Sage, 2014). It encompasses a diverse array of decentralised, locally focused initiatives that are a creative and important part of the solution to food insecurity. Food justice it is also the category where this thesis is situated because while an understanding of the GAFS and the food sovereignty paradigm is necessary, what is most important is simply understanding how healthy food enters into and is being understood by communities. Local, sustainable, micro-scale food production that gives control back to the community in various forms are a developing, progressive part of the solution to food insecurity. Such initiatives destabilise agriculture as a mechanism of economic development at the community level, rather

than on a global or institutional scale. Nonetheless, these initiatives enable people to gain more control over their food systems leading to higher food autonomy and food security.

Community and school gardens, community supported agriculture schemes, and backyard food growing are examples of some of the Progressive food initiatives in Canada. The spread of these initiatives "demonstrates that there is more going on than an ephemeral collection of local projects" (Sage, 2014, p. 263). An important part of the Progressive movement, especially for remote Indigenous communities, is that these initiatives have the capacity to build alliances that will strengthen sustainability to combat food security (Holt Giménez & Shattuck, 2011; Sage, 2014). The single most important focus of the progressive movement that is occurring in Indigenous communities is the growing of local food (Sage, 2014). There are few published studies focusing on gardening initiatives with Indigenous groups in Canada (Barbeau, Oelbermann, Karagatzides, & Tsuji, 2015; Fieldhouse & Thompson, 2012; Lombard, Forster-Cox, & O'Neill, 2006; Viola, 2006), but those that do suggest local food production is a viable strategy to improve food security (Fieldhouse & Thompson, 2012). For many northern Indigenous communities, gardening without a greenhouse or hoop house may not be feasible due to climatic conditions such as permafrost, and considerably shorter growing seasons (Skinner, Hanning, Metatawabin, & Tsuji, 2014). Documentation on a community greenhouse project in Fort Albany First Nation in northern Ontario reported that while the amount of food grown in their community greenhouse would not be able to sustain many people overall, the space could be used to address issues of food access by other means such as to germinate seeds for cultivating home-based gardens (Skinner et al., 2014).

Further, it has been noted that garden-based intervention programs for children have the potential to change children's taste for fruit and vegetables, and thus increase fruit and vegetable

intake (Hermann et al., 2006; Lautenschlager & Smith, 2007; Morris, Neustadter, & Zidenberg-Cherr, 2001). A study by Hanbazaza et al. (2015) evaluated the changes in First Nations elementary school children's knowledge and preferences towards fruit and vegetables after being exposed to a school gardening snack program for 18 months. The study found that "children's knowledge of vegetables and fruit modestly improved over the course of the intervention as did children's fruit preference scores" (Hanbazaza et al., 2015, p. 136). Building an understanding of, and appreciation for, physical procurement of food helps connect local inhabitants to their land and food and re-establishes the basis of what is appropriate (or good) to eat (Bonnekessen, 2010; Sage, 2014). Growing food, "opens a space to challenge the mainstream food system by offering a more equitable, ecologically sustainable and potentially socially empowering alternative" (Sage, 2014, p. 263). Clearly, local subsistence efforts are in conversation with larger food system frameworks, and the local is being dominated by a Western understanding of food. However, the space for local food production is expanding and slowly emerging as part of a solution to restore northern food systems. To assist in understanding how local food production can be part of a solution to address food insecurity and diet related disease, a more effective understanding of the meanings around Indigenous food practices is necessary.

A review of the literature has pointed to recommendations for future research that include an improved focus on participatory research, and food security interventions, that acknowledge and focus on supporting the right of local peoples to pursue food security on their own terms (Loring & Gerlach, 2014). Researches often point to the fact that because food insecurity is experienced differently at individual, household, community, and regional levels, strategies to mitigate food insecurity must be similarly diverse (Council of Canadian Academics, 2014). Yet despite these recommendations there are few research initiatives that look at how specific

communities navigate food within the colonial world system, or how the creation of food programs assist in addressing food insecurity. When documenting local food initiatives, it is important to take into consideration the differences between various Indigenous groups in terms of nutritional status (Kuhnlein & Receveur, 1996), culture (Willows et al., 2009), and hunting practices (Samson & Pretty, 2006). It is one thing to understand the need for culturally and regionally appropriate food in remote Indigenous communities in Canada, but another to understand the reality of these foods and their impact on food security at the community level. This thesis specifically looks at the impact local food procurement initiatives have on food security in one First Nations community in northern Ontario, in order to be conscious of their views on the struggles and efforts related to building food capacity and autonomy. It also seeks to understand traditional food practices already existing in the community, and how and if local initiatives such as gardening intersect with traditional subsistence practices and what this means for food security initiatives moving forward.

The Wapekeka First Nation

Northern Ontario is one region that has undergone multiple stages of abrupt and dramatic nutrition transition. These changes in food availability and intake have been associated with the detrimental health effects people in this region are experiencing (Pal et al., 2013). The proposed study will take place in Wapekeka, an Oji-Cree First Nation located in northwestern Ontario between 50 and 55 degrees latitude (Indigenous and Northern Affairs Canada, 2017a). The community has a registered population of 369 (Indigenous and Northern Affairs Canada, 2017). For the Ojibwa, Cree, and Oji-Cree people in this region, government intervention officially began with the signing of Treaty 9 in 1906 (Pal et al., 2013). First Nations groups ceded lands in exchange for government provided provisions that were only required after the expanding fur

trade created big game food shortages and subsequent altered hunting patterns (Pal et al., 2013). In their study involving Wapekeka First Nation Pal et al. (2013) explained,

> It was in this context that First Nations leaders in the region singed the treaty expecting in return a permanent reserve settlement with community amenities, infrastructure and financial aid. After adhesions were made to Treaty 9 in 1932, permanent settlements and stores were established. The creation of stores meant immediate access to supplies and food, rather than having to travel hundreds of kilometres to access goods at the closest Hudson Bay post. The creation of the store had immeasurable impacts on local lifeways, in particular hunting and gathering subsistence practices. (Pal et al., 2013, p. 138)

Consequently, the people who now live in the Wapekeka First Nation have undergone dietary lifestyle transformations that have resulted in alarming rates of obesity related diseases (Imbeault et al., 2011). These abrupt changes altered food consumption patterns, where people moved from an active off-the-land (primarily hunting and fishing) subsistence-based lifestyle to a more sedentary community-based existence. The Wapekeka First Nation has limited access to nutritious foods in large part due to the high costs of shipping goods to remote regions.

Methodology

The fieldwork examples in this thesis were drawn from time spent living and working with community members in the Wapekeka First Nation. The research presented herein is part of a larger collaboration with the community over the last decade. Formal research methodologies were used surrounding the topics of nutrition, health, food procurement, and traditional food. An exploratory, critical ethnographic approach was employed, and more informal and natural moments and conversations were used to gather information about the individual understandings of food in the community. The main objective is to learn about community members'

perspectives on food practices, and how local food efforts might contribute to increasing food security. A part of the focus was identifying where the power lies within food systems, how it is maintained, and how this might be changed (Angrosino, 2007; Hammersley & Atkinson, 2007). Looking at the meanings around food through the theoretical lens of border thinking helped with this focus. Researchers participated in and observed local food practices and initiatives to identify how they might serve as an expression of local culture and knowledge within the larger global imaginary. Examining food practices as a type of epistemic enunciation will enable a deeper understanding of the relationships with food, and thus the relationship with larger food systems.

Indigenous Methodologies

The researchers for this project do not share Indigenous heritage or identity and do not wish to overstate their ability to utilize Indigenous methodologies (IM). However, the longstanding partnership with the Indigenous Health Research Group (IHRG) and the Wapekeka First Nation has been critical in shaping how researchers have come to work with community leadership and members (Robidoux et al., 2012). In order to support two-direction learning and lateral sharing of information researchers fostered pre-existing connections and relationships in the community (Simpson, 2014). This research project is part of a larger project with the IHRG at the University of Ottawa and the Wapekeka First Nation. The IHRG has been working in close collaboration with the Wapekeka First Nation since 2007 and it is as result of this longstanding partnership that this thesis was possible. In an effort to advance Indigenous self-determination, the team used a community-centered research framework guided by IM.

Kovach (2009) states that the community-based research approach is a Western methodology intended “to counteract the heinous reputation of Western research in indigenous

communities" (p. 13). We achieved participatory research in an IM framework by participating in ongoing fluidity and collaboration, we aimed to reach regional community partners to create participatory action. It was essential to permit a collaborative research process, one that holds Indigenous perspectives at its core. IM promotes a partnership approach that benefits Indigenous as well as scholarly communities (Kovach, 2009; Tuhiwai Smith, 1999). This process also helps ensure that the community's interests are recognized (Battiste & Henderson, 2000). The proposed study will be shaped by community partners who have put forth community-defined issues. Along with creating a collaborative project, another important criteria for following IM in this context was maintaining a consistent, open dialogue throughout the process. IM and other participatory community-based methodologies highlight the challenges posed by inequitable power relationships, and call for Indigenous peoples' self-determination (Alfred, 2005).

Ethnography

This type of research entails studying people interacting with their cultural environment through intensive fieldwork over time (Gullion, 2016; Hammersley & Atkinson, 2007; Singer, 2009). Ethnography is a means for researchers to understand a particular aspect of life by identifying a group of people or an activity of interest and investigating what happens in that setting (Gullion, 2016). Critical ethnography is an ethnographic approach that examines culture, knowledge, and action (Thomas, 1993). As Thomas (1993) wrote, "it deepens and sharpens ethical commitments by forcing us to develop and act upon value commitments in the context of political agendas" (p. 3). Critical ethnographers describe, analyze, and open to scrutiny, power centers, and assumptions that repress and constrain (Thomas, 1993). Thus, it was used in this way to understand the complexities and challenges of developing and sustaining local food initiatives within this cultural and geographic setting. The ethnography in this case was

conducted just over a period of six weeks in spring 2017 and fall 2018. However, as this project is part of a much larger collaboration with the community, information about the community was able to be gathered from past research, from research team members' stories about the community, from social media outlets, and from the community members themselves as they were comfortable with the research team. During their time in the community, researchers not only were engaged with the hoop house project, but also spent time engaging in casual hunting activities, witnessed food preparation, community cookouts, and informal meals.

Methods

In order to examine local food practices in the Wapekeka First nation, a mixed-methods approach housed within the framework of ethnography was used. Ethnography is in itself a combination of research methods, including but not limited to participant observation, formal/informal interviewing and description. It involves what Hammersley and Atkinson (2007) describe as "the ethnographer participating, overtly or covertly, in people's daily lives for an extended period of time" (p. 1). The fieldwork for this study involved primarily semi-structured interviews and participant observation, it also utilized informal time spent visiting with the community and natural conversations as a method to gain an in-depth and natural understanding in everyday settings (Della Porta & Keating, 2008). Ethnographic methods are used to study social issues or behaviours that are not yet clearly understood (Angrosino, 2007; Tedlock, 2003). In the following section I will discuss how I used the aforementioned methods to gain a detailed understanding of participants' perspectives on local dietary practices and efforts to rebuild local food initiatives.

Participant Observation

Participant observation is an important component of ethnographic research that involves researchers both interacting and observing local cultural practices. In the 20th century participant observation emerged as the principle approach to ethnographic research, and it began to rely on the cultivation of personal relationships as a way of learning about culture (Gullion, 2016). Through participant observation, it is possible to describe what goes on, who or what is involved, when and where things happen, and how they occur, all from the standpoint of the participants (Cresswell, 2013). Researchers performed both participatory and non-participatory observation by both taking part in food practices in the community, and studying actions as an outside observer (Dewalt & Dewalt, 2002; Grey, 2014). The Wapekeka hoop house was assembled in May 2012, and gardening activities were established shortly thereafter. Researchers left the community a week before planting took place, but they were able to make direct observations during this time on the construction and decision making processes surrounding the project.

Researchers also participated in and observed several traditional hunting practices during fieldwork. Researchers were able to gain a multi-faceted perspective in this way (Cresswell, 2013). The richness of data collected in participant observation is one of the greatest strengths to this method (Dewalt & Dewalt, 2002). Observations were made and recorded in detailed field notes, and a daily reflective journal during community visits was kept in order to capture the context in which the participants live (Dewalt & Dewalt, 2002; Jorgensen, 1989; Ortlipp, 2008). Notes were taken on both participation in community food procurement activities and events, and on observations of the community and their actions during fieldwork.

Semi-structured Interviews

Broadly, the interview can be seen as having "the purpose of opening up the possibility of gaining an insight into the experiences, concerns, interests, beliefs, values, knowledge and ways of seeing, thinking, and acting" (Schostak, 2006). Semi-structured interviews are commonly framed around pre-set open-ended questions, with additional questions that are established to probe for further explanation or clarification (DiCicco-Bloom & Crabtree, 2006). The type of questions in a semi-structured interview are usually "well suited for the exploration of the perceptions and opinions of respondents regarding complex and sometimes sensitive issues and enable probing for more information and clarification of answers" (Louise Barriball & While, 1994, p. 330). Open-ending probing questions are crucial to the interview process because they elicit further dialogue to help the interviewer gain a more detailed understanding (Whiting, 2008).

The research team returned to the community in September 2017 to conduct informal, semi-structured interviews with knowledgeable community members. There are only a few households in the Wapekeka First nation that maintain traditional food practices (Leibovitch Randazzo & Robidoux, 2018). Individuals from these households that had pre-existing relationships with members of the research team and knowledge about traditional subsistence practices were part of the project design from the start. Initially adult participants (n=5) were purposively selected based on their connection to the researchers and the hoop house project. Participants included community members who had been involved with conceptualization, construction, gardening, or caring for the hoop house in some way. The interviews began on the topic of the hoop house project, but then moved towards more general concepts such as traditional food, hunting, or fishing practices. Snowball sampling helped to identify additional

participants (n=7) not directly connected with the hoop house, but who were able to elaborate on food in the community in general, and their general views on the hoop house. A total of 12 participants were interviewed, they were both male (n=7) and female (n=5) aged 25-45.

The interview schedule was flexible, open-ended, and began on the theme of the hoop house. Community members referred to the hoop house simply as "the greenhouse" and use of this term is reflected in our interview questions and their responses. During each interview, researchers started with open-ended questions such as "what did you think of the greenhouse?" And moved the conversation from there in as natural a way as possible. Eventually, the conversation shifted to traditional food and traditional subsistence practices, starting with "what do you consider to be traditional food?" this line of questioning eventually led up to whether or not the participant felt that food grown in the hoop house is in-line with traditional food practices. Each interview lasted between 10 to 45 minutes, and were conducted in various locations based on participants' comfort level. Based on previous experience working with this community, it was decided that interviews would not be audio-recorded, but detailed notes were taken during the interviews. During previous research (Pal et al., 2013; Robidoux et al., 2012) in this community the use of audio-recorders tended to make people feel uncomfortable and less forthright when answering questions. It was therefore determined to use simple notation with one researcher leading the interview and the second researcher taking notes. Researchers also wrote down what they thought to be representative quotes verbatim during interviews. By the end of the interviews it appeared that a more casual interview setting was created and that participants in general did feel comfortable discussing the topics that were raised. Immediately after the interviews researchers would re-record their notes on a laptop computer and elaborate on any points made from memory.

Data analysis. Thematic analysis (TA) was used to identify patterns of meaning across the interview dataset. A flexible version of TA was used for identifying patterns and interpreting them both between interviews and between the interviews and field notes (V Braun, Clarke, & Weate, 2016). The process began during data collection, where the researchers began noticing similar content and patterns between participant interviews. The first author moved back and forward between the entire data set, and jotted down ideas and potential coding schemes throughout the process (Virginia Braun & Clarke, 2006). Once the first author was satisfied with her familiarity with the dataset, she began identifying possible patterns as codes. Codes were identified both within field notes and interviews. Since there were no recorded interviews to transcribe, the notes from the interviews were instead re-written, and elaborated upon from memory immediately after the interviews. Only a few key quotes from participants were recorded verbatim at the time of the interviews, quotes were also appointed codes during the initial stages of analysis. A preliminary list of sub-themes were formed from the initial codes, the sub-themes were later developed further into three main themes.

The Visiting Way

Part of this thesis used a holistic and natural approach to research in order to address the multiple dimensions of experiences and memories of Indigenous peoples. Researchers began with a community-based participatory research framework surrounding local food efforts, while CBPR did provide valuable insight, it became apparent during fieldwork that was a more useful way to gather information. Wilson (2008) refers to methods of "learning by doing" as "participant observation", with an emphasis on relationships, sharing, and watching. Researchers participated in routine subsistence practices such as checking trap lines, or watching fish being prepared. Learning by doing is a method that invites social relations, and legitimizes different

ways of knowing in academic research (Kovach, 2009). Conversations were had informally that opened up a dialogue between researchers and community members. This was a relational process that played a critical role in researchers' understandings of the community, and the people who live there. Each of these methods contributed to "the visiting way".

The visiting way is a methodology developed through research on Cree land-based initiatives in Ontario, Canada. It is a practical approach to field research and involves hospitality, sharing emotions, knowledge, ideas, and food from the land (Gaudet, 2016). It is important to note that the total time spent in the community by researcher was incredibly short for this kind of methodology. Therefore, this thesis did not fully take into account the way of visiting as a methodology. However, there were small moments with key members of the community that revealed the intimate details in their unique way of life. Pressures of academia, and constraints of funding limited time in the community but nonetheless small moment of thinking, being, or doing that were outside of the dominant Western framework were largely revealed during these natural moments.

Theoretical Framework

Indigenous food systems have undergone dramatic conversions that have altered or replaced traditional foodways with contemporary westernized food practices (Damman et al., 2008; Elliott et al., 2012; Pal et al., 2013; Power, 2008; Robidoux et al., 2012). Irreplaceable knowledge about diverse ecosystems, and how to engage in them for subsistence, along with access to traditional land was compromised when food systems were systematically eroded by colonial governments (Robidoux & Mason, 2017). The difficulties that remote and rural communities are facing today in terms of food access are intertwined with the larger global-agri food system. In a neo-liberal era, the production-oriented GAFS has greatly impacted the ability

of many communities to maintain an adequate, culturally appropriate, and healthy diet (Morrison, 2011) because the current system has dismantled most locally adapted food systems through policies designed to facilitate global trade (Rosset, Patel, & Courville, 2006). The GAFS is largely informed by ideas drawn from a single cultural source: western or colonial ways of knowledge production (Waldmueller, 2015). With new efforts emerging within remote Indigenous communities to combat food insecurity, we must seek new opportunities to engage in de-colonial thought, or for new local ways of knowing to be evidenced. Hopefully, these knowledges can subsequently be used to inform Indigenous food security initiatives. "Border Thinking" a theory developed by Argentine philosopher and semiotician Walter Mignolo (2000) will facilitate the examination of local meanings and priorities produced from and within the so-called "borders" of society. The theory can provide a precise way to explain how local food efforts are being understood by communities themselves, or how lived experiences are located within the legacy of European forms of knowledge actualized by the modern agri-food system.

Border Thinking

This thesis will explore how local expressions of food can emerge both from and despite oppressive Western hegemony by outlining the concept of "border thinking" or border *gnosis*, substantially developed by Walter Mignolo (2000) in his book *Local Histories and Global Designs*. Borders are not only geographic but also political, cultural, and epistemic; the very concept of border implies the existence of people, languages, religions, and knowledge on two sides linked through relations established by differences (Tlostanova & Mignolo, 2012). For Mignolo, border gnosis is knowledge that takes form at the margins of the Western world. When referring to food and Indigenous food systems, borders imply the two sides are linked through relations created within what is referred to as "the colonial difference" (Anzaldua, 1987). The

colonial difference is the enduring legacy of colonialism, or the space where different way of knowing are formed (Mignolo, 2000). In his book, Mignolo (2000) describes the role that the colonial difference plays in contemporary conceptions of the enactment of subaltern knowledges operating on the borders of the current world system. Knowledges that have been historically subalternized and marginalized are restored within the colonial difference, a space where new and powerful constructions of local culture and identity can be made. The concept is best explained by Mignolo (2000) when he wrote,

> The colonial difference is the space where coloniality of power is enacted. It is also the space where the restitution of subaltern knowledge is taking place and where border thinking is emerging. The colonial difference is the space where *local* histories inventing and implementing global designs meet *local* histories, the space in which the global designs have to be adapted (Mignolo, 2000, ix)

The coloniality of power (or simply coloniality) then, is the enduring legacy of colonialism.

Coloniality comes from the substantial post-colonial critique of the violent impositions of western methodologies, epistemologies, and ontology during the colonial period for the purpose of control, domination, and exploitation of both human and natural resources (Waldmueller, 2015). It is the interrelatedness of the practices and legacies of colonialism in social orders that makes coloniality distinct from colonialism; it refers to the longstanding patterns of power that define culture and knowledge production (Maldonado-Torres, 2007) whereas colonialism is the condition that makes border thinking possible (Robidoux, 2012). If the colonial matrix of power is the framework that provided the logic needed for colonization (Dzenovska, 2013; Mignolo, 2000; Mignolo & Escobar, 2001), then coloniality is the underlying logic of this foundation (Mignolo, 2007). It is a concept that interconnects the practices and legacies of European

colonialism in social orders and forms of knowledge (Mignolo & Escobar, 2001). Indigenous peoples in Canada continue to endure coloniality, and continue to live within the colonial matrix of power because colonial repression of knowledges is embedded in our entire world system, including northern Indigenous foodways.

A subtle yet important element of the colonial matrix of power emerges in the form of the coloniality of knowledge, referring to the inclination of global knowledge production to be according to western achievements (Grosfoguel, 2002). We passively accept these seemingly innocent world discourses, such as the productivity-oriented GAFS, without pausing to consider their destructive origins. The coloniality of knowledge continues to contribute to an increasing separation between social, cultural, and economic ways of being that are forced upon Indigenous peoples in Canada in the form of the GAFS. Another component of the colonial matrix of power is the "coloniality of being" (Maldonado-Torres, 2007), referring to the actual subjective influence of global power inequalities since colonial times. It is argued that the global food market is politically created and managed (McMichael, 2004). Power in the food sector depends on the World Trade Organization's rules and the regulation of market relations. Regulations that are embedded in the GAFS and perpetuate globalization, which is justified in the name of broadening consumer choice on a world scale (McMichael, 2004). The influence of market structures on how the world consumes food is the coloniality of being, artificially low prices created from a Eurocentric understanding of food exist and depend on a disregard for the sustainability of local cultures and ecologies.

Border thinking, or border gnosis, addresses the coloniality of knowledge and thus, the coloniality of being; border thinking recognizes that colonization is not a past event in history, but an embedded system that continues to hurt and oppress. This form of thought acknowledges

that the constraints Indigenous peoples experience from colonialism can act as a new point of departure for new cultural meanings to be realized (Mignolo, 2000; Tlostanova & Mignolo, 2012). This does ignore the harm and destruction since the colonial era, but rather expresses that being systemically oppressed and marginalized unavoidably creates an environment within the colonial difference that can foster creative and resilient new forms of culture. Forms that emerge from, and exist despite coloniality. The perception of Indigenous culture as static, unchanging, and unable to form new ways of being ignores the reality of living in the modern world. All cultures, including Indigenous cultures, are continuously changing and adapting (Heldke, 2003). Border gnosis is what strives to foreground the force and creativity of knowledges subordinated during a long process of colonization, and counter the hegemonic knowledges that govern western dominant thought (Mignolo, 2000). Border gnosis, is conceived as a tool for enunciating a particular position that is placed at the border between the imperial and the subaltern by overcoming the knowledge limitations that divide these concepts. Being removed from the central Western model of food means that "people have less access to material resources, such distance can give root to a border consciousness that fosters creative ways to fulfil a variety of important social, economic, familial and nutritional needs" (Pérez, 2007, p.147). Border thinking opens a conceptual space where, rather than suffering from isolation and disenfranchisement, people in marginal spaces can help envision new ways of thinking about food (Pérez, 2007). Understanding our world food system in this way, and how it is interacting with local expressions of food can bring to light lingering injustices and how to best diminish them. Indeed, because the empire of food is political and rests on colonial foundations, it is fast generating counter-movements and forms of de-colonial thought that are concerned with reinstating the local.

Food has continually impacted conceptualizations of individual and collective identity. A growing body of work focuses on questions such as how are these identities, communities, and economies shaped, contested, and negotiated through food practices (Pérez, 2007). The interdisciplinary link between food and culture is beginning to contribute important theoretical findings to the study of food practices and border consciousness. In several cases, the study of border is used to study cross-cultural, or cross-class contact (Abarca, 2007; Fonseca, 2005; Pérez, 2007; Salazar, 2007). It has been shown in previous work that food can be used to reveal cultural, social, and economic identity construction in an "in-between" space in this way (Anzaldua 1987; Long-Solis, 2007). When applied to Indigenous food systems in Canada, border gnosis enables us to conceptualize the transformation of knowledges within traditional food practices, and see local food procurement in remote Indigenous communities as platforms for previously denied ways of thinking and being. The proposed study will be informed by a view that the constraints of coloniality serve as a pivot point from where new meanings of food and food production can be advanced from the margins of society. Border thinking is effective at offering another way of theorizing food studies in Canada, however, the lack of practical applications are a limitation to working with this theory.

The conceptualizations that border thinking offers, especially in the context of remote Indigenous food procurement initiatives, is an interesting topic to imagine. However, the actual utility of it, along with the practical applications remain relatively unknown. There are few projects in Canada that work with border thinking. Those that do, such as work by Robidoux (2012) on First Nations hockey, do not attempt to elicit actual change, but rather examine structures already in place as border thinking. However, this work is very close regionally to what the present thesis is attempting, which shows that work in a First Nations context can reveal

expressions of local culture that provide clear examples of border gnosis. More importantly, it reveals that there is potential for a transformation of local practices that are intertwined in a dominant, global framework (Robidoux, 2012). Border thinking in the Wapekeka First Nation will not be operationalized, but hopefully what will become clear is that there are similarly shared experiences surrounding food that link First Nations peoples together in the face of coloniality and the structures of power that impact everyday existence.

The once local food procurement strategies of Indigenous peoples in Canada were radically transformed, modernized, and integrated into the Canadian market economy. This modern system has the revered virtues of capitalism, such as progress and the generation of revenue. The Western construct of agriculture has come to constitute food in Canada. However, for those who have been left out of this construct, and the accompanying production of knowledge, points of epistemic enunciation emerges in the colonial difference. Border thinking has the potential to reveal the destabilization of a Western understanding of food, and this will be revealed with fieldwork examples of local knowledge in opposition to colonial dominance. What remains clear is that it is the very Euro-Canadian construct of food and agriculture that enables border thinking, and that the notion of border thinking provides important insight into the process of alternative knowledge formation in a global environment. Pointing to the "cracks" within the modern epistemic, and how they can act as resilient new forms of culture, might be an important step toward establishing appropriate and sustainable food initiatives in the Canadian North.

Thesis Format

This thesis is written using the publishable paper format. Paper one will address the community hoop house initiative, and how (if at all) projects like these intersect with traditional food practices and work to improve the issues of food security in First Nations communities. Paper two will look to food procurement strategies in the Wapekeka First nation through the lens of border thinking. The second article will work to provide a better way to understand food practices in northern Ontario, so that food security initiatives can be better informed by the unique and powerful performances of Indigenous subsistence practices. Through these two papers I hope that my research will make a contribution to understanding the gaps in current literature regarding how to improve food insecurity in First Nations communities in Canada. Finally, I hope that my use of border thinking will encourage future scholars to think critically about how they are approaching decolonizing strategies, and that it will provide a new direction for understanding food.

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PART TWO

Article 1[1]

Hoop House Gardening in the Wapekeka First Nation as an Extension of Land Based Food Practices

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Abstract: Northern rural Indigenous communities in Canada are facing many challenges getting regular access to nutritious foods, primarily due to the high cost of market food, restricted availability of nutritious foods, and lack of government support for nutritious food programs. The consequences of food insecurity in this context are expressed in high rates of diabetes, heart disease, and childhood obesity. Many Indigenous communities are responding to issues around healthy food access by attempting to rebuild local food capacity in their specific regions. Important first steps have been taken in developing local food initiatives, yet it remains to be seen what impact these initiatives are having on improving northern food security. This paper explores this question by working with a remote fly in community in the sub-arctic region Ontario to construct a hoop house and develop a school based community gardening program. By using a community-based participatory approach, it was determined that hoop house and gardening initiatives in rural, northern settings have the potential to build up local food production; can develop the skills and knowledge of community members; can engage and involve youth in growing local food; and do align with land-based food teachings. We show that despite widespread and multidimensional community hardships, there was considerable community buy-in and support to the project, giving hope for future development, and providing important insight for those seeking to initiate similar gardening, hoop house, or greenhouse initiatives in northern Indigenous communities.

Keywords: Canada, First Nations, food security, local food systems, hoop house, greenhouses, gardening, Indigenous health, sustainability, traditional food

Indigenous peoples of what is now known as Canada have experienced dietary and lifestyle transformations that have resulted in exceedingly high rates of food insecurity and diet related diseases (Damman, Eide, & Kuhnlein, 2008; Elliott, Jayatilaka, Brown, Varley, & Corbett, 2012; Willows, 2005). Food security includes having physical and economic access to sufficient, nutritious, and safe foods (World Health Organization, 1996). The consequences of food insecurity in this context contribute to high rates of diabetes, heart disease, and childhood obesity (Haman et al., 2010). Food insecurity in communities in the rural North is amplified by factors including poverty (Kuhnlein & Receveur, 1996; Willows, Veugelers, Raine, & Kuhle, 2009), high costs and reduced availability of quality, healthy market food (Ford, 2009; Power, 2008; Socha, Zahaf, Chambers, Abraham, & Fiddler, 2012), lack of government support for nutritious food programs (Skinner, Hanning, Desjardins, & Tsuji, 2013), loss of traditional knowledge, and reduced access to traditional lands (Power, 2008). A growing understanding of the role that traditional (or culturally appropriate) foods play in the diet of Indigenous peoples has motivated an interest in expanding the definition of food security (Walch, Bersamin, Loring, Johnson, & Tholl, 2018).

Local food procurement in the form of traditional food systems is often suggested as a strategy to improve diet quality. Northern traditional or country food security is defined as, "the continued and predictable availability and access to food, derived from northern environments through Indigenous cultural practices" (Paci, Dickson, Nickels, Chan, & Furgal, 2004, p. 1). Many Indigenous communities are responding to issues around healthy food access by attempting to rebuild local food capacity in their specific regions. For the purpose of this article "traditional food system" is used to identify all food accepted within a particular culture that is available from local resources, such as hunting or fishing. The term encompasses aspects such as

sociocultural meanings, and acquisition and processing techniques. While these modes of food procurements are undoubtedly important, research indicates that for rural and northern communities, the net cost of traditional foods procured from the land are comparable or even more expensive than food purchased from the store, and thus these methods often fall short when it comes to improving population health (Pal et al., 2013; Robidoux et al., 2012). In addition to hunting and fishing initiatives, the adoption of sustainable agriculture in the form of community gardening and greenhouses is slowly emerging as an alternative solution to the lack of nutritious market and hunted/gathered foods that are available in many communities (Socha et al., 2012; Spiegelaar & Tsuji, 2013; Stroink & Nelson, 2009).

Local, sustainable, micro-scale food production that gives control back to the community in various forms are being developed as part of the solution to food insecurity. Such initiatives destabilise agriculture as a mechanism of economic development, and enable communities to gain more control over their food systems leading to higher food autonomy. Guided by participatory research methods, this paper focuses on a small-scale community gardening initiative in a remote fly-in First Nation community in northwestern Ontario. The key objective was to assess the general viability of the hoop house gardening initiative in the community and consider if/how it might play a role in improving local food security. Hoop houses are simple, minimally climate-controlled greenhouse-like structures over bare ground that rely on passive solar heating (Russo & Shrefler, 2012). By using a community-based participatory approach to construct a hoop house for local gardening, researchers along with community leadership sought to understand: how feasible is a hoop house in the community; what are the barriers and facilitators for community gardening initiatives in this setting; and finally, would the hoop house be accepted by the community as complementary to traditional food practices?

Food Crisis in the North

While there are many factors that have contributed to the food challenges northern Indigenous peoples face, colonization radically transformed local Indigenous food systems in Canada. Colonialism, which started in the late 15th century, is understood as the establishment of foreign rule over a dependent country, territory, or people. It is generally associated with imperial powers, the legal domination over a subordinate people, the exploitation of human and natural resources, and the redistribution of these resources to benefit imperial interests (Kroll-Zeldin, 2016). Even in the 21st century, whole communities are still trying to recover from the impacts of colonial legislation, structural influences, and tactics of assimilation perpetuated by the Canadian government (Czyzewski, 2011). In this context, the most relevant aspect of colonization was the processes by which colonial policies undermined Indigenous food systems by disrupting and often eradicating land-based food practices (Leblanc & Burnett, 2017), forcing a dependency on highly processed market foods that lack nutrient density (Batal, Gray-Donald, Kuhnlein, & Recerveur, 2004; Bersamin, Zidenberg-Cherr, Stern, & Luick, 2007; Kuhnlein & Receveur, 1996; Pal, Haman, & Robidoux, 2013).

Colonization was and continues to be multidimensional and systemic, and two major policies were responsible for the majority of knowledge subjugation of traditional foodways. First, the government restricted Indigenous peoples' ability to utilize traditional subsistence practices by initiating the reserve system, and introduced a series of repressive policies that directly targeted these practices, eventually making them illegal in many regions in Canada (Alfred, 2009). This contradicted the efforts of many Indigenous groups throughout the country who sought to preserve their abilities to hunt, fish and gather by signing treaties that protected these rights in the court of law. Many governments disregarded these rights within the following decades by

implementing policies that restricted Indigenous peoples' ability to use and manage their lands as they had for centuries, or in some cases millennia (Alfred, 2005). Second, the residential school system was created as an assimilation strategy by the government to prevent environmental, cultural, and linguistic knowledge from being passed down from one generation to the next (Chrisjohn & Young, 1997; Miller, 1996; Milloy, 1999; Streit & Mason, 2017). Not only were generations of children forcibly separated from their parents, they were also taught that their way of living off the land was uncivilized and underdeveloped, and that they needed to be replaced by Western forms of agriculture (Chrisjohn & Young, 1997; Leblanc & Burnett, 2017). Further, there is evidence that in Ontario the schools used labour on their garden plots as punishment, where schoolchildren would be subjected to hours of intense labour, weeding, digging, and carrying water, for various infarctions creating damaging associations with gardening (Leblanc & Burnett, 2017). The basis of almost all early legislation and colonial action pertaining to Indigenous peoples in Canada was to force Indigenous peoples to assume a Euro-Canadian lifestyle and form of governance.

The colonial narrative of economic development forced communities away from local subsistence, and pushed them towards using the land for profit and capital exchange (Leblanc & Burnett, 2017; Loring & Gerlach, 2010). In the region of this study, the European fur trade built new relationships between Indigenous peoples and Europeans, leading to the incorporation of Indigenous communities into a budding capitalist economy (Krech III, 1984). Increasing involvement in the fur trade altered the political economy of Indigenous communities as animal resources were being harvested for capital exchange rather than purely for subsistence/material needs. These new demands on local animal populations (for fur, hides and meat) eventually depleted critical food sources, impacting people's ability to feed themselves and/or to

economically profit from them (Leblanc & Burnett, 2017). Development of the fur trade was the driving force behind land-grabbing and the subjugation of traditional foodways. However despite the interventions that eroded local food systems and altered food practices, there exists a distinct possibility that gardens could be integrated into communities' subsistence strategies in a way that reflects local knowledge (Loring & Gerlach, 2010). While traditional gardening for subsistence practices did not fit the archetype of Western agriculturalists, there is evidence that many communities used local cultivation effectively to fill an important niche in local foodways since the turn of the century (Loring & Gerlach, 2010). However, the creation of a long-term dependency on the government has irreversibly eroded traditional food systems, shifting them towards a Western, market-based diet (Morrison, 2011; Rudolph & McLachlan, 2013).

In Indigenous communities the shift within food systems is referred to as a "nutrition transition" (Samson & Pretty, 2006), characterized by a rapid westernization of diet and lifestyle that is associated with rising prevalence of chronic disease (Damman et al., 2008). Dietary westernization has been defined as "the diffusion and adoption of Western food culture" (Uusitalo et al., 2005). For Indigenous peoples this tends to imply reduced consumption of foods accessed through land-based procurement, such as hunting, fishing, and gathering, and an increased reliance on processed foods and drinks high in refined carbohydrates and saturated fat (Batal et al., 2004; Haman et al., 2010). Northern remote food systems include both traditional (or land based) foods and market (or store bought) foods in varying proportions. Northern Indigenous communities typically rely on the Northern Store (owned by the Northwest Company) for market food items. Prices are often exorbitant with this provider. This is in part due to the high costs of food transport, and the monopoly providers exercise over the remote regions they operate in (Haman et al., 2010; Lamden, Receveur, Marshall, & Kuhnlein, 2006; Pal

et al., 2013; Robidoux et al., 2012). The excessive costs make it difficult for northern residents to purchase nutritious foods, which are often scarce in northern stores. The challenges these communities face have sparked political and academic movements that attempt to define and combat issues regarding northern food access.

Food Security and Food Sovereignty

At the World Health Summit of 1996, the World Health Organization (WHO) defined food security as existing "when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (World Health Organization, 1996). This definition takes into account physical availability of food, economic and physical access to food, and food utilization, meaning the sufficient energy and nutrient content of foods (Power, 2008). Food security is a useful concept for addressing issues of hunger and malnutrition across the globe. However, it operates under the assumption that solutions to hunger are economically driven, and enacted by a privileged few. Food security does not take into consideration gaining more control over food systems locally, and does not take into account historical injustices and cultural aspects of food issues. Thus, the term "food sovereignty" coined by La Via Campensina in 1996, has been increasingly employed by scholars and food activists in order to bypass such capitalistic and neoclassical economic thinking (Leblanc & Burnett, 2017).

The notion of food sovereignty is continually evolving, but at its core is a set of objectives based in strengthening community, and increasing social and environmental sustainability in the production, consumption, and distribution of nutritious and culturally appropriate food (Desmarais & Wittman, 2014). Contrary to the food security framework, food sovereignty places more control into the hands of those who have been systematically excluded from the

formulation of food policy, and places them at the centre of decisions on food systems (Coxall, 2014). Food sovereignty is useful within an Indigenous context because it offers a way of thinking about reasserting control over one's food. This framework recognizes that Indigenous peoples living in northern Canada suffer from the cumulative impacts of many deliberate disruptions to their sovereignty. Food sovereignty in Canada stresses the importance of decolonization, self-determination, and the inclusion of local subsistence practices as key elements to sustainable food systems (Morrison, 2011).

Land-Based Food Efforts

Local subsistence practices in northern Indigenous communities typically involve traditional foods that are hunted, gathered, or fished. There are many constraints surrounding traditional harvesting practices, such as lack of time, money, or resources (Robidoux & Mason, 2017). Further, the North is experiencing many rapid socio-economic and ecological changes that relate to climate change (Brinkman et al., 2016; Ford, 2009). The abundance of wild game has been directly and indirectly impacted by climate and environment change, for example on the distribution and abundance of fish and game species (Loring & Gerlach, 2010; Wesche & Chan, 2010). Indigenous peoples' reliance on local wild resources means that climate impacts on ecosystems have a particularly important impact on subsistence. Dependence on regional ecosystems also leaves Indigenous peoples vulnerable to the impacts of contaminants and pathogens on the quality of subsistence foods (Seabert et al., 2013). Regional ecosystems in Canada are incredibly diverse, therefore blanket solutions to improve local food access using traditional harvesting practices are variable and often ineffective. What works to revitalise traditional food practices in one area may not be effective for a neighbouring community, or even in a subsequent year. As a result, some Indigenous peoples in Canada are adopting

alternative food strategies that involve non-traditional food procurement methods. Subsistence agriculture is one such example, which can involve agroforestry, community gardens, greenhouses, and wild berry harvesting (Skinner, Hanning, Metatawabin, & Tsuji, 2014). The focus of this paper is on the introduction of a small-scale community hoop house garden and how it might help increase access to nutritious food.

There are few published studies focusing on gardening initiatives with Indigenous groups in Canada (Barbeau, Oelbermann, Karagatzides, & Tsuji, 2015; Fieldhouse & Thompson, 2012; Lombard, Forster-Cox, & O'Neill, 2006; Viola, 2006), but those that do suggest local food production is a viable strategy to improve food security (Fieldhouse & Thompson, 2012). For many northern Indigenous communities, gardening without a greenhouse or hoop house may not be feasible due to climatic conditions such as permafrost, and considerably shorter growing seasons (Skinner et al., 2014). Documentation on a community greenhouse project in Fort Albany First Nation in northern Ontario (Skinner et al., 2014) reported that while the amount of food grown in their community greenhouse would not be able to sustain many people overall, the space could be used to address issues of food access by other means such as to germinate seeds for cultivating home-based gardens. The researchers argue that incorporating gardening in Indigenous communities builds knowledge and skills amongst community members, and helps improve the social and physical environment (Skinner et al., 2014; Viola, 2006). Similarly, the Inuit in Hopedale, Nunatsiavut addressed the limited supply of nutritious foods available in their community by implementing the Hopedale Community Garden Program, which also included germinating seeds prior to planting them in their community garden to address climatic barriers (Our Food in Nunavut, 2015). Ultimately, initiatives such as these can address issues that affect access to food, and can ultimately play a part in reducing dietary related disease (Lombard et al.,

2006). However, the feasibility of such projects is entirely dependent on context as each community will have distinct abilities and needs, and what works in one community will not necessarily translate to another. Each is also facing its own history of colonization and destruction of traditional food systems. The spatial and temporal land use that is most traditional to its peoples varies, and integration of gardening must reflect local knowledge, awareness, and responsiveness to unique ecosystems (Loring & Gerlach, 2010). Further, long-term involvement is necessary to see how the project works over time. In order to achieve this, there must be a long-term commitment from external partners and funding sources to ensure sustainability. Thus, it is critical to foster longstanding and sustainable relationships between individual communities and key stakeholders.

Research Context

The Indigenous Health Research Group (IHRG) at the University of Ottawa has been working and building relationships in this area of northern Ontario for the past decade. The multidisciplinary group of researchers originally partnered with the Nishnawbe Aski Nation (NAN) in 2006, and have continued to foster relationships in the region ever since (Robidoux & Mason, 2017). The present project was supported by the Michaëlle Jean Centre for Global and Community Engagement, and by research members from the IHRG. The authors applied for funding for the project in January 2017, after discussions with Wapekeka First Nation leadership about possible strategies to address community food challenges. In February 2017 funding was secured from the Students for Canada's North scholarship and the Alex Trebek Challenge and Innovation Fund (Michaëlle Jean Centre funding programs), and initial stages of planning for a community hoop house garden were set in motion.

Study Location

The proposed study will take place in Wapekeka, an Oji-Cree First Nation located in northwestern Ontario between 50 and 55 degrees latitude (Indigenous and Northern Affairs Canada, 2017a). The community has a registered population of 369 (Indigenous and Northern Affairs Canada, 2017). For the Ojibwa, Cree, and Oji-Cree people in this region, government intervention officially began with the signing of Treaty 9 in 1906 (Pal et al., 2013). After adhesions were made to Treaty 9 in 1932, permanent settlements and stores were established. The Wapekeka First Nation is geographically remote, with year-round access by plane, and access by a snow/ice road after freeze up. Community members in this region were sustained in the past by a traditional food system of hunting, fishing, and gathering that has been degraded by colonization, climate change, environmental contaminants, and a heavy reliance on the market food system. Over the last few decades, the number of hunters in the community has severely declined, with only about 10 household with individuals that hunt year-round (Leibovitch Randazzo & Robidoux, 2018). There is one store in the community that has basic food and household items. When fresh produce is available, it is often in poor condition and extremely expensive. For those community members who have the means to travel by truck 30 minutes over a rugged road to the neighbouring community of Kitchenuhmaykoosib Inninuwug (Big Trout Lake), more store food options are available at slightly lower costs, but still limited and expensive compared to the closest urban centers of Sioux Lookout or Thunder Bay (Leibovitch Randazzo & Robidoux, 2018; Robidoux & Mason, 2017).

Methods

This project was part of a participatory research design that the IHRG has been using for the past decade in their research with diverse Indigenous communities (Robidoux & Mason,

2017). The research is informed by Indigenous research methodologies (IM). In order to support two-directional learning and lateral sharing of information, researchers fostered pre-existing connections and relationships in the community (Simpson, 2014). The researchers for this project do not share Indigenous heritage or identity and do not wish to overstate their ability to utilize Indigenous methods. However, the longstanding partnership with the IHRG and the Wapekeka First Nation has been critical in shaping how researchers have come to work with community leadership and members. Throughout all stages of the project researchers actively engaged with community leadership and community project members to determine the scope and direction of the research. Participants signed consent forms which included the option for their identities' to remain anonymous unless otherwise stated by them. In this case, the option to use real names was included because we felt it fitting to give credit to the outstanding work of the many volunteers and participants involved in the project. Only one quoted participant wished to have his/her real name remain anonymous. All research activities underwent ethics review by the University of Ottawa's Research Ethics Board.

Community-based Participatory Research

Starting well before the onset of the hoop house construction, the team utilized a CBPR approach to identify, prioritize, address concerns, and bridge knowledge gaps between communities and academics (Ablah, Brown, Carroll, & Bronleewe, 2016). While this approach is often used in understanding health equity research (Frerichs, Hassmiller Lich, Dave, & Corbie-Smith, 2016; Stanley et al., 2015), we believe that many of the key concepts are beneficial to understand the diverse perspectives of community members as well as the complexities of local or regional issues around food access, security and sovereignty. CBPR promotes active collaboration, and has been increasingly used to effectively engage with communities suffering

from health disparities (Frerichs et al., 2016; Townsend et al., 2015). In this project, the researchers worked in partnership with Wapekeka First Nation leaders and health officials in order to identify key concerns as it relates to food challenges, and develop a gardening initiative built with and for community members. A CBPR approach within greenhouse or gardening projects creates avenues for building individual and community empowerment, whereby program champions and community members are able to take control over initiatives that they feel are worthwhile (Skinner et al., 2014). Our approach allowed researchers and community members to exchange traditional knowledge, science knowledge, and varied skills and expertise to address a complicated problem.

CBPR has become an important framework for engaging in research with Indigenous peoples (McHugh, Coppola, & Sinclair, 2013; McHugh & Kowalski, 2009; Townsend et al., 2015). However, there were challenges to using this approach as well. The project took considerable financial and time investments upfront. It was a slow and long process that required ongoing development of relationships and trust between community members and researchers. Fletcher (2003) argues that there is not one single process to engage in CBPR; but it is necessary to ensure that community partners are engaged in all of the phases of research. The research team relied heavily on pre-existing relationships with community members, and while the hoop house project itself lasted a span of approximately six months, it was a part of a much larger ongoing effort to address health challenges in the Wapekeka First Nation. The primary advantage for using a CBPR approach is its ability to identify the specific knowledge and perspectives that a diverse group of community members may represent. In addition to stimulating action oriented results, this type of research is very conducive to the development of policy that benefits individuals and communities as it better reflects their needs and experiences (Jagosh et al.,

2015). As outlined below, this methodology also aligns well with a variety of methods from the social sciences and humanities.

Fieldwork Observations

The fieldwork for this project involved an approach that included semi-structured interviews with local food champions and community members, as well as participant observation. The hoop house was assembled in May 2017 and gardening activities were established shortly thereafter. Researchers left the community a week before planting took place but were able to use participant observation to make direct observations during this time on the construction, and decision-making processes surrounding the project. Observations were made by the research team and recorded in detailed field notes. The first author also kept a daily reflective journal during community visits in order to capture the context in which the participants live (Dewalt & Dewalt, 2002; Ortlipp, 2008). Research members made two visits to the community, each lasting between two and three weeks, during May and September 2017. Interviews were conducted during the September trip only, after the hoop house had been constructed and operating throughout the summer. The purpose of the first visit was to help construct the hoop house, prepare the garden beds and plant seeds, whereas the second visit was largely to follow up with the community partners, to assist in the harvest, prepare the garden beds for the following growing season. In addition, the second trip allowed researchers to speak with community leadership, food champions, and community members about the hoop house project, the yields, successes or barriers, lessons learned, and potential steps needed to move forward with and improve the project.

Semi-structured Interviews

The research team returned to the community in September 2017 to conduct informal semi-structured interviews with knowledgeable community members (Whiting, 2008). There are few households in Wapekeka that still maintain traditional or land based subsistence practices (Leibovitch Randazzo & Robidoux, 2018), and these community members were part of the project design from the start. Initially, adult participants (n=5) were purposively selected based on their connection to the hoop house, or their involvement with conceptualizing the project, building the structure, planting seeds, or caring for the garden and plants throughout the summer. Snowball sampling helped to identify additional participants (n=7). A total of 12 participants were interviewed, they were both male (n=7) and female (n=5) aged 25-45.

The interview schedule was flexible, open-ended, and centered on the theme of the hoop house. Based on previous experience working with this community, it was decided that interviews would not be audio-recorded, but detailed notes were taken during the interviews. During previous research (Pal et al., 2013; Robidoux et al., 2012) in this community the use of audio-recorders tended to make people feel uncomfortable and less forthright when answering questions. It was therefore determined to use a conversational style of interview with simple notation, with one researcher leading the interview and the second researcher taking notes. By the end of the interviews it appeared that a more casual interview setting was created, and participants in general did feel comfortable discussing the topics that were raised. Members of the community referred to the hoop house simply as “the greenhouse” and this term is reflected in our interview questions and participant responses. To start, researchers used open ended questions such as “what did you think of the greenhouse?” and followed up with questioning such as “what did you like best about it?” The conversations eventually shifted to traditional

food and traditional food practices starting with "what do you consider to be traditional food"; this line of questioning eventually led up to whether or not the participant thought foods grown in the hoop house would be in-line with traditional foods. The formal interviews lasted between 10 to 45 minutes, however informal conversations with various community members throughout the fieldwork were sometimes much longer and provided a much richer community context. Through this process we gained a more in-depth understanding of the challenges many community members face acquiring food, and the potential measures to help improve healthy food access.

Data Analysis

Thematic analysis (TA) was used to identify patterns of meaning across the interview dataset. A flexible, inductive version of TA was used for identifying patterns and interpreting them within both interviews and field notes. The process began during data collection, where the researchers began noticing similar content and patterns between participants. The first author moved back and forward between the entire data set, and jotted down ideas and potential coding schemes throughout the process (Braun & Clarke, 2006). Once she was satisfied with her familiarity with the dataset, she began identifying possible patterns as codes. Since there were no recorded interviews to transcribe, the notes from the interviews were instead elaborated upon and sometimes combined with field notes. Only a few key quotes were recorded verbatim during the interviews. An initial list of sub-themes were formed from the initial codes that included tradition, traditional food, greenhouses, gardening, school, community ownership, school ownership, expansion, development, training, and feasibility. The sub-themes were later developed further into three main themes: tradition, development, and ownership.

Results

Tradition

To help understand the perceived viability of the hoop house garden project and its intersection with traditional food practices, semi-structured interviews and informal conversations about tradition and traditional foods were conducted with community members who were directly involved with the hoop house and in pre-existing local subsistence practices. In order to support two-directional learning and lateral sharing of information, researchers fostered pre-existing connections and relationships (Simpson, 2014). Borrowing from the idea of "visiting" gathered information and worked with the community at practical and grassroots levels. Using a research approach grounded in visiting contributes to a holistic and welcoming attitude (Gaudet, 2016), and it allowed the community members to be comfortable taking up a role as information provider. Throughout the interviews, visits, and fieldwork, community members spoke on and shared stories about the place of traditional food in the community.

The hoop house was an attempt to integrate gardening into the communities' subsistence strategy, and it was therefore important that the project reflect local knowledge. Researchers were careful to be outside of a colonist mind-set by being aware of local social and cultural structures. The values of progress, efficiency, and modernization of the colonial era are outside of subsistence agriculture. Indeed, members of the community are simply seeking ways to bring good food into the community, and in doing so are operationalizing strategies of flexibility and land use. When done in an inclusive and participatory way, it has been shown that Indigenous gardening can be "understood as an activity that many communities successfully incorporated into their round of traditional and customary practices" (Loring & Gerlach, 2010, p. 191). It is for this reason that a key line of questioning was surrounding the theme of tradition, and if

gardening has a place alongside traditional food. One participant explained how "food is important in our community" (Personal Communication, 2017), and further elaborated that people still enjoy attending community feasts where people share traditional foods if they are able. When asked about what was considered to be traditional food, most participants responded that it was any food that is hunted or fished. Community members listed moose, caribou, fish, beaver, goose, and other local species as being traditional foods. While plant foods did not come up immediately, most people did eventually mention that eating wild edible plants (e.g., blueberries) was also considered to be traditional. Although we did not attempt to grow any plants from the local ecosystem in the hoop house, when asked about food grown in the garden all participants except one felt that this food could be considered in line-with traditional food since it was "from the land." Only one participant had the opinion that "food is just food" (Personal Communication, 2017).

One of the women who worked in the hoop house explained that by planting and watching the food grow, she felt connected to the food, similar to more traditional land-based foods. Similarly, another participant expressed a clear affinity to food from the garden because she grew it herself. She made an important distinction between food that she was able to grow, versus vegetables you would buy from a can. There was also a connection made between cooking the vegetables from the hoop house along with traditional meats, as if to emphasize how food grown in the hoop house was aligned with the meat procured from the land. It was explained that wild meats (especially moose) represented the most value in terms of traditional food, but it is often cooked with potatoes. If the potatoes were locally grown, people felt it would fit more closely to the wild meat. Responses such as these show that gardening initiatives can and should be linked to land food programs in the North under the guidance of community

leadership. Growing food opens a space that can be inclusive of traditional teachings, a space that can potentially offer a means to address food insecurity and dietary health concerns. These findings contribute to a body of research that seeks to understand how Indigenous gardening can be successful outside of the Western framework of economic development. Gardening can be integrated into traditional practices, and this research supports that there is an increasingly blurred line between "modern" and "traditional" food practices (Loring & Gerlach, 2010).

Ownership

As both the community and our funders viewed this project as a priority, in addition to a community project coordinator from the Band Office, two community members were hired as staff to tend to the gardens. The hoop house staff were both female, in their mid-twenties, residents of Wapekeka First Nation, and had no previous experience with gardening. Each replied to a job posting in the Band Office, and signed work contracts from May 2017 to September 2017. The primary responsibilities of the hoop house staff were to perform regular gardening upkeep, involve local youth in gardening activities, and attempt to harvest and distribute any vegetables produced. They were instructed briefly by the first author on planting and harvesting, although instruction was minimal. Demonstrating the practicality of simple gardening without intense training was an important factor for the long-term success of the project. Undertaking the project despite team inexperience was a purposeful attempt at demonstrating the feasibility of a hoop house in this context. It does not require sophisticated materials, training, or equipment to cultivate a simple garden for subsistence, and being able to do so would foster a sense of ownership with our hoop house staff.

Constructing the hoop house structure was daunting without prior experience, but the second author was able to use previously established connections for assistance during the build. In

addition to formal project members and the research team, we also received invaluable support from local volunteers Sid, Derek, and Chris. The 12'×32' hoop house in the Wapekeka First Nation (Fig. 1) was constructed using lumber, PVC piping, and 6mm plastic purchased and shipped from the Home Hardware Store in Sioux Lookout (approximately 450 km away). The structure was erected in the span of approximately ten days by research team members, local volunteers and to a lesser extent, students from the elementary school. The hoop house construction was based on a plan designed by Alberta Home Gardening, with instructions on how to build it and materials required for assembly (Alberta Home Gardening, 2008). Raised garden beds were also built inside the structure (Fig. 2) to help keep insects away and to enable soil to thaw more quickly. Prior to the research team's arrival, our local volunteers were asked to determine what would be the best site to locate the hoop house.

Once the research team were on site, it was clear that finding a location would not be easy, as many factors needed to be taken into consideration. On the first day, the research team was presented with the options that were available. The first challenge was finding level land that was relatively free from permafrost, and away from spring flooding. It also had to be in direct sunlight for most of the day, ideally south facing to ensure optimal sun exposure. Access to water was another consideration. Without any other watering source, the hoop house needed to be near a public building to which a garden hose could be easily connected. Perhaps the most important consideration was regarding visibility, which researchers categorized under the main theme of ownership. Placing the hoop house in a noticeable, well-lit, and open location would help to discourage vandalism, something that was deemed highly likely by community members. All of these factors were discussed with the project team and after much deliberation, as well as visiting potential sites, a location was finally chosen. The hoop house site is located between the

gymnasium and the Wapekeka community store. The space is in full sunlight, highly visible, and close enough to the school so that the students can easily be involved in gardening activities. The structure was built in close proximity to the community store, a central hub for traffic in the community. Not only would this discourage vandalism, but it also acted to showcase the various people involved in the project, including both volunteers and students of ages 6-12. The plot of land was flat enough to start construction with little leveling, and close enough to a drainage system that would help relieve spring flooding. The earth at the site would not be rich enough to grow plants, a problem which would be addressed later. With the location chosen after two days in the community, the next step was to implement our afterschool wellness program that ran alongside the construction of the hoop house.

As initial stages of construction began, researchers spent part of each day in the Reverend Eleazar Winter Memorial Elementary School offering basic nutrition classes and introducing the children to the idea of gardening and greenhouses. At the outset of the project, community leadership made it clear that they wished the school was engaged in the hoop house project as much as possible. Under the direction of the principal, the research team worked with students in the classroom to not only educate, but foster a sense of ownership and excitement about the hoop house project within the schoolchildren. The children were given the opportunity to provide input on what was planted in the garden during the school workshops, and they were invited after school to help with simple gardening tasks such as weeding and raking. The children were also encouraged to continue to visit and help with the hoop house throughout the first growing season. It was believed that if local youth were interested and involved in the garden from the outset, the hoop house would be respected and enjoyed by them throughout the growing season. During initial conversations about the project, community leadership and the local coordinator

made it clear that youth should be actively involved in all stages of the project because of their concerns that the hoop house structure would be vandalised.

Six interview participants noted that the hoop house was likely not destroyed over the summer because of the school's involvement with it. The staff repeatedly spoke about the students' curiosity and interest in the garden throughout the summer. One of the staff explained, "The kids were very interested in it, they would ask me to keep it unlocked so they could go play" (A. Nothiing, personal communication, 2017). The involvement of the students created a space where they felt connected and included, and it was that connection that discouraged harm and encouraged curiosity and appreciation. A second participant laughed and said "I can't believe it is still standing!" She went on to explain that "I think the kids' involvement in the greenhouse is the reason it is still going" (D. Foxx, personal communication, 2017). The moments where the youth were able to feel involved in the decision-making process, such as picking which foods were planted in the garden, were critical. Involving the students in this way ensured that they felt a sense of connection to the hoop house and some responsibility for what happened to the structure. This encouraged them to participate in gardening tasks which fostered a sense of ownership once the hoop house was functioning.

A simple, inexpensive, easy to build hoop house was purposively chosen for a number of reasons. First, researchers knew that a less expensive type of structure would mitigate costs, which was essential due to limited funds and the high cost of shipping materials to this region—in fact shipping costs exceeded the actual costs for materials. Second, the project team had little to no experience with construction, warranting a more modest approach for not only construction, but for maintenance and operation. In comparison to a more complex structure such as a polycarbonate one Skinner et al. (2014) constructed in Fort Albany First Nation, the hoop

house structure was simple enough to be realistically completed and operated by inexperienced gardeners, with limited resources, and within a narrow timeframe. This a purposeful demonstration of feasibility, implementing a simple hoop house was categorized under the main theme of ownership. If community members felt as if they had a great deal of control in the project design and implementation, they would feel as if it were their own. The local volunteers were involved in every aspect of project development, from deciding where the structure would be located in the community, to being the primary ones responsible for its construction.

Although the design was relatively simple, constructing the hoop house was not an easy task. The second author initially took the lead to build the frame of the structure, however local community members quickly noticed flaws in construction and the difficulties encountered putting the frame together. One individual who had building skills offered to help, lending his time and equipment to the extent that he was primarily responsible for the hoop house construction. One reason for the difficulty in setting up the frame, was that improper PVC piping was sent by the supplier. The piping was not ridged enough to form the domed support for the structure. A proper frame needed to be made in order to support the plastic covering that would form the clear plastic roof of the hoop house. Without the time or money to amend the problem by getting the right materials, the main volunteer Sid, along with his brother Chris devised a solution to the problem. They decided to substitute PVC pipes with birch saplings that could be carefully bent and tied together, creating makeshift supports for the roof. Through local ingenuity, a sturdy frame was built in a style that was more reflective of more traditional methods of shelter construction often seen in teepees and lean-tos. This is just one example of how local involvement throughout the construction process proved to be invaluable, and likely enhanced community ownership over the project. The second major challenge to be faced was

acquiring nutrient rich soil to fill the raised garden beds. In the original discussions about building a hoop house, it was explained that although difficult to access, there were areas with rich black soil approximately 5 kilometers outside of the community. In order to get the soil, a heavy equipment operator was hired to use a loader and backhoe to access the soil and have it shipped by truck to the garden. This added delays to construction, the remainder of which could not be built until the soil was delivered. It took two days to retrieve and place the soil in the foundation of the hoop house garden beds.

The hoop house eventually consisted of two ends closed off with plywood, a domed skeleton made of both flexible PVC piping and arched birch saplings, and a covering of 6mm plastic. A lockable door was constructed on one end, and a small hinged hatch for ventilation on the other. Inside temperatures were typically 10 to 15 degrees Celsius warmer than the outside temperature in the spring, and reached highs of almost 55 degrees Celsius in the summer. Without the option of opening the hatch to ventilate the hoop house, it would have been near impossible to work inside during the summer months and too hot for the plants to grow. With the hoop house construction finished, researchers and community volunteers were left to address final logistical and operational challenges. Despite the structure being close to the community gym, a practical means for watering the gardens was not yet established. Researchers discussed several possible solutions to watering with the community partners, including a water barrel or hose access, but were unable to implement anything before they left the community. Prior to the research team departing, hoop house staff were given the seeds and brief planting instructions. A document was prepared and given to staff about seed spacing and watering instructions. These instructions were also verbally explained to both of the staff members, who planted the seeds approximately one week after the research team left the community. Staff were instructed to invite local youth to

help with planting, and to continue to teach basic gardening skills. Bush beans, snow peas, carrots, and radishes were planted in four raised garden beds inside the hoop house as per the students' request. The plants were spaced evenly based on the spacing instructions on the seed packets, and planted into four separate raised beds in even rows. It was in this context that the hoop house staff were left in charge for the spring and summer growing seasons.

From data collected during interviews, participant observation, and simply visiting the community, researchers attributed project success to two key aspects surrounding the idea of ownership. One of the important messages shared by community members was that in order for a project like this to work, it must allow for mutual creation of project ideas, and an equally shared opportunity to implement those ideas, including problem solving solutions. Initiating a project that was co-created, and often led entirely by local volunteers, created a sense of community ownership. Community involvement was critical at several stages. Not only did the local project coordinator initially come up with the idea of a greenhouse-like hoop house, separate local parties volunteered their time during the construction project. Throughout the process the entire community was able to watch local involvement of youth and volunteers, particularly during the construction phase. It was clear that the researchers were not a foreign party with a highly skilled construction team; community members could watch as building challenges were encountered, and ultimately step in, help resolve issues, and eventually help lead the process. Researchers maintained an open dialogue about being inexperienced with everyone upfront, and relied on local help and knowledge to complete the project.

In fact, the construction process was so much in the hands of local volunteers that several of them noted that it was much easier than anticipated. During an interview one of our main volunteers Sid, said that "it was straightforward and easy, except we had to improvise a lot." He

went on to say that "the hardest part was starting it, I think that I would like to try and build one for my family" (S. Anderson, personal communication, 2017). Further, the idea to integrate the hoop house project with nutrition and gardening workshops was also an idea that came from the community. Community members understood how a project like this would work in the Wapekeka First Nation, and rightly pointed to the students or youth as a means to develop further community ownership over the project. Similar to the research with Indigenous youth that has repeatedly demonstrated that their involvement is imperative to project uptake and success (Forsyth & Heine, 2008; Mason & Koehli, 2012; Petrucka et al., 2016), we recognized that youth involvement would be key to develop connection and responsibility, as well as to promote sustainability in future projects in Wapekeka or other First Nations in the region.

Development

Future development of the hoop house would largely be directed by what happened during the summer months when the researchers were absent from the community, and subsequently what they observed during the return trip the following September. Therefore, the final section is centered on the main theme of development. The research team maintained regular communication with the hoop house staff throughout the growing season, who regularly sent narrative and pictorial updates via social media. It was apparent from the pictures that youth were actively involved in planting the seeds, but it was less apparent how active they were in maintaining (weeding and watering) the garden. Despite several suggestions, a solution to easier watering had not been found and the hoop house staff were carrying 4L jugs of water from the nearby lake to water the seeds. This was very labour intensive, and clearly not an ideal solution, but the staff did their best to ensure the success of the garden. Approximately four weeks after the seeds were planted, the hoop house staff started to send pictures of the plants beginning to

grow via email and social media. It was noticeable that while some plants were thriving, others were not growing properly. Pictures were sent of some vegetables being picked and distributed to the children who happened to be at the hoop house that day. It gradually became apparent that the hoop house staff were doing their best to keep watering the garden, there was little evidence that other forms of gardening maintenance was being performed. It was encouraging to see the hardier vegetables growing, but clearly more work was required if the garden was to produce anywhere close to its potential capacity.

When research team members returned in mid-September, the hoop house was hot and humid in spite of the fall weather. Regardless of limited resources, or fears that the hoop house would be damaged or destroyed, the structure was still standing after the summer growing season. Inside the hoop house, weeds were overgrown and the soil was dry; peas on the vine had ripened and waned, with new ones growing over the withered ones. There were carrots and radishes that had ripened and then rotted, left untouched or unnoticed in the garden beds. But despite this, a number of vegetables had grown. Both of hoop house staff exhibited surprise about how easy it was to grow vegetables, and each expressed the desire to undergo future training. The idea of future training was included in the the main theme of development. They were so pleased about being modestly successful at gardening in the pilot year that one of the women said that she "would do it in other years, even for free" (A. Nothiing, Personal Communication, 2017). The hoop house staff successfully grew peas, beans, radishes and carrots that were ready for harvest. The structure provided the necessary shelter for the plants to grow and there was enough community interest to keep the garden plots going. At one point during the summer, the primary volunteer set up a makeshift lattice built of branches to help support the growth of the peas. The successes that were achieved with limited resources and support were something to celebrate

with the students at the school, who were invited to participate in the final harvest. The harvesting began as the youth and the hoop house staff were keen to participate.

The students were instructed to dig around in the garden and set aside any vegetables that they found, and then discard any non-vegetables. Together, four gallon-sized bags of carrots, peas, bush beans, and radishes were harvested. The students were also liberally eating the vegetables straight from the garden with excitement. They had never before seen fresh vegetables from a garden and many had questions about what was being picked, what was edible, and what certain plants tasted like. At one point approximately 10 youth filled the hoop house, excited by what their garden had produced and taking part in picking the vegetables. It took approximately two hours to pick and sort the vegetables, which were then washed and placed in Ziploc bags. The vegetables were then given to the school to be distributed for snacks. Once all the vegetables were harvested from the garden, the remaining plants and weeds were removed and the ground turned over with rakes and shovels. The garden beds were then built up with lumber and logs to help increase the soil depth for the following year.

Three of the four garden beds were covered in cardboard for the winter, while the remaining garden bed was used for a final lesson with the students. Planting garlic in the fall is often recommended as the bulbs are frost tolerant, and therefore planting earlier will yield bigger and more flavorful bulbs when they are harvested the following summer. The aim is to give a long enough period before the ground freezes for the plant to develop roots, but not enough time for it to form top growth before freezing temperatures. This was identified as another teaching opportunity that could be used to gauge continued interest in the garden. Researchers again visited classrooms to teach a lesson about garlic and to invite the students to the hoop house to plant the bulbs. The garlic planting session was highly successful, as it was clear that the students

were still interested in the hoop house and eager to help. Getting the youth out to the hoop house months later was an encouraging demonstration of continued interest. Approximately eight students showed up after school to help plant around 30-40 garlic cloves. The garlic bed was uncovered and researchers were left to wait with the hope that spring flooding would leave the bulbs intact. Preparing the hoop house in any way possible, and keeping the children interested in the garden for the subsequent year using garlic was part of our development strategy. The research team is happy to report that additional funding was secured for the 2018 growing season. Our aims for the future are to improve the hoop house structure that was built with limited resources, construct better raised garden beds inside the hoop house, and develop a more efficient watering system, and plant seedlings indoors so a broader range of vegetables can be planted. Adjacent to the hoop house structure, a garden plot will be developed where hardier vegetables such as potatoes will be planted. One of the main features of the program will be again to involve the schoolchildren in all stages of planting and hoop house development. It will be essential to continually involve as many youth and community members as possible to ensure the future success of the hoop house project.

The importance of community involvement during implementation was undoubtedly essential, however equally significant is the longstanding partnership between the community and the research team that we will continue to foster. Community members were comfortable approaching members of the research team to offer advice or to provide feedback on how to develop the project in the future, especially so that it has broader reach within the community. In each of the interviews or conversations, participants responded favourably to the idea of expanding the project, and offered recommendations for moving forward. Many participants suggested that having more public presentations (in person and over the local radio station) at the

outset of the project would have led to increased awareness about what the hoop house was for, and would have encouraged more community involvement. Other recommendations included building a more efficient watering system, hiring more support staff, providing more training for staff members, and building larger garden beds. Another interesting suggestion was to connect the gardening project to the existing land-based food and traditional teaching initiatives in the community. Derek, a longstanding community food champion, runs a program to take school aged youth onto the land to learn about traditional practices. Tying the hoop house project with this program would further connect the garden to local food practices and assist with project sustainability.

One of the main questions surrounding the hoop house under the theme of development was how much impact it could have on improving local food security issues. While there were many positive outcomes of the project, such as engaging youth, increasing local knowledge of gardening, and demonstrating community capacity, considerably more investment in the hoop house and its potential vegetable production would be necessary to even begin having an impact on daily dietary needs. If the raised garden beds produced at full capacity, there still would not be enough vegetable production to feed the whole community, even for short periods of time. However, the project illustrates that even the simplest of greenhouse-like structures can extend growing seasons by two to three weeks on either end (spring and later summer), and that communities could supplement (if only seasonally) vegetable intake through local gardening. In addition to the actual food production, the hoop house project did produce a sense of accomplishment and interest amongst project staff and volunteers, and perhaps most importantly, local youth. At the core of food sovereignty initiatives is a set of objectives based in strengthening community, and increasing social and environmental sustainability in the

production, consumption, and distribution of nutritious and culturally appropriate food (Desmarais & Wittman, 2014). Thus, food sovereignty was included under the main theme of development. The hoop house project was most concerned with simply bringing healthy food into the community in a food security framework. However it did offer steps for regaining control over food efforts that were disrupted by colonialism. Indeed, the outcomes of the project are larger than food intake. Food sovereignty in Canada stresses the importance of decolonization and self-determination, and including local gardening efforts into this framework in an inclusive, collaborative, and culturally appropriate way can fit the food sovereignty paradigm and strengthen community efforts towards increasing autonomy. This hoop house is not a solution in itself, but it does offer a potential strategy for developing initiatives that combat food insecurity, and in the process, foster an interest in nutritious food, in local food production, and in the possibility of building grassroots solutions to address health challenges.

Conclusion

The success and sustainability of many Indigenous health and food initiatives have been correlated with the presence of and connection to program champions (O'Loughlin, Renaud, Richard, Gomez, & Paradis, 1998; Scheirer, 2005; Skinner et al., 2014), and this project is no exception. Identifying existing action-oriented community members and involving them throughout the project was an important step towards establishing the hoop house project. This study described only one growing season, and did not have high enough yield production to assess its potential impact on community energy needs. However, these successes indicate that with proper care and motivation, and a firmly established gardening and harvesting routine, the project could indeed assist in making fresh vegetables more readily available to community members. Knowledge gained during this initial phase will be valuable for future growing

seasons. While it is beyond the scope of this paper to study the long term outcomes of the hoop house project in the Wapekeka First Nation, future research regarding the hoop house gardening could examine some outcomes regarding the knowledge and skills students gain in nutrition and gardening programming. Findings could have important relevance for future projects and programs addressing food security issues.

The inflated costs of market food in the North, limited availability of nutritious foods, and lack of government support for nutritious food programs are the primary reasons for food insecurity for northern Indigenous communities (Skinner, Hanning, & Tsuji, 2006). This paper examined a simple, hoop house gardening project that was implemented in the Wapekeka First Nation as a means to address some of these concerns. Results of this study indicate that hoop house and gardening initiatives in rural, northern settings have the potential to build up local food production; can develop the skills and knowledge of community members; can engage and involve youth in growing local food; and align with land-based food teachings. It is important to establish ownership both with local youth and the community as a whole to ensure lasting impacts. Equally important is to look to community supports for help and ideas, and to integrate gardening with traditional food practices to establish greater meaning in Indigenous contexts. While the food yields from the first growing season of the hoop house were relatively negligible, the project revealed significant findings regarding the relationship between modern gardening initiatives and traditional food practices. Small hoop house, greenhouse, and gardening interventions in the North are a simple, micro piece of the solution to food insecurity. Part of what they offer is less the tangible relief of hunger, but more so a positive space for strengthening partnerships, producing innovation, and creating local food champions.

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Figures


Wapekeka
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Figure Captions

Figure 1. Photograph of the hoop house at the end of construction. Photograph taken by Author 1.

Figure 2. Raised garden beds in the interior of the hoop house, along with a student from the Reverend Eleazar Winter Memorial School. Photograph taken by Author 1.

Figure 3. Location of the Wapekeka First Nation

Article 2

Forging a New Food Frontier: Navigating the Local, and the Global to Understand Subsistence Practices in the Canadian North

Abstract: Indigenous peoples of what is now known as Canada have experienced rapid lifestyle changes as a result of European contact. Indigenous food systems were systematically eroded by the Canadian government, leading to extremely high rates of food insecurity, and diet related disease. The complicated dynamics and interventions contributing to the erosion of local knowledges have forced a dependence on a market-based food system in remote and northern Indigenous communities in Canada. Communities are experiencing a double burden of the unaffordability or inaccessibility of traditional foods from the land, and the exorbitantly high cost and reduced availability of quality market foods largely due to the cost of shipping to these regions. The entanglement of local practices and global food systems is multifaceted and complex, thus the solution to food insecurity challenges are met with the burden of navigating both the local and the global. The purpose of this article is to analyze local meanings around food in a remote sub-Arctic First Nation in Ontario within the context of "coloniality" and global food systems. Drawing from the work of Walter Mignolo, and his concept of "border thinking", this article explains the complex subsistence practices in the Canadian north and how they are located within a larger global framework. We show that by pinpointing potential "cracks" in the dominant Western epistemic as border thinking, a more useful understanding of food procurement strategies can come to light and offer new direction for culturally appropriate and sustainable food initiatives in the North.

Keywords: Canada, First Nations, coloniality, border thinking, local food systems, traditional food, Indigenous health, food security

Indigenous peoples of what is now known as Canada have experienced rapid lifestyle changes as a result of European contact (Damman, Eide, & Kuhnlein, 2008; Robidoux & Mason, 2017; Samson & Pretty, 2006). Irreplaceable knowledge about diverse ecosystems, and how to engage in them for subsistence, were compromised when food systems were systematically eroded by colonial governments, and later through the Canadian nation state (Robidoux & Mason, 2017). Such factors have led to extremely high rates of food insecurity, and diet related disease especially for remote, northern, Indigenous communities in Canada (Haman et al., 2010; Imbeault et al., 2011; Skinner, Hanning, Desjardins, & Tsuji, 2013). Food security exists "when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (World Health Organization, 1996). Traditional, or land-based (typically hunting, fishing and gathering), food procurement is a widely suggested method to combat food insecurity in northern regions, under the assumption that these foods effectively supplement a market-based diet. However, traditional food practices are extremely expensive, and Indigenous peoples face many barriers to local food procurement such as lack of time or resources. As a result, traditional food in Canada usually falls short when it comes to improving food insecurity and community health (Cidro, Adekunle, Peters, & Martens, 2015; Pal, Haman, & Robidoux, 2013; Skinner et al., 2013). The complicated dynamics and interventions contributing to the erosion of local knowledges have forced a dependence on a market-based food system in many remote and northern Indigenous communities in Canada (Lamden, Receveur, Marshall, & Kuhnlein, 2006; Pal et al., 2013; Robidoux & Mason, 2017). Many communities are now experiencing a double burden of the unaffordability or inaccessibility of traditional foods from the land, and the exorbitantly high

costs and reduced availability of quality market foods due to the high costs of shipping to these regions.

The difficulties that remote and rural communities are facing are also intertwined with the larger global-agri food system (GAFS). In a neo-liberal era, the production-oriented GAFS, along with a loss of access to traditional lands, and socio-economic marginalization have all greatly impacted the ability of many communities to maintain an adequate, culturally appropriate, and healthy diet (Morrison, 2011). Canada's food production industry is falling short when it comes to feeding its own population. Instead, the food industry contributes to the mass production of food commodity exchange. The neglect of local food production is especially problematic when it comes to feeding rural and remote Indigenous communities in the Canadian north. Thus, the Canadian government, various non-governmental organizations (NGOs), and numerous individual communities are seeking alternative ways to introduce healthy foods to remote communities. In Canada, issues of food access are being addressed within broader national organizations such as Food Secure Canada (Koc, Desjardins, & Roberts, 2008). The same issues are being addressed by influential international organizations such as La Via Campensina, which seeks to challenge the fundamental workings of food systems on a global scale (Leblanc & Burnett, 2017; Sage, 2014). While these organizations are engaging with the broader issues of the global food system such as the reliance on international trade, there is also an interplay with localized movements that "seek to generate some of their own solutions to food insecurity, increase food sovereignty, and address health issues" (Robidoux & Mason, 2017, p. 2). Small-scale efforts complement broader national developments by generating new ideas, understandings, and information on how food is working and being understood by communities. The entanglement of local practices and global forces is multifaceted and complex, thus the

solutions to food insecurity challenges are met with the burden of navigating both the local and the global.

The purpose of this article is to critically analyze local dietary and culinary practices in a remote sub-Arctic First Nation in Ontario within the context of 'coloniality' (Quijano, 2000) and global food systems. Drawing from the work of Argentine philosopher and semiotician, Walter Mignolo (2000), and his concept of "border thinking", the complex subsistence practices in the Canadian north and how they are located within larger global foodways will be explained. Border thinking provides a means to understand and engage in de-colonial thought processes to address Indigenous community health issues. The first section of this article outlines colonial stages of disruption on Indigenous food systems, and how these interventions have shaped the development of the contemporary agri-food system in Canada. It will also pinpoint local subsistence practices within the larger Western global imaginary, or what Peruvian sociologist Anibal Quijano termed "the colonial matrix of power" (Quijano, 2000). The second section will explain border thinking, and examine the interdisciplinary fields of food and border studies. The final section will provide fieldwork examples that help illustrate the expression of "border thinking" within the Wapekeka First Nation. This theory will enable researchers to point to so called "cracks" within the dominant epistemic using fieldwork examples from time spend living, working, and engaging in community life. Understanding food procurement strategies in this way points to important first steps toward forging a new food frontier by establishing culturally appropriate and sustainable food initiatives desperately needed in the Canadian north.

Colonial Disruptions of Indigenous Food Systems

Pre-contact Indigenous food systems in Canada were complex, ranging from intensive agriculture in some regions, to mixed farming, hunting, gathering, and fishing in others (Wiebe

& Wipf, 2011). For millennia, Indigenous peoples sustained themselves with food from the land in a semi-nomadic, subsistence-based lifestyle. In the 21st century, foods procured from the land in this way are typically referred to as "traditional" food. The definition of traditional food is fluid, sometimes synonymous with "land" food" or "country food", foods with strong ancestral connections, and/or foods that are understood to be part of a local culture. The meaning varies between regions and individuals, but what is consistent is that there are sociocultural meanings attached to traditional food, and to its acquisition and processing techniques (Elliott, Jayatilaka, Brown, Varley, & Corbett, 2012; Skinner et al., 2013). For the purpose of this article traditional foods are considered to be anything hunted, fished, or gathered from the regional ecosystem. The term "local food" or "local food system" in this context is inclusive of traditional foods, and it also extends to small scale food production in communities (such as gardening) that are not necessarily considered to be traditional. An important nuance of food security is that it is inclusive of having access to foods which are culturally appropriate such as traditional food (World Health Organization, 1996). However, Indigenous peoples' ability to use and manage their lands to access traditional foods has been systematically eroded by the Canadian government through restrictive policies since the colonial era (Alfred, 2005).

Colonization in Canada led to the exploitation of human and natural resources, and redistribution of these resources to benefit imperial interests (Kroll-Zeldin, 2016; Milloy, 1999; Mosby, 2013). During early contact, the European fur trade built new relationships between Indigenous peoples and Europeans, leading to the incorporation of Indigenous communities into a budding capitalist economy (Krech III, 1984). Participating in Western trade system for Indigenous peoples was fundamentally different from previously existing exchanges between Indigenous nations (Leblanc & Burnett, 2017), Increasing involvement in the fur trade altered

the political economy of Indigenous communities as animal resources were being harvested for capital exchange rather than purely for subsistence/material needs. These new demands on local animal populations (for fur, hides and meat) eventually depleted critical food sources, impacting people's ability to feed themselves and/or to economically profit from them (Leblanc & Burnett, 2017). Food no longer was produced and redistributed locally, resulting in different approaches to food production and distribution. The development of the fur trade in this region was the driving force behind government policies that led to the subjugation of traditional foodways.

The basis of almost all early legislation and colonial action pertaining to Indigenous peoples in Canada was to force Indigenous peoples to assume a Euro-Canadian lifestyle and form of governance. Formal control over Indigenous peoples and their territories was solidified when the federal government consolidated all extant legislation pertaining to Indigenous peoples under the Indian Act (Leblanc & Burnett, 2017). This created a paternalistic system and produced conflict in regard to the management of natural resources. Significantly, the Indian Act constrained Indigenous people's abilities to habituate and manage their lands as they had for generations and the "modern" treaty-making process furthered imperial control. The treaties included cession of land and creation of reserves, the guarantee of annuities, the description of the government's obligations and responsibilities, and the continued right to hunt and fish by Indigenous peoples on Crown lands (Miller, 1996; Surtees, 1986). The initiation of the reserve system restricted Indigenous peoples' ability to utilized traditional subsistence practices by creating permanent settlements and gradually introducing community stores (Alfred, 2009). The nutritional problems and increased sedentarism of Indigenous peoples stem from the resulting forced transition from eating off the land to eating the market foods that are highly processed and deficient in nutrient density (Batal, Gray-Donald, Kuhnlein, & Recerveur, 2004; Kuhnlein &

Receveur, 1996; Pal et al., 2013). The federal government further attempted to undermine the ability of Indigenous peoples to determine their own local food systems by eroding intergenerational environmental and cultural knowledge through the introduction of residential schools (Chrisjohn & Young, 1997; Howard, 2014; Miller, 1996; Milloy, 1999). These stages of intervention all had a part in undermining local food systems and food practices by creating a long-term dependency on the government that continues to impact Indigenous food security throughout Canada (Morrison, 2011; Rudolph & McLachlan, 2013).

For remote and northern communities in Canada, the rate of food insecurity is inflated to up to 70% in some regions (Council of Canadian Academics, 2014). In a 2004 federal government review of the food subsidy programs in the same region of this study, reported that commercial food costs were 82% higher in comparison to Ottawa, Ontario (Leblanc & Burnett, 2017). The inaccessibility of healthy market foods is largely a by-product of the oligopolistic market food system (Patel, 2009). Northern Indigenous communities typically rely on the Northern Store (owned by the Northwest Company) for market food items. Prices are often exorbitant under this food monopoly, making it difficult to purchase healthy food items (Lamden et al., 2006; Robidoux et al., 2012). It is a frightening situation that "a few large companies control all aspects of foods imported onto northern reserves, as well as the provision of food producing resources such as seeds, traps, and nets" (Leblanc & Burnett, 2017, p. 19). Most communities heavily rely on market based foods (Lamden et al., 2006; Robidoux et al., 2012; Wein, 1995), however foods procured from the land are still a part of Indigenous diets in northern Canada (Batal et al., 2004; Elliott et al., 2012; Leibovitch Randazzo & Robidoux, 2018; Robidoux et al., 2012), but accessing these foods is not without challenges. It has been documented there are tremendous costs, knowledge, time and labour required to maintain

traditional dietary practices, and some traditional foods procured from the land are comparable or even more expensive than food purchased from the store (Leibovitch Randazzo & Robidoux, 2018; Pal et al., 2013; Robidoux et al., 2012). For the subarctic region of Canada in this thesis, hunting and fishing trips are not always successful and are therefore not a consistent food source (Pal et al., 2013). Traditional foods undoubtedly have a part to play in the northern food system, and a resurgence of land food efforts are desired by many Indigenous communities in Canada (Batal et al., 2004; Elliott et al., 2012; Leibovitch Randazzo & Robidoux, 2018; Robidoux et al., 2012), but these modes of food procurement face the challenge of operating within a system dominated by a global production-oriented regime that does little to support local food.

The National Food System in Canada

The dominant food system in the Global North reflects the wider Eurocentric political and economic context of neoliberal capitalism where industrial production, free-market trade, and export-oriented agriculture is supported and promoted by multinational corporations and government policy (Akram-Lodhi, 2013; Blay-Palmer, Sonnino, & Custot, 2015; Friedmann, 1993). The national food system in Canada links production in rural areas to national and global markets, and promotes large scale production that feeds broader value chains. Increased food production ironically does very little to address the problems of food insecurity, because distribution chains follow capital, not hunger. Despite its success in producing more than enough food to feed the country, Canada has failed to adequately respect, protect, and fulfill the right to food (Levkoe, 2014; UNGA, 2012). The challenge is that the national food system is one which consumers have little or no say in food production, and local producers have little to no ownership in the global agri-food system (W. Wilson, Warren, Sodeke, & Wilson, 2013). In short, local producers are not necessarily feeding local consumers, and have relatively no support

mechanisms to do so because of extreme dependence on export markets under the global food framework (Laforge, Anderson, & McLachlan, 2017; W. Wilson et al., 2013). What we are seeing is that Indigenous food systems in Canada are both acting outside of the global agri-food system (i.e. traditional foods), and are also falling victim to it (i.e poor quality and high cost of shipping food to remote regions). Taken together, the situation of the compromised national food system, and the ill-equipped local food systems constitute a serious issue of who has access to healthy foods (W. Wilson et al., 2013). On a national level, there are funding opportunities that exist to support Indigenous peoples in Canada, but these programs are again operating within a capitalist framework that aligns with a Western understanding of food and the economy.

Several Indigenous and Northern Affairs (INAC) funding initiatives target healthy food access, however, these programs are problematic as very few of them support local, or land subsistence. To support access to healthy foods the federal government implemented the Nutrition North Canada program, which is designed to make nutritious, perishable food more widely available and affordable in northern communities (Galloway, 2014). Based on an examination of the program and government reporting, there is little evidence that Nutrition North is meeting its goal of improving the availability and affordability of nutritious food (Aboriginal Affairs and Northern Development Canada, 2013; Council of Canadian Academics, 2014; Galloway, 2014). Under a separate resource allocation, there are funds available for programs that focus on supporting community projects that build the capacity of First Nations communities to specifically address climate change impacts on their communities (Government of Canada, 2008a). Funding under this allocation could support food efforts that target a decrease in land food availability under the stipulation that these decreases are due to climate change, but this type of piecemeal funding is not doing enough to sustain local food efforts. INAC also

provides funding for land and environmental management and economic development through three funding programs (Government of Canada, 2013). There is one program called the Lands and Economic Development Program (LEDSP) that has some potential for supporting land based food initiatives, but its primary focus is supporting the pursuit of economic opportunities or increasing the number of viable businesses controlled by Indigenous Canadians. LEDSP seeks to "enable First Nations to assume greater control over reserve land, resources and environment including land use planning, environmental management and compliance" and "provide First Nations with modern land management tools and capacities" (Government of Canada, 2013). While resources could support traditional or land-based subsistence activities, allocation criteria is aimed at economic development potential and capacity (Government of Canada, 2008b). Not only is this within a capitalist framework, but it is also a Eurocentric model of development because the government is only supporting projects that develop the economy.

What is questionable about the various funding sources for Indigenous peoples in Canada, is if there is any kind of government support mechanism for healthy food access that is simply subsistence based, or operating outside of a Eurocentric production model. The consequence of operating within a Western framework in this context is that autonomous, sustainable, food initiatives continue to be marginalized. The dominant ideology is that if food is outside of capitalist relations, or not economically productive, then it does not have value. Clearly, local subsistence efforts are in conversation with larger food system frameworks, and they are being dominated by a Western conceptualisation of food and agriculture. Therefore, the space for local food production needs to be seriously recognized as part of a solution to restore northern food systems. In order to grasp how local food production can be part of a solution to address food insecurity and diet related disease, a more effective understanding of the meanings

around Indigenous food practices is necessary. To move forward is to critically address the following question: how are local food practices intersecting with global food systems?

Thinking from the Borders

Northern Indigenous food systems operate under the omnipresent power structures within what Peruvian sociologist Anibal Quijano termed "the colonial matrix of power", a framework consisting of the structures and institutions of power, control, and hegemony that emerged with the colonial world (Quijano, 2000). It is the framework that provided the logic needed for colonization (Dzenovska, 2013; Mignolo, 2000; Mignolo & Escobar, 2001). The colonial matrix of power examines coloniality as the invisible power structure established in the modern world system. Coloniality, sometimes referred to as coloniality of power, is the "the underlying logic of the foundation and unfolding of Western civilization from the Renaissance to today" (Mignolo, 2011, xi). It is distinct from colonialism in that it refers to the longstanding patterns of power that define culture and knowledge production (Maldonado-Torres, 2007). For Mignolo (2000), coloniality is inseparable from modernity as the world's history has come to be understood through the relation between coloniality and the narrative of modernity. Here we are defining modernity not as a historical period (the modern era), but as the collection of socio-cultural norms and practices. Dussel argues that modernity is a European phenomenon, one that is constituted in dialectical relations with a non-European alterity. Modernity is a European affirmation of superiority, one that places Europe at the centre of a world history (Dussel, 1993). This includes the discourse of European enlightenment that was once asserted, but it also developed the irrational justification for violence and colonization, or what is known as the "irrational myth" that it conceals (Dussel, 2000; Mignolo, 2007; Quijano, 2000).

The irrational myth is what Mignolo understands as the logic of coloniality (Mignolo, 2007). Thus, coloniality is constitutive of modernity; there cannot be one without the other. From the perspective of the West, "you see only modernity and, in the shadow, the 'bad things' like slavery, exploitation, appropriation of land, all of which will supposedly be 'corrected' by the 'advance of modernity' and democracy" (Mignolo, 2007, p. 466). Border thinking is possible as a response to the violence of imperial epistemology and the rhetoric of modernity. Coloniality offers a unique way to study local cultural practices that are both influenced by colonialism and resistant to it. For example, how is coloniality fundamentally embedded in everyday food practices, and how does it intersect with social orders and forms of knowledge? The answer, may be located and in a process that brings to light potential "cracks" in the western colonlial imaginary, and to examine how local knowledge is created and expressed as a type of border thinking (Mignolo, 2000).

Walter Mignolo's concept of border thinking (or border gnosis, coming from ancient Greek 'to know') describes knowledge that is generated from the margins of modern western thought. It is derived from Valentin Mudimbe's (1988) work on African gnosis and his analysis of knowledge production at the "intersection of coloniality and traditional knowledge systems" (Robidoux, 2012, p. 20). Border thinking offers alternative ways of analyzing cultural practice within coloniality, locally expressed yet within the constraints of the modern western imaginary. The concept of border is critical, as it necessitates relationality, just like a physical boundary that divides and defines the existence of each entity. Here, borders will be discussed in the same way Gloria Anzaluda conceptualized them in her book *Borderlands/La Frontera: The New Mestiza* (1987) where the epistemic divide is established by "the colonial difference". The colonial

difference is the enduring legacy of colonialism, or the space where different ways of knowing are formed (Mignolo, 2000). The concept is best explained by Mignolo (2000) when he wrote:

> The colonial difference is the space where coloniality of power is enacted. It is also the space where the restitution of subaltern knowledge is taking place and where border thinking is emerging. The colonial difference is the space where *local* histories inventing and implementing global designs meet *local* histories, the space in which the global designs have to be adapted (Mignolo, 2000, ix)

Knowledges that have been historically subalternized are restored within the colonial difference, it is a space where amends can be made by fostering new, creative, and powerful constructions of local culture and identity. Border thinking both strives to foreground the force and creativity of knowledges subordinated during a long process of colonization, and counter the hegemonic knowledges that govern western dominant thought (Mignolo, 2000). Border thinking is a form of thought that offers insight into northern Indigenous foodways, because traditional food practices remain to be a powerful site for the restitution of knowledges and offer a counter to the dominance of the Canadian food system. These concepts are widely applicable to post-colonial critique, and such a body of work is beginning to emerge that applies them to the complexities and the interlocking dynamics of food practices.

Locating Border Thinking and Food

Within the context of social hierarchy, spatial division, or even political narrative, food has continually impacted conceptualizations of individual and collective identity. By examining the history of food and drink, prominent sociologists have long studied human behaviour around food, or the internalisation of food preference as unconscious social constructs (Bourdieu, 1977; Elias, 1969). The processes of food preparation are included in the examination of food, for

instance how the cooking process transforms nature into culture (Levi-Strauss, 1966), and raw foods into meals (Douglas, 1972). More recently, as Pérez (2007) notes, the focus has shifted to key questions that extend this theoretical dialogue: how are individual and collective identities, communities, and economies shaped, contested and negotiated through food practices? A new direction for thinking about the intersection of border thinking and food has slowly begun to emerge. It is not surprising that with the study of borders and food in North America, many scholars are looking to Mexico, or to the United States-Mexican border to study cross-cultural, or cross-class contact (Abarca, 2007; Fonseca, 2005; Pérez, 2007; Salazar, 2007). Such work reveals that linking the interdisciplinary fields of food and border studies contributes important theoretical findings to the study of food practices and border consciousness.

Notably, Long-Solis (2007) explores the extensive history of street food in the economies and cultures of Mexico. The custom of eating on the streets of the city began long before the Spanish conquistadors arrived in the 16th century, and continued throughout Colonial Mexico (Long-Solís, 2007). Presently, street food serves such an important social function in Mexico City that despite being an illegal form of business, health officials allow street food vendors to continue to operate (Long-Solis, 2007). Mexico City street vendors are seen to carve out a space that defies the boundaries of official and unofficial economies. Vendors are "engaged in a dance of getting by, maneuvering past legal, financial and spatial constraints, personal schedules and taste parameters in order to make a living" (Pérez, 2007, p. 144). Street food enterprises are operating in the spatial, commercial, and legal margins of an increasingly globalized and commodified market economy. Despite not explicitly applying Mignolo's conceptualization or language of border thinking, the idea of street food is an example of border studies applied to the conditions of economic and social disempowerment that have been transformed into a source of

strength and longevity. In Mexico City, food is used to reveal a cultural, social, and economic identity construction in an "in-between" space (Anzaldua, 1987; Long-Solis, 2007). In this example, a destabilization of dominant Western epistemologies caused the conflict between local and global perspectives. Local expressions are not simply placed at the margins of the colonial matrix, but challenged coloniality and emerged as something new. The example of street food in Mexico highlights how useful and nuanced this theory can be to examine cultural practices and how it is beginning to be applied to food studies.

In Canada, we can begin to understand and examine food initiatives in a similar way using border thinking conceptualizations. Several First Nations in Canada are exploring the idea of building production-scale greenhouses in an effort to help provide food security for the community and the surrounding area. For example, Cambrian College's applied research division in partnership with Greenhouses Canada collaborated with Whitefish River First Nation to design, build, and test an all-season greenhouse in 2016 to enhance food security and empower the community to supply its own produce year-round (Cambrian College, 2015). Similarly, Nipissing First Nation is exploring the idea of building a production-scale greenhouse in an effort to help provide food for the community and the surrounding area (Kelly, 2018). Greenhouse and gardening projects in a northern setting are a possible avenue to build up local food production (Skinner, 2014). Therefore, in the face of an ongoing history of marginalization and colonial expansion it is necessary to fully understand modern gardening initiatives, and establish effective projects without compromising important local culture. Greenhouses, and dominant Western epistemologies surrounding agriculture and production in First Nations communities expose the colonial difference by exposing powerful cultural articulations. What is being seen in the Canadian North is a collision of worldviews, however they are not necessarily

being set up in opposition to each other. Border thinking is a useful way of understanding the nuances surrounding two oppositional forces intertwining to create something unique, synergistic, and equally powerful.

Research Background

The fieldwork for this article was conducted in the Wapekeka First Nation, an Oji-Cree community located in the sub-arctic region of northwestern Ontario, Canada. Performing research in a grounded way addresses multiple dimensions of experiences and memories by using a series of encounters with the social environment. It has considerable potential for capturing and expressing daily experiences, meanings, and personal memories of oppressed populations in the context of food (Marte, 2007). In this project, researchers began with a community-based participatory framework surrounding local food efforts. A participatory process was useful because it responds to issues of power and control, as well privileging sharing and subjectivity, personal knowledge, and the specialized knowledge of oppressed groups (Denzin, Lincoln, & Smith, 2008). The research is informed by Indigenous research methodologies (IM). In order to support two-directional learning and lateral sharing of information, researchers fostered pre-existing connections and relationships in the community (Simpson, 2014). The research and engagement with local subsistence practices would have not been possible without the longstanding partnerships that the Indigenous Health Research Group (IHRG) at the University of Ottawa has forged with the community over the last decade. The researchers for this project do not share Indigenous heritage or identity and do not wish to overstate their ability to utilize Indigenous methods. However, the longstanding partnership with the IHRG and the Wapekeka First Nation has been critical in shaping how researchers have come to work with community leadership and members.

The Wapekeka First Nation reserve is located at approximately 54 degrees latitude, and the community has a registered population of 369 (Indigenous and Northern Affairs Canada, 2017). Wapekeka is geographically remote, with year-round access by plane, and access by a snow/ice road after winter freeze up. For the Ojibwa, Cree, and Oji-Cree people in this region, government intervention officially began with the signing of Treaty 9 in 1906 (Pal et al., 2013). After adhesions were made to Treaty 9 in 1932, permanent settlements and stores were established. When fresh produce is available in Wapekeka, it is often in poor condition and extremely expensive. For those community members who have the means to travel to the nearest community of Kitchenuhmaykoosib Inninuwug (Big Trout Lake), more store food options are available at slightly lower costs, but options are still limited and expensive compared to the closest urban centres of Sioux Lookout or Thunder Bay (Leibovitch Randazzo & Robidoux, 2018; Robidoux & Mason, 2017). Community members in this region were traditionally sustained by hunting, fishing, and gathering, but over the last few decades the number of hunters in the community have severely declined. There are only about 10 households with individuals that hunt year-round (Leibovitch Randazzo & Robidoux, 2018).

Methods

Formal methods such as semi-structured interviews and participant observation were used surrounding the topics of nutrition, health, food procurement, and traditional food. While these methods have value, what quickly became apparent was that a more informal means to gather information was extremely valuable. This evolved into utilizing small, casual, and more organic connections and conversations in order to gain a sense of local and lived understandings of food.

The Visiting Way as a Method

While more formal research methods did provide valuable insight, and semi-structured interviews provided a starting point, it became apparent during fieldwork that there are more useful ways to gather information. For example, Wilson (S. Wilson, 2008) refers to methods of "learning by doing" as "participant observation", with emphasis on relationships, sharing, and watching in order to learn. Researchers participated in routine tasks such as helping to check trap lines, or were taught skills such as how to hunt birds in and around the community. Learning by doing is a method that invites social relations, and legitimizes different ways of knowing in academic research (Kovach, 2009). Another useful tool was the conversational method. In Indigenous research, conversation is a relational process that involves dialogue to open oneself up to others (Kovach, 2009). Everyday conversations played a critical role in the attempt to gain an understanding of the community and the people who live there.

Each of these methods contribute to the visiting way. This is a method developed through research centered on Cree land-based initiatives in Ontario, Canada. It is a more practical approach to field research, and involves hospitality, sharing emotions, knowledge, ideas, and food from the land (Gaudet, 2016). It is a form of relationality, participating in one another's lives, and it is a methodological inquiry that is embedded in a process. The visiting way recognizes that in Indigenous societies, visiting is perceived as value (Simpson, 2014). The authors of this article worked with the community studying subsistence food practices at practical and grassroots levels for a period of approximately six weeks. It is important to note that while six weeks is a small amount of time to learn about and understand cultural practices, this research period builds on ten years of ongoing and collaborative work between the IHRG

and the Wapekeka First Nation. These relations, between researchers and local community members, were centred on work with the community to help support local food initiatives.

The fieldwork for this project involved an approach that included the visiting way, semi-structured interviews with local hunters and community members, as well as participant observation. Research members made two visits to the community, each lasting between two and three weeks, during May and September 2017. Interviews were conducted during the September trip only. A combination of purposive and snowball sampling was employed to recruit knowledgeable community members to discuss local food practices during interviews. Initially, adult participants (n=5) were purposively selected based on their connection to the research team. Snowball sampling helped to identify additional participants (n=7). The interview schedule was flexible, open-ended, and centered on the theme of food in the community. Based on previous experience working with this community, it was decided that interviews would not be audio-recorded, but detailed notes were taken during the interviews. During previous research (Pal et al., 2013; Robidoux et al., 2012) in this community the use of audio-recorders tended to make people feel uncomfortable and less forthright when answering questions. It was therefore determined to use simple notation with one researcher leading the interview and the second researcher taking notes. By the end of the interviews it appeared that a more casual interview setting was created, and participants in general did feel comfortable discussing the topics that were raised.

Participant observation was utilized throughout the trip and observations that were made by the research team were recorded in detailed field notes. The first author also kept a daily reflective journal during community visits in order to capture the context in which the participants live (Dewalt & Dewalt, 2002; Jorgensen, 1989; Ortlipp, 2008). The visiting way was

used similarly. The first author visited with community members and local hunters previously connected with the IHRG. These connections took place in their homes, on short and casual hunting excursions, and in various other settings such as the Band Office or community store. Utilizing this type of simple interactive conversations enabled a more holistic and natural understanding of the community. Insights gained from visiting were also recorded in field notes at the end of each day. Thematic analysis (TA) was used to identify patterns of meaning across the interview and field note datasets. A flexible version of TA was used to identify patterns and interpret the interview data set (Braun & Clarke, 2006; Braun, Clarke, & Weate, 2016). Patterns were identified both between interviews and between the interviews and field notes. Notes from each interview were read extensively and coded into categories. The categories that emerged from the data were then appointed themes by the researcher in order to organize and examine information gained.

Local Subsistence Practices as Border Thinking in the Wapekeka First Nation

The people of the Wapekeka First Nation are living with a local history of destruction and marginalization. Indigenous peoples in Northwestern Ontario have experienced dramatic changes as a result of modernity, and with it the subsequent exposure to Euro-Canadian culture and technology (Robidoux & Mason, 2017). Pre-colonization Indigenous peoples lived semi-nomadically in what has been described as relative abundance, along with vast knowledge about how to utilize plant and animal resources (Sahlins, 1972). However, the sudden introduction of Western advancements proved to be seductive and indomitable, and new technologies were quickly adopted into everyday life. With new technology came a reliance on tools, and later more advanced technologies like outboard engines, to perform tasks and accomplish a way of life that was previously self-sustaining and autonomous. The depletion of critical food and

material resources quickly followed the integration into hunting and trapping for economic exchange (Robidoux & Mason, 2017). The introduction of Western technologies and knowledge have dramatically altered relationships to the land, to the extent that today in Wapekeka, hunters would not be able to harvest, process, or store land based foods without modern technological advancements. But to say that these adaptations have led to the erasure of traditional food harvesting and local practices would be overstated.

Once again we turn to the idea of border thinking, to consider how contemporary food practices are permeated by western thought and technology, but still expressive of local knowledge and culture. The community of Wapekeka is a government constructed reserve, where people live in government-issued housing and live under a stated imposed governance model. Yet, resiliently and passionately people in the community re-articulate experiences and perform powerful cultural practices that were repressed as a result of colonial expansion. Understanding traditional food practices in the cracks of this system offers a means to re-conceptualize local subsistence practices in the North. Helping to support those practices that were first denied by colonization seems a much more important project than perpetuating the dark side of modernity and Eurocentric understandings of progress. Indigenous peoples' ability to feed themselves was altered because of colonial policies, and autonomous, sustainable, food initiatives continue to be marginalized. Conversely, there are still acts of cultural expression that point to the critical meaning around local foodways and the efforts by community members to restore land based food practices.

Local cultural expressions within the colonial matrix of power were most powerfully observed in the local food gathering/harvesting and in the food sharing practices that were experienced over the course of this fieldwork. Clearly there are aspects that have been dominated

and compromised due to colonization, but what remains clear throughout the following examples is that powerful local expressions of culture still exist and are highly valued surrounding food. While visiting and engaging in conversation with community members in general, it became clear that experiences about traditional food practices were one of the easiest expressions of local life for people to talk about. Engaging with both adults and children in the community revealed important insights about the importance of food. The children were particularly interested in the researchers' engagement with community food events, especially their participation in a community-wide partridge hunt. The children of the Wapekeka First Nation understand that there is underlying value ascribed to the ability to hunt for your own food, and subsequently were curious about the researchers' ability to do so. What is done with food traditions is understood to be culturally meaningful by both adults and children, despite invasive interventions.

Community members were open about their own ability to hunt, the barriers associated with getting onto the land, and the ways in which they cook or preserve traditional food once they get it. Once people started hearing that the first author was unfamiliar with traditional food practices people went out of their way to show her practices such as moose ribs being sawn off and packaged, how partridge is boiled whole and eaten, or how fish are cleaned and shared. These simple interactions were extremely revealing about the meanings that are thoroughly embedded in how people acquire food, and what is done with the food once it is in the community (such as processing). Food was also a topic that came up most often during interviews when following a line of questioning about how community members see culture being expressed in the community. Feasts were the most often noted example of cultural expression in this context. This revealed that participants understand that food can be linked with

tradition and culture. One participant noted that they still have community feasts, and that people love coming together to share in this way. She spoke about the hardships the community has faced over the last few years, and that these types of celebrations are becoming less common because of them. Yet, what remained clear was that feasts are a welcomed and important expression of local culture, or what can be understood as a moment where border thinking is possible. Feasts are an opportunity for socialization, and an opportunity to highlight the traditional foods able to be produced from the land.

This was also evidenced with food sharing, which is another useful example of local cultural articulation. Historically food sharing was a mechanism that enabled communities to live and thrive, and it has been shown that food sharing programs can positively impact nutrient intake and cultural connection in Indigenous communities (Gates, Hanning, Gates, & Tsuji, 2016; Kamal, Linklater, Thompson, Dipple, & ., 2015; Skinner et al., 2013). In Wapekeka households, it is common to use food to welcome guests, and people are particularly proud of the traditional foods that they are able to share. Bannock, partridge, and fish were all foods that were shared with researchers over the course of their fieldwork. What is done with food traditions is understood to be culturally meaningful, the importance ascribed to traditional food is what informs cultures and cultural practices around food. These seemingly mundane example point to the cracks in the colonial matrix of power, and the perseverance of cultural practice despite the harmful interventions that have jeopardized the northern food system.

Indigenous communities have undoubtedly been influenced by the West, a notable example is the sedentarism and altered food practices that came with the creation of permanent settlements. However, despite these destructive changes there remains a distinct sense of value surrounding how food gets from the land and into communities. For example, over the course of

this fieldwork hunters returned from a two week hunting trip by float plane. When the plane was heard overhead, dozens of people rushed to the dock to watch, socialize, and to help unload whatever game was caught. Archaeological evidence and the petroglyphs of Indigenous peoples show that the relationship between Indigenous peoples in Ontario and moose is very old, and involves human use and consumption of meat, internal organs, hide, and skeleton (Timmermann & Rodgers, 2005). Moose hunting in this region now is employed by members of First Nations communities as part of their treaty rights in Ontario. This is articulated in specific nation-to-nation agreements with the Government of Canada (Leblanc, McLaren, Bell, & Atlookan, 2011). The Wapekeka First Nation is party to Treaty 9, which overtly protects the community's rights to hunt throughout the unoccupied tracts of Crown land claimed as "traditional territory". Moose is a food source that was once critical to the survival of communities in this region and it persists as a traditional food with immense value.

A typical modern moose hunt in the North is usually a long and extremely technical endeavour. In order to even get to the hunting area, one must often travel hundreds of kilometers and rely on float planes, snowmobiles, and gasoline (Leibovitch Randazzo & Robidoux, 2018; Pal et al., 2013). Where people once moved following food as part of semi-nomadic lifestyles, the creation of permanent settlements has meant people hunt from a static point. As animal populations are depleted, the radius (or distance travelled) increases in order to successfully hunt. In this one fieldwork example, a plane was used to bring back the meat that was butchered at the site of the kill, which clearly illustrates how hunting has been changed and shaped by coloniality/modernity. Watching members of the community gather to celebrate what was once historically, and remains to this day, an important source of food was a clear demonstration despite these changes, there is still tremendous value placed on getting moose and sharing it with

the community. People remain linked to the importance of getting their own food, and this value is part of what drives the action of partaking in long, expensive, and laborious intensive hunting trips. The continual connection to the land is an example of the ideas of local meaning informing culture and cultural practices.

Food acquisition in this way is a collision of worlds. For Indigenous peoples in the Wapekeka First Nation, there exists an interplay of culture, traditional methods of hunting and trapping, and the new technologies that they embrace. Local expressions of food are intersecting with the much larger forces of modernity and coloniality, but they remain distinct and transformative forces. Critical border thinking allows for a critique of coloniality because "if border thinking is the unavoidable condition of imperial/colonial domination, critical border thinking is the imperial/colonial transformed into epistemic and political projects of decolonization" (Mignolo & Tlostanova, 2006, 211). Indigenous peoples are not seen as surrendering to Western forces simply to assimilate as this was an unavoidable consequence of colonization and modernity in which community members are now embracing out of necessity. This can be understood as a destabilization of modernity's universal understanding of food and food practices. Efficiency and productivity using technology is valued, but not in the same way that modernity/coloniality imagines it.

The ways that traditional foods have become reliant on technology, and blended with the idea of tradition is also mirrored in the food itself. How traditional meats are processed, preserved, and consumed all are characteristic of cracks within the dominance of coloniality. Fish are packaged and frozen in industrial freezers, partridge boiled on a modern stovetop, yet these foods are shared and valued based on tradition. One of the challenging questions that border thinking seeks to answer is how, in our modern and colonial world system, "do people in

the world deal with Western economic, political, and epistemic expansion if they do not want to assimilate but choose to imagine a future that is their own invention and not the invention of empires, hegemonic or subaltern?" (Mignolo & Tlostanova, 2006, p. 209). Herein lies the value of pointing to where border thinking is possible, because it reveals that what is being observed is not as simple as an eradication of culture due to westernization.

Border thinking reveals the space where community members strive to envision a new future for themselves despite the destitutions they have faced. Members of the Wapekeka First Nation clearly value the ideas surrounding food acquisition, such as the ability to hunt for food, the relationship or connection between food and the land, concepts such as sharing traditional food with friends or family, and the idea of community feasts. Border thinking acknowledges the devastating effects of colonization and western influence, but similarly acknowledges the cracks in these destructive colonial forces that lead to new unique forms of cultural expression. The argument proposed here is that traditional food practices in the Wapekeka First Nation can expose the conflict within dominant practices and in turn expose colonial difference. What local cultural expressions are demonstrating is that despite all of the destructive European interventions, there are still important cultural meanings around food practices. What the people in the community do with food tradition is understood to be culturally meaningful, clearly observed through fieldwork observations. Hopefully what this has revealed is that there are already points of cultural enunciation existing in communities that have been jeopardized by colonial interference. There are "cracks" in the colonial matrix of power that exist despite coloniality, and these are the spaces that should be expanded and supported when creating food initiatives. Communities are already exhibiting strength and resiliency in marginalized spaces,

and understanding this through the lens of border thinking can enable a better means to include previously denied perspectives, or ways of being.

Conclusion

Border thinking occurs as a result of living under the violence of coloniality. Indigenous peoples of what is now known as Canada have experienced damaging lifestyle changes that have led to extremely high rates of food insecurity and diet related disease as a result of Imperial expansion (Damman et al., 2008; Robidoux & Mason, 2017; Samson & Pretty, 2006). The historical construction of Indigenous peoples as governable subjects has been a central mode of control in food systems. Globalized food markets mean that the food systems of most Indigenous peoples are currently composed of a mixture of their traditional local foods and an increasingly large proportion of expensive, nutritionally deficit market foods (Kuhnlein, Fediuk, Nelson, Howard, & Johnson, 2013). But what is not accounted for is that there is a blending of traditional and modern, the binary of either traditional or Western is slowly being broken down within cultural practice. Colonization and subsequent westernization has oppressed, marginalized, and transformed communities. Yet, there remains clear, observable, and resilient articulations of culture that can be seen to lead to new forms of autonomy and knowledge.

Why is this notion of border thinking important? Because border thinking provides insight into the construction of identities in a global environment. Making sense of local understandings of food procurement in this context is critical if seeking to implement any food strategies in a First Nations context. The stability of the global is questionable when contrasting dominant discourses with equally persuasive cultural values and realities. Locating border thinking to help to understand subsistence practices in the North revealed important insights into the way that food functions and is valued in the community. Living with the legacy of

colonialism, along with the consequences of it such as food insecurity, leaves room for unique and new performances of culture imbued with meaning. Ideas around traditional food, and traditional food procurement clearly remain powerful sites of culture within a marginal space. By locating and bringing to light potential "cracks" in the dominant epistemic by proving new directions for thinking about food casts new light on the people who live in the margins of society. Understanding food procurement strategies in this way might be an important step towards establishing appropriate and sustainable food initiatives in the North by providing a platform to foreground and prioritize previously denied way of thinking and being.

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PART THREE

Thesis Conclusion

Indigenous peoples in Canada have experienced destructive lifestyle changes and continuing marginalization as a result of European contact (Robidoux & Mason, 2017; Samson & Pretty, 2006). Colonization and the subsequent westernization of food practices oppressed, marginalized, and irreversibly transformed a way of life that was previously autonomous and sustainable. Indigenous food systems were systematically eroded by the Canadian government, and the complicated dynamics and interventions contributing to the erosion of local knowledges have forced a dependence on a market-based food system in remote and northern Indigenous communities in Canada (Robidoux & Mason, 2017). Traditional food procurement from the land is a valued and important cultural aspect of the northern food system, however it is too expensive and time consuming to have a significant positive impact on diet (Blay-Palmer, Sonnino, & Custot, 2015; Leibovitch Randazzo & Robidoux, 2018). Communities are experiencing a double burden of the unaffordability or inaccessibility of traditional foods from the land, and the exorbitantly high cost and reduced availability of quality market foods largely due to the cost of shipping to these regions. As a result, Indigenous peoples of what is now known as Canada experience extremely high rates of food insecurity which greatly contributes to diet related disease (Damman, Eide, & Kuhnlein, 2008; Robidoux & Mason, 2017; Samson & Pretty, 2006). Globalized food markets mean that the food systems of most Indigenous peoples today are composed of a mixture of their traditional local foods and an increasingly large proportion of expensive, nutritionally deficit market foods (Kuhnlein & Receveur, 1996; Kuhnlein, Receveur, Soueida, & Berti, 2008; Lamden, Receveur, Marshall, & Kuhnlein, 2006; Robidoux et al., 2012). The inflated costs of market food in the North, limited availability of nutritious foods, and lack of government support for nutritious food programs are the primary reasons for food insecurity

for northern Indigenous communities (Skinner, Hanning, & Tsuji, 2006). Despite challenges, local food efforts do exist in many places in the North, both in the form of traditional land-based food procurement and now increasingly in new and alternative gardening initiatives. Consequently, there is a need to better understand how they operate within communities so that we can best move forward to a solution. Further, a greater emphasis must be placed on the benefits of local food practices that are greater than the basic production of food.

Many communities are beginning to seek out local gardening to combat food challenges, and a small part of the solution is beginning to emerge in Canada in the form of small-scale local gardening efforts that bring good food into communities (Laforge, Anderson, & McLachlan, 2017; Skinner, Hanning, Metatawabin, & Tsuji, 2014). Local production initiatives have been reported to engage community members including children in growing local produce, and develop skills for agricultural activities at the home and community level (Skinner et al., 2014). The first article in this thesis demonstrated the feasibility of a simple hoop house gardening project, and in the process revealed significant findings regarding the relationships between modern gardening initiatives and traditional food practices. Local gardening is a suitable avenue for building individual and community empowerment whereby community members can choose priorities and take initiatives over projects that they feel are worthwhile. Small hoop house, greenhouse, and gardening interventions are a simple, important, micro piece of the solution to food insecurity because they can build knowledge and skills, and foster an interest in good food (Skinner et al., 2014). The Wapekeka First Nation hoop house gardening initiative worked with children and local food champions to not only grow healthy food, but also to generate an interest in gardening with the ultimate aim of helping to promote autonomy. The creation of positive

spaces where children and adults are able to pursue interests in connection with the land has more value than simply food grown.

Intertwining local gardening with traditional values under the guidance of community leadership is one way to ensure that the meanings behind food production are realized and accepted so that sustainability can be achieved. Our project demonstrated that it is important to integrate traditional food practices under community leadership to establish greater meaning in Indigenous contexts. The Wapekeka hoop house also demonstrated that creating ownership with the local youth through the school, and with the community as a whole works to ensure lasting impacts.While significantly more investment is needed to establish greater food yields, the first growing season of the Wapekeka hoop house offered a positive space that can strengthen partnerships, link with traditional teachings, and generate interest and hope. Food offers interesting potential to conceptualize a space where cultural articulation can be understood as something powerful and new. The second article of this thesis offered a new way to understand local meanings around food to better support existing and developing food initiatives. Growing food can open a space to challenge the mainstream food system, and it can be a site for social mobilisation (Sage, 2014). The second article offered a way to do so by framing food challenges in the context of coloniality, and analyzing performances of culture as border thinking. Border thinking offers an interesting potential for understanding the complexities and interlocking dynamics of local and global food practices in northern Canada. It both acknowledges the devastating effects of colonization and Western influence, but similarly acknowledges the cracks in destructive forces that lead to unique new forms of cultural expression (Anzaldua, 1987; Mignolo, 2000). The agri-food system in Canada is following a production-oriented neoliberal agenda that is not serving the needs of local production. Simply

feeding a community through subsistence practices is not being supported, meaning that many traditional and not-for-profit gardening initiatives are not eligible for funding or government subsidy. However simply growing your own food, or subsistence agriculture, is the very type of practice that is valued at the community level. A higher understanding of this phenomena through a border thinking conceptualization is important because it provides a way to help to explain food practices in the north without necessarily putting traditional and western means of food production in opposition to each other. Rather, local food practices can be explained as meaningful and resilient adaptation in the face of coloniality.

The second article used fieldwork examples to analyze meanings around food and how they fit within global processes in a remote sub-Arctic community within the context of coloniality. This chapter offers a useful way to understand food procurement strategies by revealing that there remains clear, observable, and resilient articulations of culture that can lead to new forms of autonomy and knowledge. Contemporary food practices in the North are permeated by Western though and technology, but are still expressive of local knowledge and culture. In article two, important insights into the way that food functions, and is valued in the community, were gained on the cultural articulations surrounding traditional food, and traditional food procurement. Clearly there remains powerful sites of culture within marginal spaces that resiliently and passionately re-imagine a world previously denied by imperial expansion (Tlostanova & Mignolo, 2012). For example, members of the community continue value the ideas surrounding food acquisition, such as the ability to hunt, or the connection between food and land despite the attempt to disrupt these knowledges. The second article proposes the traditional food practices in the Wapekeka First Nation can expose the conflict within dominant practices, and in turn expose the colonial difference. Understanding Indigenous food strategies in

this way points to the pre-existing spaces that should be supported when creating food initiatives. Communities are already resiliently performing powerful acts of strength surrounding food, understanding this through the lens of border thinking is crucial for pointing future support, funding, and initiatives in the right direction.

The problem of food insecurity and diet related disease for remote and northern Indigenous communities is multidimensional and complex, and will not be solved quickly or easily. Making sense of local understandings of food procurement, and making sense of the ways in which communities are already attempting to bring in good food for themselves, is critical for anyone seeking to implement food strategies in a First Nations context. Each community is distinct, and the research for this thesis acknowledged the unique circumstances in the Wapekeka First Nation by utilizing longstanding partnership between the community and the research team built over the last decade. Building trust, fostering connections, and establishing rapport is invaluable as each community is distinct. Doing so is not an easy task, but it is well worth the challenge because it enables researchers to address each communities own needs, and utilize equally unique pre-existing local food initiatives. It is unlikely that there will be one broad answer to address the problem of food insecurity in the North, which is why it is important to work to understand distinct communities and their own efforts to address health challenges. This work is a starting point, and offers fieldwork examples and advice on a small part of the long process of reconciling food in communities. Micro-scale gardening efforts, and traditional subsistence practices, are each an exhibit of strength and resiliency in a marginalized space. Taken together, and built up cohesively, these efforts offer encouraging potential for beginning the long process of alleviating food insecurity in the North. It is important to continue to learn

from grassroots solutions to address larger health concerns. While it is a long and arduous process, each small part contributes to a whole understanding of health, wellness, and tradition.

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