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Anti-racist Perspectives on Sustainabilities

Edited by
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About the Editor

Ranjan Datta

Ranjan Datta, PhD, is the Canada Research Chair in Community Disaster Research in Indigenous Studies in the Department of Humanities, Mount Royal University, Calgary. Alberta, Canada. Ranjan's research interests include community disaster research, advocating for Indigenous environmental sustainbilities, responsibilities for decolonial research, Indigenous water and energy justice, critical anti-racist climate change resilience, and cross-cultural community research.

Editorial

Anti-Racist Perspectives of Sustainabilities

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This Special Issue centers on anti-racist and decolonial perspectives of sustainability [1,2]. Both anti-racist and decolonial perspectives inspired the hope for building an anti-racist community as a form of sustainability, particularly among the Indigenous, transnational immigrant, and settler communities [3,4]. Although a significant number of academic researchers introduced anti-racist and decolonial perspectives in their sustainability work, they have not considered anti-racism and decolonization as a source of knowledge and understanding for the Indigenous, transnational immigrant and settler communities, how to be responsible for being anti-racist and decolonial to the communities and why anti-racist and decolonial perspectives are important to understand "sustainability", i.e., a system of reciprocal social relations and ethical practices, as a framework for building stainable communities. Further, studies have failed to explain how to decolonize the Western concept of sustainability from and within cross-cultural perspectives [4–7]. The contributions to this Special Issue initiated these transdisciplinary questions that challenged not only our static science and social science mindsets, but have taken the responsibility to practice anti-racist and decolonial perspectives in our everyday functions.

With a focus on anti-racist and decolonial perspectives, this Special Issue advocates for the Indigenous perspectives of sustainability, Indigenous knowledge systems, and Indigenous knowledge methods throughout the research process. Contributions recognize Indigenous peoples' historical and ongoing colonization and marginalization, and seek to address these injustices by placing Indigenous peoples at the forefront of research. Indigenous researchers and scholars, Vizina and Gordon, prioritize the involvement of Indigenous communities in the research process. Both studies emphasize the importance of respecting Indigenous sovereignty, self-determination, and cultural protocols, and seek to challenge dominant research paradigms that have historically silenced Indigenous voices and perspectives. Anti-racist and decolonial perspectives often draw on Indigenous research methodologies and approaches, such as oral history, storytelling, and community-based research. Vizina and Gordon incorporate interdisciplinary perspectives, such as Indigenous feminist theory or decolonial theory, to address the complexities of the ongoing impacts of colonization on Indigenous communities. Indigenous contributors in this Special Issue support Indigenous peoples' empowerment and self-determination through research grounded in their perspectives, values, and knowledge systems.

Decolonial and anti-racist scholars, Kayira, Lobdell, Gagnon, Healy, Hertz, McHone, Schuttenberg, and Kerr, critically discuss how anti-racist and decolonial perspectives of education seek to address the systemic inequalities and injustices that exist within educational systems, and promote educational practices that are inclusive, equitable, and empowering for all students. Both studies showcase how anti-racist education involves recognizing the ways in which racism and discrimination manifest within educational systems, including biases in the curriculum and pedagogy, disparities in access to resources and opportunities, and the overrepresentation of certain groups in disciplinary and special education programs. They suggested how anti-racist and decolonial perspectives are helpful for implementing inclusive and culturally responsive teaching practices, incorporating diverse perspectives and histories into the curriculum, and promoting social justice and equity across all aspects of education. They demonstrate the importance of decolonial

perspectives in recognizing how colonialism has shaped educational systems and contributed to the marginalization and erasure of Indigenous and non-Western knowledge systems. They suggested that decolonization involves promoting educational practices that respect Indigenous and non-Western ways of knowing, and prioritize diverse communities' perspectives, experiences, and needs. This may involve incorporating Indigenous knowledge and perspectives into the curriculum and teaching practices, promoting bilingual and multilingual education, and ensuring Indigenous communities control their educational systems and curriculum.

Anti-racist health researchers, Raihan, Chowdhury, and Naidu and Chowdhury T Contribution explored sustainability from anti-racist perspectives of health research. They critically observed how racism and discrimination impact health outcomes, and sought to address these issues through their research. They explained that the anti-racist approach acknowledges that racism and discrimination can manifest in many forms, including systemic inequities in access to healthcare, health policies and practices, and disparities in health outcomes across different racial and ethnic groups. An anti-racist perspective of health research involves examining the way in which race and ethnicity intersect with other social determinants of health, such as socioeconomic status, education, and access to healthcare. It involves taking a critical approach to research methodologies and ensuring they are inclusive and do not perpetuate existing biases or stereotypes.

The study by anti-racist and decolonial researcher, Bhawra, critically discusses the challenges in traditional Western climate change policy and practices that may be rooted in colonialism and perpetuate existing power imbalances and injustices. The anti-racist approach acknowledges that Indigenous and local knowledge systems, marginalized or ignored by Western science, may hold valuable insights and perspectives of climate change and environmental sustainability. As suggested, the key aspect of anti-racist and decolonizing climate change research involves building trustful relationships, respecting traditional land-based knowledge and practices, Indigenous governance, and actively seeking and incorporating Indigenous knowledge and perspectives into research design, data collection, analysis, and dissemination. This includes recognizing and respecting Indigenous sovereignty and self-determination, and ensuring that Indigenous communities control their data and research processes. Another critical aspect of decolonizing climate change research is addressing the power imbalances within research partnerships and ensuring that Indigenous communities and local organizations are active and equal partners in the research process. This may involve building capacity within these communities to increase engagement in research and advocacy around climate change, and providing resources and support to ensure their voices are heard and their needs are addressed.

Anti-racist solidarity scholars, Hurlbert and Oliver, explore the responsibilities in decolonization for challenging the underlying assumptions and values that inform traditional Western approaches. Their studies explain how taking responsibility creates many opportunities for meaningful reconciliation and food security that may be more inclusive, equitable, and sustainable. This involves recognizing and addressing the ways in which colonialism has shaped our worldviews, practices, and systems of power, and actively working to promote inclusion, equity, and social justice for all.

This Special Issue's contributors tried to decolonize research methods from community-led and community-engaged methods in their participatory research. For example, when working with a community, contributors used narrative research, told a story together, and equally owned that story. The scholarship from their research also looks very different and its audience is not restricted to scholars. The outputs have a social impact on the community and are defined within the collaboration between researchers and community members. The main goal was to promote learning that leads to social action for anti-racist solidarity as a form of community-led sustainability.

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Low Job Market Integration of Skilled Immigrants in Canada: The Implication for Social Integration and Mental Well-Being

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Abstract: Skilled immigrants are critical assets to the social and economic dynamism of Canada. However, they are less likely to find employment matching their skillset due to a lack of inclusive post-immigration professional integration policies and support. They generally earn less and often live below the low-income cutoff relative to their Canadian-born counterparts. This paper aims to review the current situation of low job market integration (LJMI) of skilled immigrants in Canada and its implications on their social integration and mental well-being. Skilled immigrants continue to face disparities in getting desired jobs, despite having sufficient skills and credentials similar if not superior to that of Canadian-borns. Based on the existing literature, this study demonstrates that low job market integration limits skilled immigrants' productivity, and they experience a lower level of social integration and deteriorated mental well-being. Therefore, initiatives from multidisciplinary and multisector stakeholders are necessary to improve skilled immigrants' mental well-being by providing equal opportunities devoid of social exclusion and marginalization.

Keywords: high-skilled immigrant; Canadian job market; low job market integration; mental well-being; mental health & well-being

1. Introduction

Canada has attracted large numbers of skilled workers through its immigration policy to address workforce shortages due to the country's ageing population and decreasing birthrates [1]. Canada admits immigrants as skilled workers, reunited family members, protected persons such as refugees, and economic contributors [2,3]. Many highly educated and skilled immigrants migrate to Canada with permanent residency status under the Federal Skilled Workers Program [4]. According to the Immigration, Refugees and Citizenship Canada (IRCC) data, the Government of Canada accepted about a million skilled workers to enter Canada between 2002 to 2014 through the Federal Skilled Workers Program [5]. The number of immigrants admitted through the skilled migration programs has been rising continuously, and in 2021, Canada admitted 139,460 skilled immigrants through these programs, comprising nearly 34% of all immigration in that year [6]. Also, by 2023-25, Canada has set a multiyear plan to recruit millions of immigrants, among which approximately 50%, 51%, and 53% will be skilled workers from the economic category in 2023, 2024, and 2025, respectively [7]. Thus, skilled immigrants from developing nations are becoming increasingly important in the Canadian labour market [8].

Notably, immigration policies in Canada consider skilled immigrants as a valuable resource for the socio-economic growth of the country [3]. However, compared to their Canadian-born counterparts, these immigrants earn less, live below the standard, and are less likely to find employment matching their skills [2,9–11]. Statistics Canada's report shows that the unemployment rate of landed immigrants is 7.9%, whereas the rate among

Canadian-borns with similar degrees is 3.1% [12]. In 2014, the gap between the employment rate of immigrants and Canadian-borns, both with university degrees, was 11.1% [12]. In 2016, the census data showed a 16% national-level wage gap between newcomers and people born in Canada, whereas this gap was about 12.6% in the 2006 census data [13]. In addition, skilled immigrants, especially those who were in regulated fields such as healthcare or law, may need to choose alternative careers after coming to Canada to secure their livelihood [14,15]. Highly skilled immigrants with foreign university degrees frequently end up taking jobs requiring less than a university degree [16,17]. For example, many foreign-trained pharmacists work only as pharmacy assistants, and many foreign-trained nurses take jobs as healthcare aides [18,19]. Similarly, many foreign-trained physicians are pushed to take non-health career paths to support their families, thus losing their professional identity [15]. There is a lack of systematic approach and support for skilled immigrants to find employment in their area of expertise or suitable alternative careers where they can employ their skills to a certain extent [20,21]. Therefore, the individuals struggle to identify alternative jobs by themselves, have difficulty obtaining the required diploma/certifications, and struggle to convince employers of the rationale for their career switch to a position requiring a different skill set than their prior work area [21]. Thus, compared with Canadian-born counterparts, immigrants with the same qualifications suffer more to find a suitable job, making them prone to entering the workforce through undesirable jobs and leading to low economic integration [22] and underemployment [23].

These challenges that skilled immigrants encounter in Canada while attempting to integrate into the labour market lead to worse mental health outcomes. Chen et al., after analyzing a longitudinal survey of immigrants to Canada, reported that after four years of arrival over half of the immigrants with post-secondary education (58%) were underemployed, resulting in the decline of their mental health [24]. This paper aims to review the current situation of low job market integration (LJMI) of skilled immigrants. This article describes how individual-level or external factors, such as systematic barriers and racism, likely contribute to LJMI in the Canadian labour market. The conventional meaning of immigrants' integration in the host country suggests that immigrants and their ethnic group should bear the responsibility for their situation (such as integration and/or disintegration) [25]. We assume, however, that integrating into a new society is not a one-way journey where one group is responsible for their actions; rather, both groups (newcomers and host country) need to help each other and create positive outcomes for all. This article, therefore, intends to discuss the implication of job market integration on the social integration and mental well-being of high-skilled immigrants.

2. Reasons for Low Job Market Integration

Despite the fact that Canada has one of the most diversified populations in the world, exclusionary practice based on racism is still present in Canada [26]. The Supreme Court of Canada (2005) also agrees that racism is an unavoidable and well-known social truth in Canada [27]. According to recent studies, there is a lot of evidence of racial inequality in daily institutional practices in Canadian society [28,29]. Research also shows that discrimination against immigrants manifests in the screening stage where an employer's call for an interview depends on the racial identity of the immigrant [30]. Although officially Canadian policy supports the deracialization of immigrants, in practice, a complete deracialization is not seen [27]. Therefore, due to discrimination and racial practices among many employers, skilled immigrants encounter obstacles in obtaining desired jobs in Canada.

Canada admits skilled immigrants based on higher educational qualifications and experiences in related fields; however, after arrival, skilled immigrants face difficulties in the settlement-to-integration process in the host country [8,31–33]. Research shows that immigrants face barriers when entering the Canadian labour market [34–36]. Many factors are responsible for the extent to which skilled immigrants integrate into the Canadian job market. Some factors are related to individuals' socio-demographic characteristics, including age, sex, education, and skills [37]. In contrast, other factors are related to

the system and preferences encountered in the host country, such as racism, colonial integration policies, and/or systematic discrimination [37]. According to Weiner, the devaluation of foreign degrees and work experience, a lack of communication skills, implicit discrimination, and a lack of work experience in Canada are among the significant reasons that prevent skilled immigrants from entering the labour market or from getting a desired job [38]. In the following section, we will describe the various reasons under the four broad categories that impede skilled immigrants' entry into the Canadian labour market. A comprehensive list of factors that might help evaluate a newcomer's low level of job market integration and mental well-being are presented in Figure 1.

(a)   Individual-level factors;
(b)   Employer-level factors;
(c)   System-level factors;
(d)   Societal-level factors;
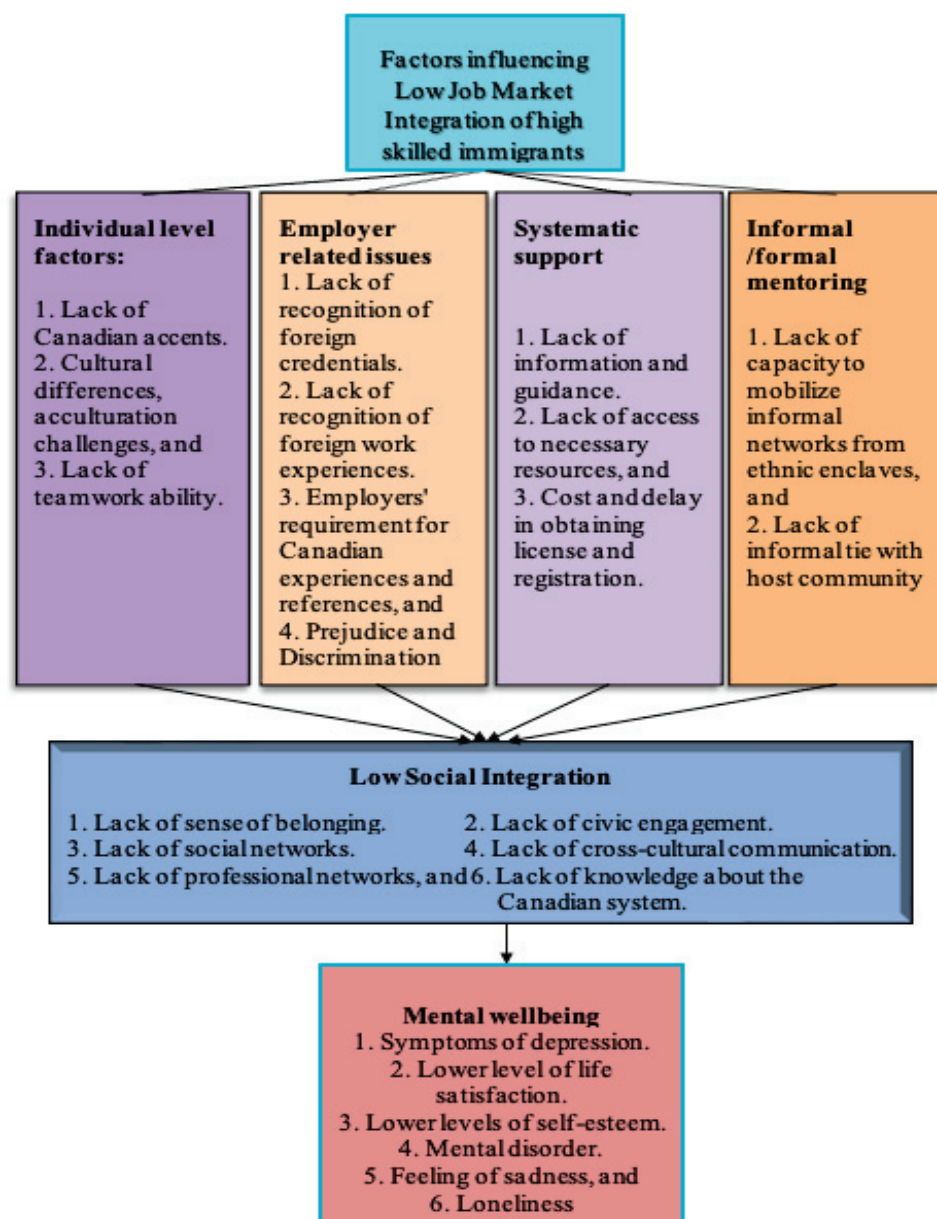

Figure 1. Low level of job market integration (LJMI); lower levels of social integration and mental well-being.

2.1. Individual-Level Factors

Barriers that impede skilled immigrants' labour market integration in Canada are widely documented [32]. As discussed above, although skilled immigrants are highly qualified, professionally trained, and economically motivated, they face individual-level challenges after arriving in Canada that restrain them from successfully integrating into the labour market. Racism can manifest itself in the exclusion of eligible immigrants from getting job opportunities because of their accents, body language, and other individual characteristics. The most vital factors may be a lack of language skills, acculturation challenges, and teamwork ability. These individual-level challenges may interact with other local contexts to trap skilled immigrants in low-skill survival jobs, resulting in negative outcomes in the labour market [32].

English-language skills are among the most critical factors in immigrants getting jobs in Canada [8]. Skilled immigrants must show minimum language requirements in listening, speaking, reading, and writing modules for the Express Entry program [39]; however, most of the time, employers consider their English-language skills insufficient for effective employment communication [40]. A study shows that employers predict applicants' language skills based on the name or country of origin on a resume [41]. Lacking a Canadian accent and expressions, and lacking knowledge about specific language skills, also affects skilled immigrants' employment outcomes [42]. A lack of linguistic skills prevents cross-cultural communication, thereby hindering adequate access to the host culture, hindering learning the expected standard behaviour in the workplace and soft skills, and delaying job market integration [8,40,43,44]. Improved language ability is likely a necessary condition for skilled immigrants to be successfully integrated into the labour market [45]. Racialized immigrants are discriminated against because of their non-native accents, which serve as a marker that establishes the White English/French accent as superior. This practice reveals the colonial mentality of the employers, where they want to reduce, rectify, and normalize the non-native voices of immigrants because non-native accents seem defensive and confrontational [46]. The non-nativity of their accents makes skilled immigrants' employability incompetent, according to the employer. Therefore, it is vital to eliminate prejudices and negative mentalities that marginalize skilled immigrants and instead devote greater resources to improving English accents in order to help them with better labour market integration.

A lack of understanding of workplace culture, lack of teamwork ability, and acculturation challenges also impose significant barriers to immigrants getting their desired jobs. These factors are essential, as understanding cultural differences in the workplace, teamwork capability, and successful acculturation may play a vital role for newcomers in attaining Canadian work experiences. A study shows that many immigrants do not know North American concepts of speaking well, selling themselves for work, and maintaining eye contact during a job interview—all of which are very important in the Canadian workplace culture [47]. Petri (2010) showed that to be integrated into Canadian society, newcomers should speak the way Canadians do and learn how Canadian-born people approach different situations using different manners [48]. However, research shows that Asian-named people with similar qualifications receive fewer calls from the employer when applying for a job [30]. Even though diversity in hiring is promoted in Canada, in reality, there is still discrimination against skilled immigrants that manifests on a personal level, preventing their integration into the labour market. Therefore, the government should work to ensure the practice of anti-racist policies among employers and encourage them to hire skilled immigrants if they meet all the required criteria. Also, skilled immigrants should raise their voices and mobilize available resources in improving their necessary skill sets to be hired, to dismantle racialized practices in the Canadian job market.

2.2. Employer-Level Factors

There are many likely reasons why skilled immigrants' labour market outcomes differ from Canadian-born people. Employers, particularly those with latent prejudices about

foreign credentials, training, or experiences, practice discrimination and devalue skilled immigrants' foreign skills. Studies show that immigrants face barriers to entering the job market despite having foreign credentials and work experience, due to a lack of Canadian work experience and references [8,10,11,38,40,49,50]. Research on the experiences of skilled immigrants' labour market discrimination has examined discrimination based on the devaluation of foreign credentials, work experiences, and training [51]. Research also shows that employers exploit skilled immigrants by seeking Canadian experience and Canadian references, and thereby obtain from immigrants free and low-wage labour [4]. Immigrants are victims of local institutions that do not accept foreign degrees and experiences due to prejudice and racism [52–54]. According to Desjardins and Cornelson [55], it is noticeable that compared to their Canadian counterparts, skilled immigrants have a higher unemployment rate and receive lower wages, which accounts for their lower job market integration in Canada. Therefore, discounting foreign skills due to prejudice against foreign experience impedes skilled immigrants' socio-economic integration [56].

Anti-immigrant biases also hinder immigrants' success in the Canadian labour force and discriminate against their entry into the workforce. A study describes that when immigrants' skills become a threat to local applicants, they face anti-immigrant biases [51]. Anti-immigrant biases also happen due to inter-sectional identities, including the socio-demographic statuses of the under-represented groups [57]. The evidence thus suggests that employers are not accepting the overseas expertise and credentials of skilled immigrants in cases where those credentials were used to get the immigrants into the economic immigration category. That is, skilled immigrants are being negatively impacted by openly practiced racist and exclusionary principles in the employment recruiting process, even though they immigrated to Canada with the hope of living a better life. As Canada needs more skilled immigrants, not only government initiatives but also individual- and community-level anti-racist initiatives are needed to attract more skilled people and for the social integration of skilled immigrants in Canada.

2.3. System-Level Factors

Immigrants' success in professional integration in the host country may be determined by several systematic support-related factors, such as information and guidance, adequate access to necessary resources and neutral services, etc. However, the information that immigrants receive before arrival is often unreliable and more optimistic [58], which gives them the illusion of abundant economic and employment opportunities compared to their home country. The real scenario in Canada is different. For example, relevant websites do not provide sufficient information for understanding the difficulties associated with entering into regulated professions, which delays skilled immigrants' access to desired regulated occupations [59]. There is also a lack of written and authentic immigration-related resources available based on which immigrants could perform a cost-benefit analysis before migrating to Canada [42]. Studies show that skilled immigrants would have been better prepared for the Canadian system of preferences or would have taken qualification accreditation exams if they had received practical guidance before and/or after arriving in Canada [8,60,61].

The requirement for money to pay for several prerequisite exams or further study is another issue that forces immigrants to work in survival occupations. The potential cost and delay in obtaining license and registration forces skilled immigrants to work lower-paid jobs until they obtain registration and authorization to work [62]. Sometimes immigrants need to study further to get their foreign credentials accredited and work experiences recognized, which mostly leaves them in a frustrating situation [11]. Research shows that new immigrants can overcome their problems by participating in additional formal education after arriving in Canada [63]. That is, despite their higher levels of credentials, skilled immigrants need to invest time and money to become eligible to find work in the field related to their previous experience and education [64].

Systemic racism may also be observed when employers systematically deprive immigrants and/or racialized people of equitable job opportunities based on certain rules, policies, and practices at the institutional or structural level [27]. Evidence shows that although many immigrants arrive in Canada with high expectations, they frequently experience racial and ethnic discrimination once they are here [65]. Even if the foreign professional experience meets the Canadian standard, skilled immigrants are sometimes not recognized by the licensing body and/or employer [66]. Evidence also shows that employers have allegedly turned down Chinese women immigrants who obtained licenses based on their prior work as nurses or engineers in their countries, claiming that the quality of their country experiences was insufficient [67]. Therefore, a racist mentality of employers undervaluing the skills of immigrants creates a barrier to them pursuing their desired career, which in turn creates difficulty integrating into the Canadian way of life.

2.4. Societal-Level Factors

A fourth reason that may influence immigrants' LJMI is their formal or informal networks at the societal level and their capacity to mobilize these networks. Networks within ethnic enclaves are likely to assist skilled immigrants in finding a survival-level job immediately after arriving in Canada and managing their vital livelihood needs [68]. However, a study shows that networks within ethnic enclaves are rarely effective for skilled immigrants in finding desired employment respective to their skills and credentials [69]. Also, a tie to the host community may help skilled immigrants to get to know a common culture, norms of the host community, and available job opportunities. A lack of this knowledge, on the other hand, prevents newly arrived skilled immigrants from job opportunities and learning the expected standard of behaviour in their desired professions in Canada [70].

3. Low Job Market Integration and Low Social Integration

Social integration refers to the cohesion among community members, where people—at least to an extent—feel part of the larger community [71]. Immigrants' social integration is vital for inclusive social and economic growth and for enhancing their ability to become productive members of society [72]. Indicators that allow immigrants to be integrated into the host communities are their local networks, transnational networks, civic engagement, citizenship participation, and political engagement [37]. Immigrants' employment and labour market integration are often considered essential factors for their social networks and social relationships, thereby enhancing social integration by promoting active participation in social activities and community networks [73]. Job and income are essential resources that help immigrants secure accommodation, interact with fellow employees, and achieve language skills for cross-cultural communication, thereby helping them find a place in the new society [72]. Although these factors help newcomers integrate with the host community and understand ethnic and cultural diversities within the community, their LJMI may reduce skilled immigrants' ability to socially integrate.

Employment and labour market integration promote social networks with various people and subsequently influence newly arrived immigrants' social integration. A study shows that Canadian mechanisms for the economic integration of skilled immigrants systematically deprive them of having similar credentials as their Canadian counterparts, which in turn lowers their self-esteem, and hinders skilled immigrants' social integration [68]. Therefore, we see recent immigrants expressing a lower level of sense of belongingness to Canadian society [74]. "A sense of belonging refers to the process through which people belonging to the community develop emotional ties among each other and is a process that imbues them with feelings of autonomy, environmental mastery, and purpose in life" [75] (93–94). In 2015, the Institute for Canadian Citizenship (ICC) published a report where respondents identified a lack of information about the Canadian system as a significant barrier for newcomers to civic participation, volunteer activities, and political engagement [76]. Civic engagement means community involvement, such as involvement with volunteer organizations [37]. Skilled immigrants also have limited opportunities

to create professional networks, and face challenges in cross-cultural connection with Canadian-born people, which is critical for integration in the job market and their social integration [77].

The above discussion shows that skilled immigrants face an unexpected situation in the Canadian job market system which forces them to struggle to manage their everyday lives after arriving in Canada [78]. Although they have similar education and foreign experience as their Canadian counterparts, they are rarely hired for jobs that match their skills. Exclusion based on double-standard exclusionary policies is invisible and generally goes unnoticed, leading newly arrived immigrants to depend on their ethnic groups. They also experience a lack of information and knowledge about Canadian culture, professional norms, and English language proficiency, which excludes them from building helpful social networks with the community. Thus, skilled immigrants experience social exclusion due to both systematic discrimination and individual-level limitations that alienate them from the mainstream social system and relationships. Access to such relationships may have enabled them to participate in the host society actively, allowing them to benefit from broader networks of solidarity and support.

If it is assumed that immigrants' social conditions account for their lack of social integration and/or job market integration, the issue may not receive the attention it deserves. The LJMI can involve being a new immigrant, not having enough language proficiency, or having training that is insufficient for the demands of Canadian employment. These factors can be explained as legitimate from the inequality lens, but racism and prejudice-related discrimination should not be ignored if we want to see skilled immigrants in a better position in Canada, where the number of racialized people is increasing rapidly every year [79]. To recognize systemic issues with major effects on the LJMI and the mental health of skilled immigrants, we should approach problem-solving from an anti-racist perspective.

4. Low Social Integration and Mental Well-Being

The Mental Health Commission of Canada (MHCC), which deals with preventing mental disease and promoting all Canadians' well-being, considers mental health an essential public health issue [80]. According to the World Health Organization (WHO), mental health can be defined as a "state of well-being in which the individual realizes his or her potential, can cope with the normal stresses of life, can work productively and fruitfully, and contribute to the community (p.1, [81])". Mental health is influenced by various social factors such as community area, level of income and education, employment, minority culture, relationships with friends and family, etc. [82,83]. Migration is seen as one of the significant determinants of individual health because migrants may be affected by existing social inequalities and discrimination and may subsequently face poverty, social exclusion, a lack of accessibility, and a lack of acceptability in the host country [84]. As noted above, many of these determinants are likely to affect immigrants 'social integration, which may contribute to their adverse mental health outcomes.

Although after arrival in Canada immigrants' health status has been seen as better than the Canadian-born population, their self-reported health starts to decline over time [85–87] and they suffer more from chronic diseases and mental illness than Canadian-born populations [88,89]. It has been recognized that socio-economic inequalities that exclude immigrants from mainstream society result in their poor long-term mental health outcomes [90]. Research shows that a lack of opportunities in employment hinders the acculturation process and social integration, affecting immigrants' mental well-being [91,92]. Thus, evidence shows that systematic exclusion from the job market creates a lack of social integration that negatively influences skilled immigrants' mental well-being.

Immigrants confront unexpected difficulties in getting jobs after arriving in Canada, which may increase their risk of developing negative mental health outcomes such as stress and symptoms of depression [84,93,94]. Research reveals that a lack of opportunities to get desired jobs based on the level of academic training affects skilled immigrants' mental health, including high levels of stress [95]. A study shows that people who are overqualified

for their current job are more likely to experience adverse mental well-being [96]. Therefore, evidence demonstrates that skilled immigrants' low job market integration affects their mental health outcomes.

Post-immigration barriers that skilled immigrants face may negatively impact their overall mental health. As a result, skilled immigrants experience sadness, depression, and loneliness [95]. The discounting of immigrants' skills by employers leads to a lower economic status where they feel depressed [91], lower levels of life satisfaction [97], and lower levels of self-esteem [98]. Skilled immigrants engaged in low-skill jobs earn less money, which also increases the risk of psychiatric disorders [99]. Research shows that in Nova Scotia, immigrant populations are more likely to have a higher rate of mental health disorders [100]. After arriving in Canada, immigrants' health started to decline over time due to various factors, including environmental, economic, and socio-cultural factors and factors involved with integration into the host society [101,102].

5. Conclusions

Skilled immigrants continue to face disparities in getting their desired jobs despite having similar foreign skills and credentials compared to their Canadian-born counterparts. Based on the existing literature, this study demonstrates that barriers to navigating the Canadian job market with foreign training limit skilled immigrants' productivity [93], and they experience a lower level of social integration and deteriorated mental well-being. Anti-racist initiatives from multidisciplinary and multisector stakeholders are necessary to improve skilled immigrants' mental health by providing equal opportunities to avoid social exclusion. At the same time, it is crucial to ensure that national policies and laws are anti-racist and respect the rights of skilled immigrants. Culturally sensitive, anti-racist, and inclusive social integration interventions must be developed and implemented to ensure cultural awareness and competence among skilled immigrants to decrease discrimination and marginalization of immigrant populations.

Anti-racist and inclusive perspectives enrich social integration and the mental well-being of newcomers. Anti-racist strategies and interventions ensure the participation of racialized people, the adoption of policies from government efforts with/without participation from various institutions, and the establishment of open systems [103]. Policies that are anti-racist and inclusive have been seen to help skilled immigrants to be integrated into the job market after arrival in the host country. Government policies and initiatives to aid in the professional integration of immigrants have a significant impact on the career paths of international medical graduates (IMGs) [104]. For instance, despite the fact that the licensing procedure is governed by provincial law, a number of institutional bodies from the para-governmental and private or community sectors have joined forces in Quebec to assist IMGs in clarifying the steps and eligibility requirements for obtaining a practice permit [16]. This initiative is an important example of an inclusive practice where all people, irrespective of their positions, take responsibility for helping the newcomer to be integrated into the host society. Evidence shows that immigrant men working in non-ethnic enclave settings are likely to earn more than those working in settings where most of the coworkers are from the same ethnic background [105]. Research also recognizes that better financial performance and business outcomes can be attained by a diverse and inclusive workforce [106]. There is also evidence that implementing inclusive workplace policies within businesses, community service groups, and immigrant workers enhances access to better social determinants of health for immigrants as well as their integration into the community [107]. Therefore, anti-racist policies should be implemented to enhance the social integration of newcomers and/or skilled immigrants in Canada as well as to improve their mental well-being.

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A Critical Lens on Health: Key Principles of Critical Discourse Analysis and Its Benefits to Anti-Racism in Population Public Health Research

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Abstract: Critical discourse analysis (CDA) is an interdisciplinary research methodology used to analyze discourse as a form of "social practice", exploring how meaning is socially constructed. In addition, the methodology draws from the field of critical studies, in which research places deliberate focus on the social and political forces that produce social phenomena as a means to challenge and change societal practices. The purpose of this article is to demonstrate the benefits of CDA to population public health (PPH) research. We will do this by providing a brief overview of CDA and its history and purpose in research and then identifying and discussing three crucial principles that we argue are crucial to successful CDA research: (1) CDA research should contribute to social justice; (2) CDA is strongly based in theory; and (3) CDA draws from constructivist epistemology. A key benefit that CDA brings to PPH research is its critical lens, which aligns with the fundamental goals of PPH including addressing the social determinants of health and reducing health inequities. Our analysis demonstrates the need for researchers in population public health to strongly consider critical discourse analysis as an approach to understanding the social determinants of health and eliminating health inequities in order to achieve health and wellness for all.

Keywords: social justice; discourse analysis; public health research

1. Introduction

The term 'discourse' is used to refer to all forms of written and spoken language. Discourse analysis (DA) is a research methodology derived from the study of linguistics that analyzes the formal aspects of discourse, including basic units of speech and linguistic structures. Unlike traditional linguistics, DA goes beyond the literal meaning of what is spoken or written to explain how it operates within a social context. Thus, it analyzes how meaning is constructed through language within the context of the social world [1].

Critical discourse analysis (CDA) is an interdisciplinary research methodology used to analyze discourse. CDA, like DA, views discourse as a form of "social practice" ([2] p. 1) and investigates the social construction of meaning. In addition, the methodology draws from the field of critical studies, which deliberately focuses on the social and political forces that produce social phenomena as a means to challenge and change societal practices. Unlike DA, CDA seeks to critique and alter language usage in social practice, as opposed to merely explaining it [2].

CDA has been used as a strategy of inquiry in various disciplines, including sociology, communications studies, and psychology; it has also been used increasingly in population and public health (PPH) research [3]. The objective of PPH research is to investigate ways to prevent disease and promote health in populations [4]. Identifying the social determinants of health and reducing health inequities are integral goals of PPH research.

The social, economic, and political variables that shape health are social determinants of health (SDOH). Health inequities are unfair and avoidable disparities in health outcomes across populations [5]. Given the social and political orientation of PPH, the critical lens of CDA may be an effective study method for PPH research.

In this paper, we will present a brief overview of CDA and its research history and purpose. Then, we will define and discuss three fundamental principles that, we argue, are essential in successful CDA research, particularly in PPH: (1) CDA research should contribute to social justice; (2) CDA is strongly based in theory; and (3) CDA employs constructivist epistemology. We conclude with a critical appraisal of the methodology, focusing on its merits and limitations as well as its benefits for PPH research.

2. Critical Discourse Analysis Overview

2.1. History

As noted in the Introduction, CDA is an interdisciplinary research methodology used to analyze discourse. Historically, CDA has been synonymous with critical linguistics (CL) and critical discourse studies (CDSs). Critical linguistics can be traced back to the work of Frankfurt School social theorists from the early- to mid-twentieth century. This school was predominantly concerned with identifying and challenging socioeconomic injustices of the time [2]. For instance, Jurgen Habermas argued that "language is also a medium of social domination and force. It serves to legitimize relations of organized power" ([2] p. 2).

The term 'critical linguistics' has largely been replaced by the term 'critical discourse analysis', which can be traced back to a January 1991 symposium in Amsterdam, where a group of scholars, Teun van Dijk, Norman Fairclough, Gunther Kress, Theo van Leewen, and Ruth Wodak, convened to discuss theories and methods of linguistic research [2]. Finally, 'critical discourse studies' is a third, often interchangeable term, denoting a broader scope and application of the method [6]. "Critical" is the central notion in each of these interchangeable terms. In this context, to be critical means to notice and oppose the ways in which discourse is used to socially construct truth and enforce power and control [1]. For the purposes of this paper, we will use the term critical discourse analysis (CDA). Presented subsequently is a summary of the CDA's most important tenets.

2.2. The Critical Impetus

In the spirit of what Wodak and Meyer refer to as the Critical Impetus, CDA scholars focus on critiquing and changing society rather than merely describing and explaining it. Here, critical research ought to "be directed at the totality of society in its historical specificity", which means that it ought to be contextualized within the social, political, cultural, and historical spheres. Critical research must also be interdisciplinary, "improving the understanding of society by integrating all the major social sciences, including economics, sociology, history, political science, anthropology and psychology" ([6] p. 7). Critical research, including CDA, aims to produce knowledge that enables individuals to liberate themselves or others from forms of dominance and discrimination [6]; thus, this impetus is in the spirit of eradicating social injustice.

2.3. Michel Foucault's Theory of Power

In addition to the aforementioned scholars, Michel Foucault has had a major influence on CDA, notably with his work on power, a core concept in CDA. Knowledge is intrinsically related to Foucauldian power. In fact, he uses the term "power/knowledge" to represent this relationship and his thesis that power is constructed by dominant forces of society through knowledge. Conversely, power is necessary for the construction of knowledge and truth [7]. Foucault notes that power is not necessarily coercive and repressive, adding that "if power were nothing but repressive ... do you think one would be brought to obey it?" ([7] p. 119). Instead, according to Foucault, power "traverses and produces things, it induces pleasure, forms knowledge, produces discourse" ([7] p. 119). Thus, it frequently functions more surreptitiously than coercive power. It may go undetected and

unchallenged by those upon whom it imposes, and those who wield and profit from it may do so unwittingly. Recognizing the role of power is a crucial initial step in addressing power disparities.

2.4. Ideology

CDA recognizes that discourse is intrinsically ideological, as it is defined as "social forms and processes within which, and by means of which, symbolic forms circulate in the social world" ([2] p. 10). CDA researchers view ideology as fundamental to the establishment and maintenance of unequal power relations and strive to "demystify discourses by deciphering ideologies" ([2] p. 10) underlying them. Throughout the entirety of the research process, CDA researchers must also explicitly consider their own ideologies. This appears to contradict the objectivity often sought in research, where the scientific and the ideological are considered mutually exclusive. CDA research asserts that all research is ideological; therefore, ignoring the role of ideology in activities such as formulating a research question, collecting data, and analyzing findings is to neglect a fundamental part of what shapes a researcher's conclusions or truth claims [1].

It is important to note that these three tenets are not an exhaustive list, but rather the most relevant for the purpose of this study. In addition, it is essential to highlight that while we have separated things for the sake of description, they are interlinked. For instance, the critical impetus of CDA is to reveal ideologies and power dynamics in language. Moreover, ideologies and discourses are only likely to become dominant if the public perceives them as neutral or moderate. Thus, power in the Foucauldian sense is necessary for the imposition of an ideological standpoint as a value-free truth, as opposed to an extremist or fringe belief.

3. Principles for Successful Critical Discourse Analysis

In this section, we suggest that there are three essential principles for conducting effective CDA research. As opposed to instructions or suggestions on how to conduct specific activities such as data collection and analysis, these are the principles and perspectives by which CDA researchers should work. As demonstrated in the preceding discussion and as observed by many CDA scholars, there is no right or wrong way to conduct research in CDA; nonetheless, there are right and wrong ways to think and act as a CDA researcher. In the following section, we will explain how.

3.1. CDA Research Should Contribute to Social Justice

The first essential principle for conducting effective CDA research in population health is that CDA research should advance social justice. The objective of social justice scholars and activists is "the fair distribution of society's benefits, responsibilities and their consequences" ([8] p. 1). There is a focus on the "relative position of one social group in relationship to others in society as well as on the root causes of disparities and what can be done to eliminate them" ([8] p. 1). Thus, recognizing social power dynamics is crucial for social justice aims. This principle is intertwined with the three aforementioned tenets of critical discourse analysis. CDA is inherently critical, concerned with ideology, and is committed to exposing the power dynamics underlying the phenomena it studies in order to eliminate disparities. It is therefore closely related to the aims of social justice to achieve a fair distribution of the benefits, responsibilities, and consequences of society.

In the context of population public health, social justice is the view that everyone deserves equal rights and opportunities for good health [8]. This concept is closely related to the concept of health equity, which is a core value of population public health. Health equity refers to social justice regarding health and the opportunity to attain health. Health inequities are avoidable and unfair disparities in health outcomes across populations. These are produced and reproduced by institutions, policies, and practices that create an unequal distribution of power and resources among communities based on race, class, gender, location, and other factors. Health inequities are social injustices in health. Consequently, the eradication of health inequity entails the eradication of social injustice in health [9].

The following are examples of how this might be accomplished in a CDA research project. A CDA of how perpetrators of mass violence are discursively constructed in North American news media after 9/11 must consider the association between the perpetrator's race and whether they are discursively constructed as a terrorist or a gunman. A CDA of American drug policy should examine the construction of crack cocaine consumption among black Americans and opioid use among white Americans. An additional comparison of drug-related incarceration rates by race would be a useful component of such an analysis. Lastly, a CDA of universal health promotion messages emphasizing the importance of physical activity for health must explore how such messages further marginalize individuals with disabilities in inaccessible built environments. By identifying stereotypes in the construction of marginalized communities, and in the latter case, the construction of health in a way that further excludes a disadvantaged community, these examples illustrate research that contributes to the goal of social justice to achieve a fair distribution of society's benefits.

3.2. CDA Is Strongly Based in Theory

The second essential principle of effective CDA research in population public health is that CDA is theoretically grounded. CDA research requires the application of theory, typically social theory, which describes the structures and functions of society. In addition, CDA researchers must be able to adapt their theoretical claims to the tools and methods of analysis they use. Wodak and Meyer identified several key theoretical influences to consider when conducting CDA. Due to their relevance to PPH research objectives, we focus on three theoretical influences: (a) general social theories; (b) micro-sociological theories; and (c) socio-psychological theories [6].

3.2.1. General Social Theories

According to Wodak and Meyer, general social theories are grand theories that aim to explain the relationship between structure and the individual [6]. A noteworthy example of this type of theory is Anthony Giddens' theory of structuration. Giddens' theory integrates macro and micro sociological theories, or theories of structure and theories of agency, to explain societal processes and the formation of systems. Giddens posits that there is a "duality of structure" ([10] p. 16) in which structures and agents of society function as two inseparable sides of the same coin. As social acts are produced and reproduced throughout space and time within structures, they transform into systems. On one side of the coin, structures facilitate and restrict individual social action, thus legitimizing some social interactions and behaviors while delegitimizing others [10]. These theories are relevant for examining systemic barriers and facilitators to populations achieving optimal health and wellness in the setting of PPH.

3.2.2. Micro-Sociological Theories

Micro-sociological theories are those that aim to explain interactions between individuals and groups and propose that societal processes result from these human interactions [6]. These theories tend to favour highly interpretivist analyses, such as those grounded in hermeneutics. This is exemplified by symbolic interactionism (SI). This sociological theory posits that an individual's behaviour toward others is predicated on the meanings they have constructed about these persons [10]. These meanings are derived from individuals' social interactions with other individuals and society. Symbolic interactionism posits that a physical reality exists only through a person's social understanding of that reality. Thus, when people act in relation to their surroundings, they do not do so directly, but rather indirectly through the lens of their social understanding [11,12]. There are four main principles of SI. First, individuals act according to their social understanding of "objects" in their environment. For example, a person who views the "object" of the family as relatively unimportant will de-emphasize the importance of family in their decisions and actions. Second, interactions occur in a social and cultural context in which objects, people, and

situations must be defined and characterized based on an individual's social understanding. Third, social understanding is created through interactions with other individuals and society. Fourth, these social understandings are created and recreated through a process of interpretation that occurs each time a person interacts with others [13].

3.2.3. Socio-Psychological Theories

Socio-psychological theories focus on "the social conditions of emotions and cognition" ([6] p. 24) and, similarly to micro-sociological theories, seek to explain interactions between individuals and communities. In contrast to micro-sociological theories, these theories tend to favour causal explanations over interpretive explanations [6]. Thus, these theories may be conducive to PPH research on the reasons for behaviour modification. The health belief model is an example of this type of theory, as it is frequently used to explain causal factors that predict people's engagement in health behaviours. Perceived sensitivity to a certain health problem, perceived benefits of engaging in certain health behaviours, and perceived barriers to engaging in certain health behaviours are examples of some of these characteristics [14].

3.3. CDA Draws from Constructivist Epistemology

The third essential principle of effective CDA in population public health research is that CDA draws from constructivist epistemology, which is vastly distinct from the prevalent positivist epistemological stance, frequently assumed in health science research. Constructivist research in PPH shares two characteristics: an explicit research paradigm and explicit reflexivity. We will elaborate upon these below.

3.3.1. Explicit Research Paradigm

The elements of a research paradigm are ontology, epistemology, methodology, and methods. For some time, ontology and epistemology have been the core of humanities and social science research. In health sciences, the idea that varying ontologies and epistemologies inform and justify the knowledge produced by research has increasingly gained traction [15]. Table 1 identifies these elements and presents examples from positivist and constructivist perspectives. These are not the only two standpoints, but they are the best at demonstrating which paradigms most adequately justify CDA research.

Table 1. Critical discourse analysis research paradigm.

Ontology	Concerns the nature of reality/truth—"what is true?" Positivist: truth is objective, single/fixed, independent of human perception, discovered/discoverable Constructivist: truth is subjective, there are multiple truths, dependent on human perception across space and time, truth is socially constructed
Epistemology	Concerns the nature of knowledge—"how do we know what is true?" Positivist: objective, non-ideological, findings are truth constructivist: subjective, ideological, findings are constructed meanings
Methodology	Strategies of inquiry to seek truth Positivist: deductive, quantitative, focus on measurement of data Constructivist: inductive, qualitative, focus on interpretation of data
Methods	Actual activities, instruments, techniques: Positivist: physical measurement, surveys, statistical analysis, structured interviews, content analysis Constructivist: focus groups, unstructured interviews, semi-structured interview, discourse analysis

The purpose of Table 1 is to explain how knowledge and truth are socially constructed through language, demonstrating CDA's constructivist orientation. Consequently, an effective CDA researcher would likely employ a constructivist research paradigm. Moreover, it

is argued that performing CDA well requires explicitly identifying one's research paradigm in their product (i.e., manuscript or presentation).

3.3.2. Explicit Reflexivity

The second important factor related to the constructivist principle is that effective CDA requires leveraging reflexivity. In the context of research, reflexivity is when a researcher is aware not just of the social context of their participants, but also of their own, and how their own social context influences their conduct, interpretations, and representations of data [16]. As with ontological and epistemological claims, researchers must not only keep reflexivity in the back of their minds, but also document it as a core element of their research findings. This is crucial because of the value CDA places on the connection between power and knowledge. Given that the majority of researchers are affiliated with universities, they occupy a position of social power in society. When analyzing text concerning a marginalized community, a researcher must be aware of how their position and the power that comes with it influences their conclusions. This reflexivity is necessary independent of a researcher's relative power in society, because researchers hold positions of power relative to participants in the research setting. It is especially important in projects targeting marginalized communities, who frequently hold little to no relative influence in society and the research setting. For effective and socially just research, it is necessary to consider the role of power relations in the process of knowledge construction in CDA research [1].

4. Critical Discourse Analysis of a Population Public Health Issue—Example

One example of critical discourse analysis of a PPH issue was performed by Reitmanova, Gustafson, and Ahmed's (2015) analysis of the Canadian Press and its implications for public health policies [17]. Using framing as a theory of media effects, the authors conducted a critical discourse analysis of 273 articles from 10 major Canadian news sources over ten years. Framing aims to explain how news media cover, construct, and represent certain stories. This requires analyzing news reports for "the presence or absence of certain keywords, stock phrases, stereotyped images, sources of information and sentences that provide thematically reinforcing clusters of facts or judgments" ([17] p. 3).

This analysis is valuable to PPH because the media influences public opinion and perception of health issues, as well as public health policy and healthcare practice. Thus, it is essential to understand how the media constructs and reports on health. More specific to this paper and to the goals of PPH, it is important to understand how the media constructs and portrays a population of Canadians who use the health system.

Reitmanova, Gustafson, and Ahmed found that Canadian news media discourses construct the immigrant body as both a disease breeder and an irresponsible fraudster [17]. Moreover, these constructs are predicated on the racialization of immigrants and immigrant health issues. The results of this study suggest: (1) the de-racialization of immigrant bodies and immigrant health issues is required for more fair and accurate media coverage on immigrant health; and (2) the transformation of the Canadian press toward greater inclusiveness. These steps are needed to create the necessary shift for immigrants to receive equitable health care access [17].

5. Critical Evaluation and Benefits to Population Public Health Research

5.1. Strengths

The main strength of CDA for PPH research is its linkage with social justice. As demonstrated thus far in this paper, CDA is a critical methodology that aims to identify and dismantle disproportionate power relations in society. Although there may be other qualitative research methodologies with links to social justice, CDA has been demonstrated to align with social justice and the core competencies of PPH. According to Edwards and Davison, PPH uses advocacy, policy change, and social interventions to improve collective health; thus, social justice is a core value of PPH [8]. This is reflected in the Public Health Agency of Canada's core competencies. The competencies that align with social justice and

CDA principles are shown in Table 2, adapted from Edwards and Davison (2008). In light of this, we contend that CDA is a critical qualitative method that is ideal for population public health research.

Table 2. PHAC core competencies, social justice, and CDA alignment.

Domain of PPH Core Competencies	Alignment with Social Justice	Alignment with CDA
Public Health Sciences	Understand relationships between social determinants of health and inequities	Critical impetus Social justice Ideology
Assessment and Analysis	Work with marginalized populations to use data to examine and act on health inequities	Critical impetus Social justice Ideology
Diversity and Inclusiveness	Understand and apply the Universal Declaration on Human Rights	Critical impetus Social justice Ideology constructivism
Communication	Develop communication strategies for subpopulations that have been historically oppressed	Critical impetus Social justice Ideology constructivism

PPH research often disregards the ideological dimension of health. As noted by Lupton (1992), public health professionals dedicate significant resources to the development of written communication to guide public health knowledge, attitudes, and behaviours [18]. This is often carried out with little regard for the social and political context in which these messages are developed and adopted, reducing their effectiveness [18]. The second strength of CDA is its ability to fill this gap by providing a methodology by which to analyze public beliefs about health, the construction of health in health promotion and mass media, and interactions between health professionals and patients. Not all research questions in PPH are best answered by ideologically driven methods. For example, a research question may ask, "Do school-based nutritional food provision programs result in decreased obesity among elementary school students, compared with school-based nutrition education"? This question may not require considerations of health ideology, and CDA may not be the ideal methodology to answer this question. In contrast, a research question may ask, "How does school staff knowledge and attitudes about the dietary behaviours of newcomer families affect the participation of newcomer children in school-based nutrition programs?" This question may require considerations of ideology, and a CDA approach may provide the best answer.

Finally, Evans-Agnew et al. (2016) describe how CDA is ideal for health policy research [3]. Specifically, it may be useful to examine the discourses that impede policy and those that promote it. Noting that most health policy research is conducted within a positivist research paradigm, the authors argue that CDA provides an alternate, more relevant research paradigm and strategy of inquiry for these purposes. This emphasis on alternative ways of knowing has increasingly been emphasized in the health sciences [3].

5.2. Weaknesses

One of CDA's most notable challenges articulates a key weakness: "CDA constantly sits on the fence between social research and political argumentation" ([6] p. 32). It is argued that the subjectivity of CDA is incompatible with the objectivity often sought in social scientific research. In response to this argument, CDA scholars assert that the social sciences are inherently subjective, making the pursuit of objectivity a futile endeavour. A researcher should not only acknowledge the subjective, but embrace its inevitability [19]. The second argument against this challenge comes from within the PPH community, specifically from critical public health scholars. It is argued that "the depoliticization of health serves powerful interests by delegitimizing analysis that might reveal and question

those interests" ([20] p. 122), concluding that the study of public health ought to be deliberately politicized. CDA inquiry strategies are not concerned with depoliticized objectivity, but with deliberate subjectivity, making it a useful tool for a range of PPH research inquiries.

The other prominent challenge to CDA is that its conclusions are rarely generalizable. Generalizability is dependent on the degree to which a research sample is representative of a population, allowing one to extend research findings outside the scope of the research project. This is of great importance in quantitative PPH research [11]. As a result of their commitment to social justice, CDA researchers should not be concerned with generalizability, but rather with identifying and challenging the structures that impact the research participants involved in the study. This requires contextualization, which may inevitably result in less generalizable results. However, CDA research findings may be transferable to other context and settings. Transferability is a concept in qualitative research that refers to the ability to apply qualitative research findings to other contexts and populations. Transferability may sound similar to generalizability, but the key difference is that the research sample is not required to be representative of a larger population and may or may not share certain qualities that allow for transferability. Moreover, whereas a lack of generalizability may be considered a limitation in quantitative research, a lack of transferability is not a drawback in qualitative research. Transferability is a desired aspect of qualitative research rather than a fundamental criterion for evaluating a study [19].

5.3. Benefits to PPH

The primary contribution of CDA to PPH research is its alignment with PPH's fundamental goals and alternate ways of seeking information. It has been argued that PPH research is frequently influenced by the research paradigms of the biomedical sciences. As a result, the wrong questions are often asked, the wrong methods are often used, and the wrong conclusions are often drawn to affect meaningful change in population health [3]. PPH research ought to fulfill key aims of PPH: to address the social determinants of health and reduce health inequities. This purpose is consistent with the principles of critical studies and social justice. This objective often requires researchers to focus on how individuals socially stratify, use their power, and construct health. CDA research accomplishes this through its critical impetus and constructivist orientation.

Additionally, while not all PPH research and initiatives focus specifically on marginalized populations, this is an important area of emphasis, because marginalization is a significant social determinant of health. The analysis of how language serves to produce and maintain uneven societal power relations [18] is fundamental to CDA; thus, it is a useful tool for examining how dominant discourses construct marginalized populations and health in a way that further impedes health for already marginalized communities.

6. Conclusions

This paper has explored the value of critical discourse analysis to population public health research. There are three principles that are crucial to the effectiveness and success of CDA: (1) CDA research should contribute to social justice; (2) CDA is strongly based in theory; and (3) CDA draws from constructivist epistemology. As with any other methodology, CDA has both strengths and weaknesses. Its strengths include that its critical impetus aligns with the social justice orientation of PPH, its attention to ideology enables effective inquiry into public beliefs about health, and its constructivist roots make it ideal for analyzing how health policy is formed and implemented. Weaknesses or challenges posed to CDA include that it is often excessively politicized, and its findings are often not generalizable. This analysis demonstrates the need for researchers in population public health to consider critical discourse analysis as an approach to understanding the social determinants of health and eliminating health inequities in order to achieve the health and wellness of all.

Through this exploration of the value of critical discourse analysis in public health research, the authors have learned and demonstrated the following. CDA is a method of examining how meaning about a particular phenomenon is constructed through language within a socio-political context. Intrinsic to CDA is the analysis of how language serves to produce and maintain societal power relations [8,9]; thus, it serves as a useful tool in examining how dominant discourses construct health issues. The aims of PPH, particularly the elimination of health inequity, is inherently socio-political. A PPH approach posits that health is socially, economically, and environmentally determined and that health inequities are the result of unfair inequalities in the distribution of social, economic, and environmental resources and benefits. The de-politicization of population health studies serves to reinforce the systems that produce health inequities [9]. The intrinsically political and critical stance of CDA allows us to challenge the socio-political structures and processes that create health inequities as a first step to eliminating them, fulfilling a core objective of population public health. The exploration in this study can serve as a step toward transforming how PPH research is approached in the future.

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Concept Paper

Racism as a Social Determinant of Health for Newcomers towards Disrupting the Acculturation Process

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Abstract: Previous research has demonstrated that racism is a social determinant of health (SDOH), particularly for racialized minority newcomers residing in developed nations such as the United States, Canada, New Zealand, and European countries. This paper will focus on racism as a SDOH for racialized newcomers in these countries. Racism is defined as "an organized system of privilege and bias that systematically disadvantages a group of people perceived to belong to a specific race". Racism can be cultural, institutional, or individual. Berry's model of acculturation describes ways in which racialized newcomers respond to their post-migration experiences, resulting in one of several modes of acculturation; these are integration, assimilation, separation, and marginalization. After examining the definition and description of racism, we argue that racism impacts newcomers at the site of acculturation; specifically, the paths they choose, or are forced to take in response to their settlement experiences. We posit that these acculturation pathways are in part, strategies that refugees use to cope with post-displacement stress and trauma. To support acculturation, which is primarily dependent on reducing the effects of cultural, institutional, and individual racism, health policymakers and practitioners are urged to acknowledge racism as a SDOH and to work to reduce its impact.

Keywords: racism; health; social determinant of health; acculturation

1. Introduction

Previous research has demonstrated that racism is a social determinant of health (SDOH) that is associated with poor physical and mental health outcomes [1–4]. Moreover, racism has a unique impact on racialized minority newcomers residing in developed nations such as the United States, Canada, New Zealand, and countries in Europe [2,5]. This association has been demonstrated for many racialized populations, including indigenous communities, native-born people of colour, and newcomers of colour [6]. There is little research, however, on how racism affects acculturation [7], which is "the process by which migrants to a new culture develop relationships with the new culture and maintain their original culture [8] (p. 292)".

This paper examines racism as a SDOH for racialized newcomers in developed countries. We will define and describe racism before summarizing the existing literature on racism as a SDOH using four key literature reviews. Using Barry's typology of acculturation, we will explain how racism functions as a SDOH for racialized newcomer populations in developed countries. This analysis aims to add to a dialogue and future research on how racism impacts newcomers specifically, by interrupting the process of acculturating into a new society.

2. Situating the Researchers

While this is not a primary research project in which researchers interacted with participants, we must consider our writers' positionality. This article focuses on racialized minority newcomers, who are often members of marginalized communities and are often spoken about by outsiders in positions of privilege. Thus, it is critical for us as writers to consider our positionality in relation to the subjects of this article [9]. Positionality describes an individual's world view and the position they adopt about a research task and its social and political context [10–12].

One of the authors (J.N.) is a Canadian-born woman of South Asian ethnicity. She speaks English as her first language and Hindi as her second. As a Canadian-born citizen, she is in a position of privilege in terms of immigration status. She does not personally bear the fear of losing her right to residency, nor is she separated from loved ones in her birth country. She does not experience discrimination based on her English proficiency and accent because she speaks English as a first language. This researcher has proximity to newcomers through her parents and much of her extended family, thus she has some awareness of the newcomer experience. Another author is a white female (E.O.P) who was born in Canada one month after her parents emigrated from northern Italy. She is sensitive to the hardships of newcomers and the tensions of retaining cultural, ethnic, and religious values in Canadian culture. She works in academia as an applied educational psychologist, placing her in a position of privilege and influence. The last and corresponding author (T.C.T) is a Bangladesh immigrant to Canada. He is employed as an academic in Canada which places him in a position of privilege. He conducts research with racialized/ethnic-minority communities. He has observed very closely the issues of misinformed stereotyping, unconscious bias, pre-judging or prejudicing, discrimination, and racism at the structural and community levels.

The purpose of this paper is to provoke reflection and inspire discourse about racism as a SDOH and a key factor in determining newcomer acculturation. Our goal is for this work to contribute to a shift in research focusing on newcomer experiences using an anti-racist lens. We hope that such research further benefits newcomer communities by allowing us to hear their stories, validate their experiences, and work toward the goal of reducing the impact of racism on immigrant health and wellness, and ultimately to eradicate racism.

3. Racism

There are various definitions of racism and much debate in public discourse; therefore, it is critical that we define and describe the concept of racism adopted in this paper. We adopt Dovidio, Gaertner, and Kawakami's (2010) definition of racism, defined as "an organized system of privilege and bias that systematically disadvantages a group of people perceived to belong to a specific race [13] (p. 312)". Dovidio et al. also adhere to the sociological definition of racism as "prejudice plus power". In other words, for an event to be racist as opposed to simply prejudiced, it must further disadvantage an already marginalized racial group within a specific social context [13] (p. 316). Dovidio et al. characterize racism into three categories: (i) cultural, (ii) institutional, and (iii) individual. Each of these is described further below.

Cultural racism occurs when a racially dominant group defines cultural values for all [13]. One example of this is the declaration of Christmas day as a statutory holiday in Canada, the US, Australia, New Zealand, and European countries, with almost universal time off work and school to observe the tradition. While Christmas is celebrated by many racial groups in these countries, it is historically a "white" holiday with European roots; the adoption of Christmas by racialized minorities is directly linked to colonialism [14]. Moreover, the aforementioned countries identify as multi-cultural mosaic societies, with many racialized minority communities celebrating religious and cultural holidays other than Christmas, which are not generally recognized as statutory holidays. Recognizing Christmas as a statutory holiday whilst not recognizing other, commonly observed holidays as statutory holidays serves to establish Christmas as a norm, while "othering" holidays

such as Eid al Fitr, Diwali, and Kwanzaa [15]. The treatment of Roma communities in Europe is also reflective of cultural racism [16–18]. For example, widespread hostility toward Roma throughout European countries is often rooted in a feeling of threat toward the lifestyles and traditions of host countries. Roma culture, particularly the aspects of transience and separateness, is often perceived as incompatible with host countries. State policy and practice often promote the complete assimilation of the Roma people, thus the complete erasure of Roma culture. The Roma are seen as a threat to the host society, which creates a climate of hostility toward the Roma and allows for the social mistreatment and deprivation of Roma communities [17].

Institutional racism occurs when institutional practices have a disproportionately negative impact on racialized minorities. A practice or policy does not have to be explicitly or intentionally targeted toward racialized minorities to be termed institutional. When such practices and policies are routinely applied with impunity, they gain institutional power. The intentions of perpetrators have little to no bearing on the grievous harms inflicted by racism on its victims [13]. The Canadian practice of traffic police documenting and forwarding personal information on people of interest to detectives, colloquially known as "carding," is an example of institutional racism. Carding policies do not explicitly compel police officers to disproportionately target black, Indigenous, and people of colour (BIPOC). Nonetheless, in Toronto, Canada, BIPOC individuals are carded at a higher rate than non-BIPOC, resulting in a disproportionate rate of police violence and overrepresentation of BIPOC people in the Canadian correctional system [19]. (Henry and Tator 2016). Institutional racism can also be found in school systems, where curriculum design focuses disproportionately on ethnocentric perspectives of history, omitting the voices and experiences of racialized people. This leads to students feeling invisible and unheard within the school system, and "home education" is often more valuable than classroom instruction. Disengagement and disenfranchisement can have major consequence for school satisfaction and performance [20].

Individual racism is enacted from one person to another. It can manifest itself as prejudice, which is bias against an individual based on their perceived identity. Discrimination occurs when an individual acts upon their prejudice, resulting in unjust treatment of another individual based on their perceived identity. Racism is also frequently manifested as stereotyping, which is the misattribution of negative characteristics to an individual based on beliefs about their identifiable group [13]. For example, immigrant South Asian women in Australia who are diagnosed with gestational diabetes mellitus report experiences of stereotyping from health care providers. These experiences include assumptions that South Asian women's' health literacy and dietary behaviours are primarily responsible for their diabetes diagnoses and outcomes. During health appointments, such stereotypes cause women to feel ashamed and discouraged [21]. In the context of New Zealand, a comparable example may be discussed. Harris, Cormack, and Stanley (2019) found that racism by health professionals, which often includes race-based stereotyping and assumptions of health behaviours, leads to higher rates of unmet needs in New Zealand's racialized communities [22].

4. Racialization

In this paper, we refer to the concept of racialization as opposed to race. This is done to emphasize that the health outcomes we discuss are not the product of one's biology (i.e., their racial or ethnic make-up), but of the experience they have as a result of how they are perceived and treated in social settings. "Racialization is the process of manufacturing and utilizing the notion of race in any capacity [23] (p. 27)". It is the complex social and cultural process by which individuals and groups are ascribed a particular "race" and socially stratified based on that race. Racialization has been and continues to be a kind of inequitable social stratification, resulting in social and health disparities. As such, race is a social construct as opposed to a fundamental part of an individual or group. The use of race as a variable in human studies has been deemed questionable [24], and even

racist [25,26]. For example, Hunt and Megyesi (2008) conducted interviews with human genetic scientists who used race as a variable in their research. They found that the basis on which the researchers categorized individuals by race were nebulous and illogical, and that, despite claims of scientific neutrality, we live in a racist culture, which means that race is socially constructed [27]. The authors concluded that "persisting in constructing scientific arguments based on highly ambiguous variables that are clearly laden with dubious social meanings, is of deep concern [27] (p. 11)". Our paper contributes to the body of literature on racialized health disparities as opposed to racialized health outcomes by demonstrating that such health outcomes are unfair, avoidable, and socially produced, rather than an intrinsic component of an individual's biology [25,26].

5. Literature Review Summary

This section will summarize the findings of four key literature reviews that we have identified as critical to understanding the relationship between racism as a SDOH and newcomer health and wellness.

5.1. Perceived Discrimination and Health: A Meta-Analytic Review

In their meta-analytic review, Pascoe and Smart Richman (2009) focus on perceived discrimination based on race, gender, sexual orientation, and other identities rather than racism exclusively. Racism was found to be the most common type of perceived discrimination, appearing in 65% of all articles in their literature search [28]. The authors define discrimination as "a behavioural manifestation of a negative attitude, judgment, or unfair treatment toward members of a [28] (p. 3)", which is consistent with the description presented above by Dovidio, Gaertner, and Kawakami (2010). A total of 134 articles supported their hypothesis that perceived discrimination is associated with poor physical and mental health outcomes. (Pascoe and Smart Richman 2009) Discrimination, in particular, is associated with "heightened physiological stress responses, more negative psychological stress responses, increased participation in unhealthy behaviours, and decreased participation in healthy behaviours [28] (p. 20)".

5.2. A Systematic Review of Empirical Research on Self-Reported Racism and Health

Paradies (2006) reviewed 138 quantitative research articles and similarly found that racism is associated with poor health for oppressed racial groups. Negative mental health and mental illness were found to have the strongest associations [2]. Five key pathways between racism and health were identified; racism was related to: (1) reduced access to employment, housing and education, and/or increased exposure to risk factors such as contact with police; (2) adverse cognitive/emotional experiences and psychopathology; (3) allostatic load and concomitant patho-physiological processes; (4) reduced participation in healthy behaviours such as exercise and/or increased participation in unhealthy behaviors such as substance use; and (5) physical injury as a result of racist violence [2].

5.3. Racism as a Social Determinant of Health: A Systematic Review and Meta-Analysis

In their systematic review, Paradies et al. (2015), like Dovidio, Gaertner, and Kawakami (2010), define racism as "organized systems within societies that cause avoidable and unfair inequalities in power, resources, capacities, and opportunities across racial or ethnic groups [6] (p. 2)". Data from 293 studies revealed that racism was associated with lower health outcomes on all measures. Depression (37.2% of articles) was the most often reported mental health outcome, followed by self-esteem (24.3%), psychological stress (21.3%), distress (18.3%), and anxiety (14.4%). High blood pressure and hypertension were the most reported physical health outcomes, reported in 7.2% of articles [6].

5.4. Implicit Racial/Ethnic Bias among Health Care Professionals and Its Influence on Health Care Outcomes: A Systematic Review

Hall et al. (2015) conducted a systematic review of fifteen cross-sectional studies examining implicit bias using the Implicit Association Test [29]. They found low to moderate levels of implicit racial bias among health care professionals against racialized minorities compared with white people across all but one study. They also found that implicit bias was significantly related to four categories/themes: patient–provider interactions, treatment decisions, treatment adherence, and patient health outcomes. The most significant of these relationships was implicit bias and patient–provider interactions, with black patients perceiving poorer treatment in terms of patient centered care. Another significant relationship was and implicit bias and health outcomes, particularly psychosocial health outcomes such as social integration, depression, and life satisfaction [29].

5.5. Social Determinants of Health: The Impact of Racism on Early Childhood Mental Health

In their review of the impact of racism on infant and early childhood mental health and socioemotional development. Berry, Tobon, and Njoroge (2021) found that young children are particularly impacted by experiences of and indirect exposure to racism [30]. The authors conclude that" racism is particularly nefarious to young children's socioemotional development" and has long term implications for mental health into adolescence and adulthood. Racism has unique impacts on children from the perinatal period, to the infant toddler period, and into pre-school and grade school. Moreover, children are affected both directly and indirectly by racism throughout their development. For example, racialized minority children are direct victims of racism in school environments, which negatively affects their mental health. Additionally, racism affects parenting practices and maternal/caregiver mental health, which then affects which negatively affects child mental health [30].

5.6. The Perspectives of Health Professionals and Patients on Racism in Healthcare: A Qualitative Systematic Review

A qualitative systematic review of 23 articles, with a total of 1006 participants across the articles, looked at the perspectives of professionals and patients on racism. The authors found that healthcare providers perpetuated racism due to their unconscious (and sometimes conscious) biases toward patients. For example, providers professed less empathy toward racialized minority patients because they were less able to connect with patients of a different race than themselves, yet they often shifted blame for health disparities on minority patients behaviours as opposed to racism. The authors also found two major themes, generated through interviews with racialized minorities. These were: (1) alienation of minorities due to racial supremacism and lack of empathy, resulting in inadequate medical treatment; and (2) labelling of minority patients who were stereotyped as belonging to a lower socio-economic class and having negative behaviors. The findings of this study support the notion that experiences of racism in healthcare interactions contributes to inadequate medical service and treatment for racialized minorities, which can then lead to poor health outcomes [31].

5.7. Perceived Racism and Mental Health among Black American Adults: A Meta-Analytic Review

A meta-analytic review of perceived racism and mental health among Black Americans found that perceived racism is associated with poor physical and mental health outcomes [32]. The authors focused on this group because they report more incidents of racism than other racialized minorities. Pieterse et al. (2012) systematically reviewed 66 studies with total sample size of 18,140 across studies. Using a random effects model, the authors found a positive association between perceived racism and psychological distress ($r = 0.20$). As exposure to and appraised stressfulness of racist events increased, so did the likelihood of reporting mental distress. Moreover, effects for psychiatric symptoms and general distress were stronger than effects for life satisfaction and self-esteem. Thus, these

findings support the notion that racism ought to be viewed within the context of trauma in the field of mental health [32].

5.8. The Global Refugee Crisis: Empirical Evidence and Policy Implications for Improving Public Attitudes and Facilitating Refugee Resettlement

As part of their broader investigation into the global refugee crisis, Esses, Hamilton, and Gaucher conducted three literature reviews. The two most relevant to this paper are: (1) the determinants of public attitudes toward refugees, and (2) factors affecting refugee mental health [33].

Esses et al. use the UNHCR definition of refugees, which is "a person who is outside his or her country of nationality or habitual residence; has a well-founded fear of being persecuted because of his or her race, religion, nationality, membership of a particular social group or political opinion; and is unable or unwilling to avail him- or herself of the protection of that country, or to return there, for fear of persecution [33] (p. 79)". While they do not specify and define racism as the public attitude of concern, they note that "citizens of Western countries (i.e., developed countries of Europe, North America, and Oceania) do not always regard refugees with compassion and focus on their safety. Instead, at times they approach refugees with intolerance, distrust, and contempt, partly because they believe there is a trade-off between the well-being of refugees and the well-being of established members of potential host countries [33] (p. 80)".

In their first literature review, the authors found that public attitudes toward refugees tend to construct refugees as threats. These constructs are: (1) threat to safety, such as the association of refugees with terrorism; (2) threats to the economy, such as bogus claimants who are only here for the money; (3) threats to culture, such as flawed beliefs about "how Muslims treat women;" and (4) threats to health, such as carriers of disease, particularly communicable disease. These perceptions of refugees as threats were found to be the strongest predictors of racism toward refugees [33] (p. 9).

Esses et al. also reviewed the literature on the factors influencing refugee mental health. This is an important area of inquiry since research demonstrates that refugees experience higher rates of mental health issues and mental illness than the population of their country of origin population, the host population, and other categories of newcomers. This may be due to the uniquely traumatic experiences refugees endure including trauma from violence, loss, and grief [33]. The factors that affect refugee mental health are divided into four areas: (i) refugee characteristics, (ii) pre-migration trauma, (iii) the resettlement process, and (iv) post-displacement factors. Many of the factors in the latter two categories, which occur in host countries, are examples of racism. These include time spent in detention, the asylum interview process, economic opportunities, host country language proficiency, and experiences of discrimination [33].

6. Racism as a Social Determinant of Health and Wellness of Newcomer Populations

To reiterate, the purpose of this paper is to demonstrate how racism affects the acculturation process for newcomers. We use John Berry's model of acculturation to demonstrate this. We begin by briefly describing the model and then demonstrating how racism disrupts newcomer acculturation.

John Berry's model of acculturation identifies four forms or paths of acculturation, that refugees often take. Among these pathways are: (1) Integration occurs when newcomers maintain their culture and values while adopting certain aspects of the host society's culture and values. This is often regarded as the most ideal form of acculturation [34]; because it allows people to maintain the core aspects their identity while adopting the values and practices of their host country that help them successfully navigate their new worlds (2) Assimilation occurs when newcomers reject their heritage and adopt most or all aspects of the host society's culture; (3) Separation occurs when newcomers maintain their heritage culture and values and reject that of the host society; and (4) Marginalization occurs when newcomers reject both their own and the host society's heritage [35].

We contend that racism affects newcomer populations at the site of acculturation, specifically on the paths they select or are obliged to pursue in response to their settlement experiences. These acculturation paths are, in part, coping strategies for refugees dealing with post-displacement stress and trauma, as shown in Paradies' (2006) five pathways between racism and health. According to Esses, Hamilton, and Gaucher (2017), "one of the major solutions to the refugee crisis must be refugee resettlement in new host countries" [33] (p. 78). This must involve more than simply allowing refugees to enter western countries. As the World Health Organization states, we must create an environment that promotes the mental health and wellness of incoming refugees. (WHO 2018) Integration is most conducive to this goal. When refugees experience racism, they are more likely to choose assimilation, separation, or marginalization as a coping strategy [35]. Evidence suggests that these coping strategies have detrimental effects on health and wellness [32].

In this section, we will compare each of the three scenarios of racism outlined previously to Dovidio, Gaertner, and Kawakami's (2010) definition of racism. We will also demonstrate how each scenario may lead to a less-than-ideal path of acculturation according to Berry's typology, as well as poor health and wellness based on Paradies' (2006) pathways. Each of these scenarios is provided as an example of possible outcomes, not as proof of the only conceivable pathways.

The establishment of Christmas as a statutory holiday is an example of cultural racism, as defined by Dovidio, Gaertner, and Kawakami (2010), whereby one racial group sets cultural standards for all. Assimilation may result from the stigmatization of cultural practices. Stigmatization often leads to shame and internalized racism, which is the adoption of racist views toward one's own race [13]. For example, consider the language of Canada's Zero Tolerance for Barbaric Cultural Practices Act of 2015. This Act was an amendment to the Immigration and Refugee Protection Act [33]. While the Act pertains to marriage practices, many Canadians have extended the notion of barbarism to other cultural practices followed by non-white newcomers. In this context of stigma, diverse cultural behaviours are frequently impossible to distinguish, rendering them all "barbaric" in the eyes of policy and mainstream discourse. This form of racism may lead a racialized minority newcomer to follow Berry's separation pathway, rejecting the cultural practices of their heritage to avoid shame. This scenario best exemplifies Paradies' second pathway, namely adverse cognitive and emotional experiences as a result of racist, stigmatizing language used in policy discourse [2].

Because it has unjust effects on racialized minorities, "carding" is an example of Dovidio, Gaertner, and Kawakami's (2010) concept of institutional racism [13]. The experience of carding can be traumatic, leading to feelings of fear and mistrust toward host societies [36–38]. Research has found that newcomers in the United States who are subjected to carding in host societies are more likely to develop feelings of hostility toward host cultures, as well as heightened identification with their heritage identity. Thus, they are more likely to adopt Berry's separation pathway of acculturation. In extreme cases, these practices, combined with a lack of supports and services for mental health, education, and employment during settlement, can lead to engagement in violence and extremist activities [33]. Outcomes associated with this scenario are most consistent with Paradies et al.'s (2006) first pathway, increased contact with police, and third pathway, injury as a result of racist violence [2].

The experiences of South Asian immigrant women in Australia illustrate Dovidio, Gaertner, and Kawakami's (2010) concept of individual racism [13]. We contend that, while race/ethnicity is the label that many organizations and literatures use, individual health is not determined by race itself. People are not at risk of poor health outcomes by virtue of their race, but rather because of unfair and unjust treatment based on their racialized identity. Patient-centered care, for example, is an empowering style of medicine that results in effective health outcomes for patients by involving patient values and preferences [39]. Racist perceptions of patient efficacy act as a barrier to patient-centered care, preventing many racialized refugees from making informed, supported decisions about their health. It

may also lead to Berry's marginalization path of acculturation, which includes a rejection of the host society's medical community as well as a rejection of (or lack of access to) one's heritage health practices. (Berry 1997) This form of acculturation is possibly the most alienating and dangerous, particularly in terms of health. This type of racism can create barriers to healthcare access and is most closely aligned with Paradies' 2006 fourth pathway to poor health, reduced participation in healthy behaviors [2], such as attending regular medical appointments.

7. Conclusions

While previous research has demonstrated that racism is a social determinant of health [1,2], little research has been conducted on how racism is a social determinant of health for newcomers during the acculturation process. The discussion in this paper has underscored that racism is a social determinant of health on a global scale. There is examples of this in Canada, the US, New Zealand, Australia, and European countries. Using Berry's typology, we illustrated (Figure 1) how racism functions as a social determinant of health by interfering with integration, the process of ideal acculturation. As a result of racism, refugees are more likely to be forced into assimilation, separation, or marginalization as a means of coping. These coping methods have a number of harmful physical and mental health consequences. According to the World Health Organization, it is the obligation of refugee-welcoming nations to promote the mental health and wellness of incoming refugees [40]. A fundamental means of supporting health and wellness is healthy acculturation (integration), which is heavily dependent on reducing the impact of cultural, institutional, and individual racism. This exploration demonstrates a need for future research in racial studies, examining the association between racism and acculturation for newcomers. Furthermore, our discussion necessitates a multi-sectoral approach that includes the entities discussed in this paper (immigration policy, healthcare service delivery, and policing), as well as other institutions and organizations that have an impact on population wellbeing. This contributes to the population public health goal of ensuring that all individuals, regardless of race, religion, or citizenship status, have access to optimal health.
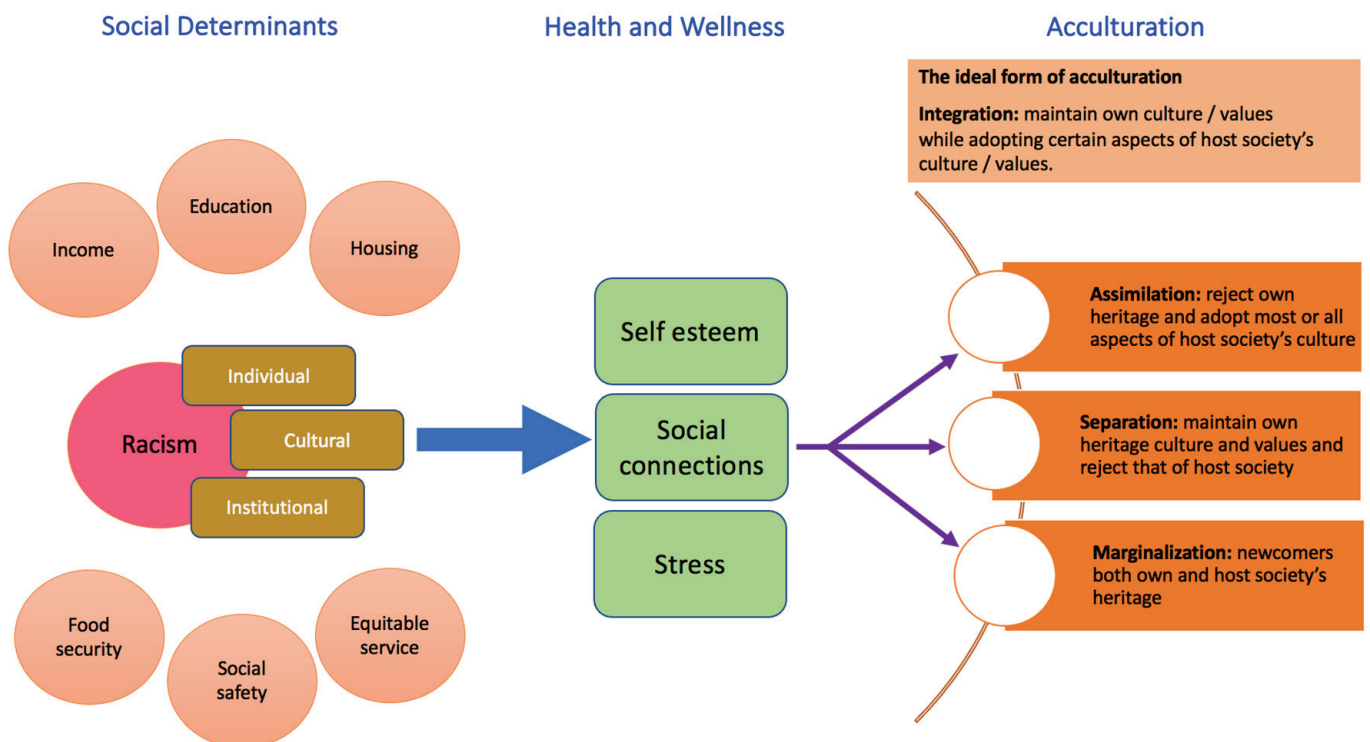

Figure 1. Racism as social determinant of health-wellness and acculturation of newcomers.

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Article

Decolonizing Sustainability through Indigenization in Canadian Post-Secondary Institutions

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Abstract: Sustainability discourse indicates a need to reconsider our approaches to social, economic, and environmental issues because, without deep transformation, global human survival is in jeopardy. At the same time, post-secondary education institutions in Canada are Indigenizing their settings but have rarely taken up sustainability and Indigenization as related concepts. In this research, participants delivering Indigenous programming in ten colleges and universities across Canada contributed their insights on the relationships between Indigenous worldviews and sustainability in their territories and institutions. The five key findings that emerged from the study are: (1) Indigenous worldviews are based on a belief in the sacred, which orients Indigenous knowledges and responsibilities for sustaining life on Earth; (2) sustainability is expressed as a function of tradition linking Indigenous identity with culture, language, and environmental health; (3) entrenching Indigenous knowledges throughout institutions is to sustain cultural identity; (4) national and international standards supporting Indigenous self-determination are primary drivers for the inclusion of Indigenous knowledges and advance the underlying principle of sustainability; and (5) Indigenous holistic learning includes social, economic, and environmental aspects of sustainability.

Keywords: Indigenous; Indigenous knowledge; sustainable development; sustainability; education; decolonize; traditional knowledge; post-secondary education

1. Introduction

What would a sustainable world look like if global humanity had gotten everything *right*? It is difficult to imagine the kinds of world governments, legal systems, trade, transportation, and education systems that would have emerged around the world. What does sustainability even mean? One of the most well-known explanations of sustainable development came from the Brundtland Commission, in *Our Common Future*, which said: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [1] (p. 41). There are many scientists and other scholars who believe we are failing in this effort [2]. It seems a monumental challenge to pursue sustainable lifestyles in light of the reality of the human desire to have more than is needed, to accumulate wealth and power, and to control lands, resources, and citizenry. One wonders if it is even possible to slow or reverse our nature to be unsustainable. In Canada, the legacy of colonization built on exploitation and wealth generation has entrenched a legacy of unsustainable consumerism. Despite this, traditional teachings of Indigenous peoples across Canada contain unique philosophical worldviews about sustainability and continue to be upheld by their respective communities. Examination of the Western concept of sustainability in relation to Indigenous perspectives reveals how Indigenous knowledges can generate community and land-based resiliency and decolonize intergenerational knowledge transmission. Subsequently, post-secondary education institutions can become important sites across Canada where Indigenization is recognized as consistent with the social, economic, and environmental pillars of sustainability.

In Canada, Indigenous peoples are inclusive of First Nations, Métis, and Inuit under the *Constitution Act of Canada, 1982* [3]. First Nations and Inuit occupied traditional territories across Canada for millennia before colonization. Métis emerged as a Nation in the generations following colonization. The biological lineages of Métis people are acknowledged as having come from First Nations and European ancestors, but who came to be recognized as a distinct culture of people. Indigenous peoples' traditions are often based on ancestral teachings about relationships with non-human ancestors or relations within the natural world. As such, Indigenous peoples believe maintaining life support systems is essential not only for humans but also for all living things, and subsequently, try to honour these teachings in contemporary life. Interpreting environmental issues through Indigenous worldviews, whether First Nations, Métis, Inuit, or otherwise, requires thinking beyond mechanistic scientific methods and theories, social theories, and colonial legal processes to consider relationships among human and non-human elements of nature. My identity as a Métis person often gives me strength and insight into the need to honour the biological and cultural gifts of all my ancestors.

As an Indigenous educator and member of the Métis Nation, I have studied relationships between Indigenous worldviews and science education in Kindergarten–Grade 12 schools for some time [4,5]. I also spent time working for Métis Nation political authorities on environmental issues. During these years, I lamented how few published Indigenous science resources were available for use in schools or in other forums where evidence-based knowledge was influential. In my research, I set out to explore the linkages among Indigenous knowledges and sustainable development in post-secondary institutions (hereafter referred to as PSE) [6]. For decades, Indigenous peoples have called for Western education systems, and other elements of society, to decolonize as a process of undoing and repairing some of the damage to Indigenous peoples.

> Decolonization, however, does not mean and has not meant a total rejection of all theory or research or Western knowledge. Rather, it is about centering our concerns and world views and then coming to know and understand theory and research from our own perspectives and for our own purposes. [7] (p. 39)

Colonization and decolonization are more than a physical expression of habitation, they are also the connective intellectual, spiritual, and ethical systems of complex human social systems.

Expressing decolonized knowledge can also ensure that marginalized voices of all Indigenous persons, including men, women, youth, elders, and folks from the two-spirit, lesbian, gay, bisexual, transgender, queer, questioning, intersex, and asexual communities are heard. Expanding the human range of thought is reliant upon many voices and perspectives that will contribute to our collective energy and ability to problem-solve.

At one time, sustainability was thought of primarily in the physical terms of environmental conservation. It began with a recognition that humans are overexploiting, polluting, and destroying the natural world faster than it can recover. Thomas Malthus put forward an environmental limits theory in 1798, in which he predicted limits to economic growth and food security because of resource scarcity caused by the growing human population and a limited amount of good agricultural land [8,9]. In 1962, Rachel Carson published *Silent Spring* on the effects of environmental toxins, and in 1968, Paul Ehrlich published *The Population Bomb* on connections among the human population, resource exploitation, and the environment [10].

Over time, broader scholarly attention to environmental degradation, development, and economics grew and branched into a variety of ideological streams, such as eco-theology, eco-feminism, and eco-socialism, each with particular points of view, histories, and recommendations for action. Academic disciplines concerned with environmental economics, deep ecology, and social ecology, among others, have also taken shape contributing to the development of over 67 sectoral sustainability assessment tools relevant to, for example, innovation, technology, human development, market economies, ecosystems, products, cities and other geographic areas, and energy [8,11].

Globalization has changed the way humans live and consume, resulting in a relational need for a commitment to slow or reverse, our damaging presence on Earth. Over the past few decades, individuals and governing authorities have expanded the meaning and definition of sustainability to be inclusive of social, economic, and environmental elements, which then led the global community to develop and implement the 2030 Sustainable Development Agenda and Goals [1,12]. Decolonization of sustainability is not a process of undoing entire systems that will return us to pre-colonial times in Canada, but rather it can be understood as a systemic process of re-shaping how we, and the generations to come, can think, live, and thrive on a healthy planet.

In my research [6], it was my contention that if similarities existed between the purpose and goals of environmental sustainability and Indigenous knowledges, then PSE institutions could become important sites across Canada where Indigenization is recognized as consistent with the social, economic, and environmental pillars of sustainability. In this regard, I came up with a series of questions that would help me explore my contention. I wanted to know how PSE places of learning serving Indigenous learners addressed environmental sustainability. I wanted to know what Indigenous philosophical principles concerning the environment and interconnectedness in relation to sustainability could be found in PSE. I wanted to know how curriculum, research, facility operations, institutional governance processes, and community outreach were linked to sustainability through practice and policy in PSE. Finally, I wanted to know how sustainability was practiced in PSE, and what policies drove those practices.

2. Research Context

To advance this exploration, I looked at a broad range of literature about the history of sustainability, Indigenous communities, and what was happening in community-based conservation. I looked at some knowledge systems of Indigenous peoples, including traditional livelihoods; land use, languages, and environmental decision-making. Then finally, I looked at Indigenous education, contemporary careers, sustainability in education, and practice–policy gaps in PSE. These areas of inquiry helped articulate the landscape of thought in particular areas of interest. While I mused about the question of what the Earth and human societies might look like if we had gotten things *right*, I also wanted to be clear about what we were doing *wrong.* I knew, from my academic and cultural experiences, that the scientific and traditional Indigenous communities had more in common than many people might have thought. Why does this matter?

I began by looking at what is at stake in our decision-making about living on a sustainable planet. In an article supported by over 15,000 scientists and other scholarly signatories, Ripple et al. offer a dire warning, "[W]e have unleashed a mass extinction event, the sixth in roughly 540 million years, wherein many current life forms could be annihilated or at least committed to extinction by the end of this century" [2] (p. 1026). The seriousness of these and other environmental issues point to the need for humanity to transform the way it views and interacts with the environment. Mass extinction is not projected; it is already underway. Despite widespread knowledge of environmental problems, human behaviour has been slow to change. Earth systems now support over 7 billion people and projections estimate a likely increase to between 9 and 12 billion by 2100, making sustainability the urgent issue of our time [9,13]. The United Nations and its subsidiary bodies have produced report after report based on scientific evidence, Indigenous perspectives, and national governments' reports about the declining state of our world. Global Environment Outlook 6 called for urgent action by world governments [14]. Despite begin a minority in their own traditional territories, Indigenous peoples' worldviews in Canada have remained a source of strength for many who understand the value of this enduring wisdom.

Creation stories of First Nation cultures in Canada convey that humans are the least important life form, being created last and being most dependent [15]. Human dependence is reflected in the importance Indigenous peoples have traditionally placed on the environment. This wisdom exists because Indigenous cultures and languages emerged

over millennia from their knowledge, understanding, and relationships with the natural world [16–18]. Embedded within Indigenous cultures and languages are the traditional laws intended to guide thought and behaviour. Traditional protocols, principles of culture, languages, spiritual belief systems, kinship, and relationships with non-human life forms demonstrate Indigenous peoples' understanding of their reliance on the natural world [19–21].

Indigenous peoples' traditions are often based on ancestral teachings about relationships with non-human ancestors or relations within the natural world. As such, Indigenous peoples believe maintaining life support systems is essential not only for humans but also for all living things and subsequently, continue to honour these teachings in contemporary life. Interpreting environmental issues through Indigenous worldviews, whether First Nations, Métis, Inuit, or otherwise, requires thinking beyond mechanistic scientific methods and theories, social theories, and colonial legal processes to consider relationships among human and non-human elements of nature.

3. Methodology

In this qualitative research project, I used a decolonizing approach informed by Indigenous methodology and Indigenous, critical, and emancipatory theories. By honouring Indigenous ways of thinking and acting, I could accommodate participants' subjective experiences and the process of recognizing socially constructed knowledge. Moving beyond strictly academic research meant including a social justice and action agenda for advocacy and participatory knowledge, and being a good relative, in the traditional Indigenous sense, by being accountable to all my relations as a researcher. Most Indigenous cultures across Canada recognize their relations as being more than biologically linked family members, extending to other entities such as plants, animals, minerals, and water. This recognition brings an added responsibility for Indigenous researchers. The methodology was adopted to identify foundational principles of Indigenous knowledges in relation to sustainability, critically examine what participants saw as benefits and constraints of advancing Indigenous knowledges in PSE, and gain advice from participants about future action planning.

Ten Canadian PSE institutions were included in the research (seven universities and three colleges). Two institutional sites were in Eastern Canada, two were in Northern Canada, four were in Western Canada, and two were in Central Canada. Each of the 10 participants provided a one to two-hour interview, by telephone or in person, and completed an online survey. In order to capture a broad spectrum of perspectives of individuals working in vastly different locations across Canada, serving the Indigenous peoples of various nations, I asked participants a series of questions that covered a range of topics related to their conceptions of sustainability.

Analysis of Research Findings 1 and 2 was based on participants' responses to the first research question: In the territory you work, what Indigenous philosophical principles concern the environment and interconnectedness in relation to sustainability in post-secondary education? An analysis of *sustainability* and *Indigenous knowledge* as themes in participant interviews provided the data used. Finding 3 was based on participants' responses to the second research question: In your PSE place of learning, how are *curriculum*, *research*, *facility operations, institutional governance processes*, and *community outreach* linked to sustainability through practice and policy? These areas of inquiry were taken up as a whole in interviews but analyzed thematically in interviews and surveys. Findings 4 and 5 were based on participants' responses to the third research question: In your PSE place of learning, how is the concept of sustainability practiced and what policies drive these practices? Responses in interviews were drawn from themes of *Indigenous knowledges*, *sustainability*, *conservation*, and *networking* as they pertained to the practices and driving policies in participant settings.

This research received approval from the University of Saskatchewan Research Ethics Office for: the ethics application, letter of invitation, research guide, consent form, transcript

release form, and telephone script. The University of Saskatchewan Research Ethics Office approved this research on certificate BEH 15-268.

4. Research Findings

4.1. Finding 1 Indigenous Worldviews Are Based on Spiritual Beliefs, Which Orient Indigenous Knowledges and Responsibilities for Sustaining Life on Earth

This finding indicated the importance of Indigenous spiritual beliefs within Indigenous knowledges that extend beyond communities and institutions. The belief systems learned and practiced by individuals connect them to all aspects of Creation, including accountability to non-corporeal and future generations of living beings. The finding also includes consideration of connection and renewal, intergenerational foundations, and transmission of worldviews. One participant affirmed:

> Sometimes, I get to bear witness to some of these students who, for the first time, go into a sweat lodge ceremony and they come out with this whole totally different renewed perspective on life and how they see themselves as part of it. [6] (p. 75)

A conclusion emerging from this finding is that although there are common principles, Indigenous knowledges are specific to particular cultures and belong to the members of that cultural community. The inclusion of Indigenous knowledges within PSE institutions, therefore, is primarily for the reinforcement of cultural identity [6] (p. 134).

4.2. Finding 2 Sustainability Is Expressed as a Function of Tradition Linking Indigenous Identity with Culture, Language, and Environmental Health

This finding indicated that understanding sustainability from an Indigenous perspective and acting on that understanding is related to the depth of cultural knowledge, linguistic fluency, and continued viability of Earth systems. Indigenous language speakers have the ability to understand concepts related to sustainability in their mother tongue that do not easily translate into English, or other languages. While some individuals may not speak their Indigenous language, they may have extensive understanding and knowledge of cultural teachings. Indigenous cultures and languages are linked to the natural world, reflecting the state of each in relation to the other, and containing the knowledge to live sustainably. One participant in the study explained, "You can hear the bush in the language. You can hear the animals. You could hear the natural world in the language itself. So, when we're talking about sustainable education, environmental education, it's written right within our languages" [6] (pp. 77–78). A conclusion emerging from this finding is that diminished Indigenous relationships with the natural world are detrimental to Indigenous cultures and languages. Consequently, weak knowledge of culture and language can negatively influence one's ability to understand how to live sustainably [6] (pp. 134–135).

4.3. Finding 3 Entrenching Indigenous Knowledges in Curriculum, Research, Facility Operations, Institutional Governance Processes, and Community Outreach Is to Sustain Cultural Identity

This finding indicated that the inclusion of Indigenous knowledges within PSE institutions is primarily for Indigenous learners. Meeting this need requires that others are equipped with some knowledge to be able to create the processes that can support the inclusion of Indigenous knowledges. It also suggests that broader society and other PSE learners become part of the learning process. Indigenous community members must be involved in partnerships with PSE institutions to facilitate the inclusion of Indigenous knowledges and to avoid breaches of traditional protocol. One of the Indigenous participants explained:

> The university has to recognize my way of thinking and my way of conducting research . . . I had to tell him, I think it's the university that has to reconcile that, not me. I'm just following what I've been exposed to all my life. I'm just following our worldview. I think the university has an obligation to recognize that and give it some validity so that we don't have to assimilate into the western methods of doing things. [6] (p. 89)

A conclusion drawn from this finding is that institutional personnel, including leaders of governance processes, faculty, administrators, and others need to understand why Indigenous knowledge should be included in their institutions. Because systems are integrated and comprise part of the holistic framework, relying solely only on Indigenous personnel is insufficient to understand the rationale of including Indigenous knowledge within institutions [6] (p. 136).

4.4. Finding 4 National and International Standards Supporting Indigenous Self-Determination Are Primary Drivers for the Inclusion of Indigenous Knowledges in Post-Secondary Education Institutions and Advance the Underlying Principle of Sustainability

This finding indicated that the application of Indigenous knowledges within PSE institutions must be drawn from local traditional cultural protocols, which are supported by national and international standards and instruments on Indigenous self-determination. The research and advice from the Royal Commission on Aboriginal Peoples, the Truth and Reconciliation Commission of Canada, and the UN Declaration on the Rights of Indigenous Peoples are among some of the many resources that PSE institutions should study and integrate within policy. Other standards and instruments available on Aboriginal and treaty rights, such as the *Constitution Act, 1982,* and Canadian case law, provide critical information about Indigenous peoples and their knowledges. It is through understanding these standards and instruments, as well as the processes that brought them to fruition, that Indigenous worldviews about sustainability might be better understood. One participant was adamant, "I think one of the most important things in this conversation are the principles around UNDRIP, the United Nations Declaration on the Rights of Indigenous Peoples, that really speaks to sustainability from an Indigenous perspective" [6] (p. 92). There were concerns raised in the study about whether PSE institutions would be able to advance these discussions and whether individuals charged with leading were equipped to do so. A conclusion drawn from this finding is that PSE institutional personnel need to improve their understanding of the importance of local traditional protocols as well as national and international standards that support and protect Indigenous self-determination. An additional conclusion is that the use of these standards will lead to a greater understanding of how sustainability is advanced through Indigenous knowledges [6] (pp. 135–136).

4.5. Finding 5 Indigenous Holistic Learning includes Social, Economic, and Environmental Aspects of Sustainability

This finding indicates that the holistic nature of Indigenous knowledges means that it contains the same elements considered to be pillars of sustainability. Learning about social aspects of human life cannot be isolated from economic factors or the state of the environment. Each is important to understanding the other [1]. Learning through an Indigenous worldview facilitates learning about the interconnectedness of the pillars and how they influence each other. One participant explained that Indigenous worldviews are complex and involve understanding interconnectedness in the same way that sustainability is a circular process and a collective issue. They said, "We need to get away from that view of sustainability being the environmentalist" [6] (p. 101). A conclusion drawn from this finding is that the walls within disciplinary learning must fade and allow for more interdisciplinary, transdisciplinary, and intercultural knowledge exchange and mobilization. An analysis of sustainability declarations, statements, and policies might initiate an exciting dialogue that sheds light on the convergences and divergences with Indigenous knowledges. A further conclusion is that PSE institutions already have many of the tools needed for adaptation to new realities of rapidly shifting global demographics, resulting from war, poverty, social inequities, climate change, and other conditions that contribute to environmental degradation. PSE institutions have the ability to re-create themselves and address learning processes that facilitate holistic thinking and professional development [6].

5. Consequences of the Findings

It is important to note the consequences that are inferred from the findings. First, Indigenous perspectives of sustainability are an outcome of holistic cultural worldviews that involve spiritual beliefs. These are interconnected and so considered part of the whole. That is, one cannot talk about sustainability from an Indigenous perspective without acknowledging and including the spiritual elements of knowledge, beliefs, values, and practices. A second consequence that comes from the process of institutional Indigenization, is that these efforts will be impeded if cultural identity is not foundational to decision-making. Without exception, all participants in this research expressed their belief that institutional Indigenization must be primarily focused on strengthening the cultural identity of Indigenous learners. This concept may sometimes become lost in the day-to-day efforts made by Indigenous scholars and allies to increase Indigenization; however, if institutions place the strengthening of Indigenous cultural identity as a foundational goal, other actions can be constructed to support achieving this goal. A third consequence of the findings is that Indigenous knowledges and sustainability could become more congruent in practice if supported by policies appropriate to Indigenous worldviews. Most people recognize that sustainability is critical to life on Earth. Often, people associate the concepts of climate change, species extinction, pollution, and the overuse of plastics as detrimental to our health. But there is sustainability inertia that occurs because knowing these things is incongruent with the way we want to live. Our value systems do not align with acceptance of the fate of the planet and all our relations. Linking knowledge of sustainability challenges with Indigenous worldviews can help provide a way of transforming and aligning our thinking.

6. Discussion

Three categories of consequences that emerged from the research findings enabled exploration of additional meaning of Indigenous sustainability derived from the data.

6.1. Category 1: Indigenous Cultural Identity

With the first research question, I sought to discover philosophical principles concerning the environment and interconnectedness in relation to sustainability in various Indigenous post-secondary education settings. Findings 1 and 2 identified that spiritual beliefs orienting Indigenous knowledge systems form the basis of how sustainability is understood, including in Indigenous education settings. These findings are significant because they reflect an Indigenous ontology concerning sustainability that is expressed through cultures, languages, and identities. That is, through learning Indigenous knowledges, one creates an Indigenous interpretation of sustainability. With a deeper understanding of Indigenous knowledges, gained through culture and language, there can be a deeper understanding of sustainability. The conception of Indigenous cultural identity within the research showed seven underlying principles including:

6.1.1. Spiritual Beliefs

Individuals should be able to develop at their own pace, and cultural camps, land-based courses, and a variety of activities taught by Elders or other cultural knowledge holders can ensure that this happens.

6.1.2. Holistic Thinking

Living and practicing mental, physical, spiritual, and emotional aspects of Indigenous knowledges reinforce and sustain cultures so they can be passed on intergenerationally.

6.1.3. Language

Since immersion is recognized as the best method to successfully acquire language [22], land-based language programming would seem to be pedagogically critical since it links land, language, and cultural knowledge.

6.1.4. Sustainability

Sustainability is a principle of Indigenous knowledges embedded in the philosophies, languages, and practices of Indigenous traditions; it is part of culture. Beckford, Jacobs, Williams, and Nahdee [23] believe as individuals' understanding of Indigenous knowledges develops, they will be better equipped to access the deep transformative thinking sought in sustainability.

6.1.5. Learning from Nature

The interconnectedness of Indigenous knowledges, land, and language is more effectively communicated by teachers and internalized by learners through the sensory experiences of being in nature than by learning passively in classrooms.

6.1.6. Respect and Responsibility

Shifting thought processes from personal gain to collective responsibility is a crucial part of Indigenous knowledge acquisition and leads to transformation in thinking and action.

6.1.7. Willing Participation

The introduction of Indigenous knowledges within formal education brings about a conundrum of how to move beyond education as "the handmaiden of assimilation" [24] (p. 139) and expose learners to Indigenous knowledges and history, including spiritual belief systems, while not forcing it on them [6] (pp. 107–113).

6.2. Category 2: Integrating Indigenous Knowledges for Sustainability

The second research question sought to discover how curriculum, research, facility operations, institutional governance processes, and community outreach are linked to sustainability through practice and policy. Curriculum, research, facility operations, governance, and community outreach were shown to be areas where Indigenization and sustainability were unevenly implemented or even understood as potentially complementary. Finding 3 indicates that in each of these areas, integrating Indigenous knowledges for sustainability should be carried out in support of Indigenous cultural identity. This finding is significant because participants interpreted sustainability as part of the Indigenous knowledge and identity of cultural communities, showing a direct relationship between sustainability and Indigenization within PSE institutions.

6.2.1. Curriculum

Social, economic, and environmental elements of sustainability mean making curriculum relevant through links to contemporary realities as part of the culture and suggesting the need to integrate content on political, social, and historical realities of Indigenous peoples. Grindsted and Holm [25] identified several sustainability declarations and statements available for use by higher education institutions around the world. An analysis in relation to Indigenous content is needed.

6.2.2. Research

Participants maintained that Indigenous rights mean that Indigenous communities should be full partners in creating and conducting research that involves them, their territories, or their knowledges. Indigenous communities want to develop and lead their own research on issues of importance to them. Jonas, Makagon, and Roe [26] identified at least 25 international instruments connecting Indigenous rights with conservation standards.

6.2.3. Facility Operations

Participants talked about the importance of creating or accessing spaces where Indigenous knowledges could be conveyed in an appropriate setting. Institutional adaptations might include access to land-based programming, cultural camps, and other spaces appro-

priate to the transmission of Indigenous knowledges that can accommodate place-based education [4,27].

6.2.4. Governance

Participants strongly maintained that leaders in charge of institutional governance, policies, and budgets are key to determining the extent of Indigenous knowledges within PSE institutions. They felt that even if Indigenous considerations have a place of importance in policy, support for Indigenous programming is often insufficient or financially insecure. Participants indicated that they had never been approached about discussing Indigenous knowledges and sustainability simultaneously, which might suggest that institutional leadership would benefit from new discourse on these matters [28,29].

6.2.5. Community Outreach

To develop these relationships, institutional leaders, educators, researchers, and even those within some Indigenous communities, need the capacity to increase their understanding of the value of Indigenous knowledges. As one participant made clear, not everyone in PSE is enthusiastic about taking part in Indigenous programming. Those with a different worldview may perceive Indigenous knowledges as a threat to their differing beliefs and value systems. Lingering indoctrination of colonial ideology's superiority affects both Indigenous and non-Indigenous people in society. Relationships can be built, even with those who have differing worldviews, if individuals participate in collaborative initiatives [6] (pp. 113–122).

6.3. Category 3: Expanding Sustainability Practices and Policies

The third research question sought to discover how sustainability is practiced and what policies drive these practices. The question allowed for discussion of PSE conceptions of sustainability as well as Indigenous conceptions of sustainability. Findings 4 and 5 indicate that social, economic, and environmental dimensions of sustainability are practiced through Indigenous knowledges and driven by the right of Indigenous self-determination supported by national and international standards. The findings also indicated that Indigenous PSE engagement in conservation and environmental decision-making could be increased if those programs participated in a network to build their capacity on sustainability issues. These findings are significant because non-Indigenous sustainability processes could become more congruent with Indigenous knowledges, and perhaps more successful, if they also supported policies appropriate to Indigenous worldviews. The category brought forward the concepts of sustainability and Indigenous knowledges, conservation, environmental decision-making, and networking.

6.3.1. Sustainability and Indigenous Knowledges

Participants in the research were unanimous that since the goal of cultural communities is to support Indigenous learners' cultural identity, Indigenous communities need to be involved with PSE institutions working to integrate Indigenous knowledges. Reliance on local Indigenous knowledge holders was seen by participants to be essential in ensuring integrity in teaching local traditions. Although sustainability planning may not be recorded in writing, Indigenous communities are aware of environmental changes within their traditional territories and act when needed. Decisions made by Indigenous communities about sustainability are based on a confluence of factors that might include a variety of social, economic, and environmental considerations.

6.3.2. Conservation and Environmental Decision-Making

Participants expressed strong views about the need to sustain a healthy natural environment since it is foundational to understanding Indigenous peoples' worldviews. Generally, projects that do not evolve from the local level are less successful, or fail, because they do not consider the spectrum of Indigenous knowledges that are based on intergener-

ational knowledge within a particular region [30]. Some participants in this study also said that top-down approaches imposed on people do not work. People have to be part of the decision-making processes.

6.3.3. Sustainability Networking

Academics have pointed out the absence of literature on Indigenous worldviews and sustainability in environmental education and the need for its integration [31–33]. One way to remedy this problem is to create more links among Indigenous academics and institutions. Research participants maintained that the formation of a national network would be very useful for PSE programs, enabling institutions to collaborate and take up issues of sustainability as they relate to Indigenous knowledges in PSE.

My discussion of the findings revealed and affirmed that Indigenous knowledges are culture-specific, belonging to those cultures from which it emerged and whose primary use is for reinforcement of cultural identity. Examining the real-world benefits of adopting Indigenous traditional cultural and linguistic practices that "reflected sustainability and harmonious interactions with the natural world" [34] (p. 67) goes beyond the study of environmental crises to rediscover and integrate new ways of human behaviour necessary in this millennium.

Based on the research conclusions, there are implications for PSE institutions addressing Indigenous knowledges and sustainability. For example, PSE institutions need to have programs and financial supports that facilitate traditional knowledge holders' participation in appropriate locations on and off campuses. As well, PSE institutions should develop and offer Indigenous programs that combine traditional cultural knowledges, Indigenous languages, and environmental education for campus communities, professional development, and Indigenous communities. Additionally, PSE institutions should retain Indigenous personnel to collaborate on the development of holistic frameworks appropriate to their region. In addition, PSE institutions should develop a series of training modules for professional and Indigenous community development, with information on national and international standards supporting Indigenous self-determination. Finally, PSE institutions should provide resources that support the development of a national PSE Indigenous sustainability network [6].

There are some other areas that would benefit from additional research, such as exploring local, regional, and global relationships between Indigenous knowledges and sustainability. There is a need to look at how PSE sustainability researchers and program administrators currently include Indigenous knowledges in their work. Research is needed on how an increased Indigenous presence within formal sustainability organizations and events might support dialogue and collaboration. We need a greater understanding of the generational benefits of Indigenous PSE programming. Finally, there is room for research on the integration of existing and new indicators of Indigenous knowledges and sustainability [6].

7. Conclusions

This research began as an exploration of the relationship between sustainability and Indigenous knowledges in various post-secondary education institutions across Canada, but it revealed much larger issues of cultural identity, Indigenous rights, and the struggles of those working to advance a paradigm shift within PSE institutions. At the outset of this article, I wondered if it is possible to slow or reverse our nature of being unsustainable. I believe that it is inevitable that we will change. I wondered if Indigenous peoples in Canada have greater insight because of their philosophical worldviews about sustainable development. I believe that they do, as evidenced by foundational cultural beliefs. These cultural systems must be protected and nurtured for future generations. Finally, I wondered how the Western concept of sustainability might be decolonized and better understood from an Indigenous perspective. This requires individuals who are working on sustainability issues in PSE institutions to begin a dialogue and collaborate on sharing leadership with

Indigenous people [6] (pp. 133–134). There must also be room for dissenting voices within the academy that reflect divergent views within Indigenous communities. Those facilitating discussions and exploration of decolonization and the construction of new knowledge systems must ensure that no one is marginalized and kept out of participating in shaping the social, economic, and environmental decision-making systems of sustainable development.

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A Food Sovereignty Approach to Localization in International Solidarity

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Abstract: Renewed calls for localization and the "decolonization of aid" are raising questions about whose knowledge and control are privileged. This article argues that in order to support local decision-making on food systems and agricultural aid, international solidarity work should look towards food sovereignty and agroecology approaches. Food sovereignty and agroecology, informed by feminist approaches, can provide important lessons for localization as they prioritize local knowledge and decision-making, and are based on social justice principles. They also provide alternatives to the problematic concept of "development", particularly the agro-industrial development model which contributes to environmental and health crises, corporate concentration, colonialism and inequality. An example of the trajectory of the NGO SeedChange is provided to help illustrate how food sovereignty can: (1) provide an alternative to problematic development concepts, and (2) encourage localization and greater priority to global South perspectives. While acknowledging that there exist contradictions and challenges to shared decision-making, learning from partners in the global South working for seed and food sovereignty has been crucial to shaping the organization's programs and policy advocacy.

Keywords: localization; NGOs; food sovereignty; agroecology; development

1. Introduction

The colonial and neo-colonial aspects of development projects have been described by critics for many decades. In the post-World War II period, large development agencies pushed a model that was based on advancement in stages from "underdeveloped" to "developed" as exemplified by Northern industrial economies [1]. The legacy of colonialism in creating inequality and extractivist economic relationships was not acknowledged in this formulation, and poverty was portrayed as apolitical [1]. Many of the same neo-colonial relationships continued or intensified in the name of development [2] [1]. Today, wealth and resources continue to flow out of Indigenous and global South communities and countries in the global South. From 2000 to 2017, net transfers of financial resources from "developing" to "developed" countries grew and exceeded overseas development assistance (ODA) flows [3]. As one critic observed, this is "aid in reverse" [4].

The idea of development grew to be powerful as an economic prescription as well as creating "perceptions, myths and fantasies" [5] (p. 1). According to Escobar [6] (p. 9), as a discourse, development "created an extremely efficient apparatus for producing knowledge about, and the exercise of power over, the Third World," reproduced and promoted by development professionals and institutions. Despite many alternative definitions and transformations of the concept, including sustainable development, the dominant discourse of development continues to focus on economic growth [6]. This primacy of economic growth has often been used to promote trade liberalization, privatization and productivist approaches in agriculture (see for example [7]).

In recent years, many NGO observers and workers have explicitly called for the "decolonization" of aid and development (see for examples [8–11]). Decolonization in aid and development integrates critiques of colonialism and white supremacy, and strongly advocates for addressing systemic and structural racism [11]. It raises questions about the "white gaze"—how the priorities and lens of white people tend to dominate, including how stereotypical images are used to advance charity fundraising [11]. Across all these discussions is the importance of local control. At a first level, this involves "localization", which is a move away from external decision-making and towards local ownership, leadership and expertise [12]. As noted by Cooperation Canada, "Overall, localization, in its full meaning, entails fundamental transformation of international cooperation mechanisms" ([12], see also [13]). Collaborative and flexible processes for funding and agenda-setting are part of the solution [12].

Localization may be especially important in the cases of NGOs with headquarters in the global North and country offices abroad. However, there are often inequalities even when the partners are local organizations. There are inherent power dynamics related to the role of NGOs from the global North as funders. For example, the Canada Revenue Agency obliges Canadian registered charities to maintain ongoing "direction and control" when working through an "intermediary" non-profit organization in another country [2]. Development terminology can also overshadow and suppress local and Indigenous concepts. A survey of NGOs in the global South showed that most (65%) confirmed their collaboration with international NGOs is based on principles of equality, but that the practices and programs do not sufficiently consider local realities, and projects relied heavily on "western defined systems and models", resulting in several negative impacts [14]. Unfortunately, organizations receiving funding may not feel sufficient trust to question reporting requirements with their funder partners. Reporting requirements that are heavy and inflexible, with overemphasis on donor monitoring frameworks, can result in local partners dedicating more time to administration and less to working in communities and doing policy work. The concept of "NGOization" indicates that such bureaucratization can redirect attention and space away from social movement organizing [15].

A further level of critique thus concerns the role of NGOs themselves. NGOs include a wide range of organizations and methods of work, from pressing political demands linked to social movements to carrying out more reformist work as part of rural development projects for example [15]. In many cases, NGOs play a bridging role between aid agencies and communities or grassroots organizations but are primarily accountable to overseas funders' criteria and interests [16] (p. 132). In part, the increase in the number of NGOs also resulted from the withdrawal of the state from providing services [15] (p. 7). Associated with this trend has been a discourse surrounding NGOs in which they are viewed in terms of partnerships and civil society, while not all have clear constituencies to which they are accountable.

Discussion of decolonization of aid and development raises deep questions. The discourse on the decolonization of aid has been critiqued by some as not led by actors in the global South [17]. Use of the concept of decolonization as a metaphor, rather than its literal meaning for Indigenous sovereignty today (primarily regarding land), has also been pointed out as being problematic [18]. For NGOs, these discussions can be fraught with the contradictions arising from acting within colonial power structures. Without a connection to social movements, the debates risk low legitimacy. Several advocates argue that decolonizing development includes taking a more political, solidarity approach, such as activism directed towards harmful foreign policies and extractivist industries [8]. It may also require abandoning the problematic concept of development altogether in favor of alternatives such as degrowth, centralizing Indigenous knowledge systems and a focus on the re-distribution of power and decision-making between global North and South divisions. Food sovereignty and agroecology are also such alternatives, we argue in this paper. Food sovereignty is the rights of peoples to "define their own food and agriculture systems" [19]. Agroecology, as a central aspect of food sovereignty, originated in agrarian

movements and has a strong focus on the knowledge and experiences of Indigenous and smallholder farmers [20].

This paper discusses an example of an evolution in approaches for the NGO Seed-Change, previously USC Canada (weseedchange.org), that demonstrated various engagements with development and its alternatives. SeedChange began as a humanitarian organization in 1945, later focused on community development projects and then adopted a food sovereignty framework in recent decades. Decisions about agricultural programming were strongly influenced by South-South and North-South exchanges with partner organizations beginning in the late 1980s in particular. Today, rather than aid and development, SeedChange uses food sovereignty and agroecology with an increasingly feminist focus, to guide its work and relationships. In addition to providing an alternative framework to development, food sovereignty and agroecology provide important lessons for sharing power as they are strongly rooted in participatory methods and social justice principles. Further, feminist approaches in agroecology call for participatory, gender-based analysis for actions to address intersectional forms of inequality in agriculture and food systems [21].

This paper aims to contribute to discussions on localization and how NGOs can help address power imbalances in decision-making in international programs on agriculture. Recently, SeedChange engaged in internal learning about localization, decolonization and feminist approaches to international partnerships. While these discussions and learning are ongoing, outcomes include a commitment to improve shared decision-making and incorporate feminist frameworks. While not immune to the problems discussed above, due to SeedChange's role as an NGO and a funder organization located in the global North, use of food sovereignty and agroecology frameworks has helped to center farmer-led approaches and collaborative decision-making. SeedChange is also prioritizing learning from women's rights organizations and incorporating feminist methods.

2. Methods

The authors of this article are employed by SeedChange and hope that this paper will support critical reflections and contribute to improved partnership approaches at the organization, and perhaps contribute to broader discussions and practices. The case study in this paper is based on a review of internal and external documents produced by Seed-Change, and a consultation process for this article within SeedChange in February 2022. The internal documents included SeedChange's Strategic Plan 2020–2025 (2019), Theory of Change (2020), Policy Statement (2019), and the International Partnership Principles and Background Paper (2021). External resources reviewed include SeedChange's website, publications and public service announcements. Finally, small consultative workshops on this article with some staff working on international programs and in the senior management team were organized by the lead author in early 2022 with the participation of six persons at SeedChange [3]. These workshops each included a presentation of the key points of this article on SeedChange's approach to food sovereignty and agroecology and international partnerships, with a participatory discussion to provide feedback and general observations.

The International Partnership Principles was a key document in this process. In early 2021, SeedChange's international programs team carried out a set of internal participatory workshops to document and improve the organization's approaches to work with international partners. This was accompanied by a review of the internal documents and a literature review of both academic and non-academic writings on the "decolonization of aid" and feminist approaches to international solidarity. Informed by the literature consulted, reflections from the workshops, and previous informal discussions within the organization and with partners, staff leading this approach wrote a draft background paper. Validation workshops were then carried out on the background paper and a draft set of "partnership principles" were developed by SeedChange's international programs team. This process also drew upon discussions and readings on decolonization and localization shared by the Canadian Food Security Policy Group (FSPG), a network of NGOs working on food security internationally [4].

A framework that was useful early in the process is provided by Fowler (2000), who argues that we can think of relationships between NGOs as "differentiated by the 'breadth' of organisational engagement negotiated", ranging in order of decreasing mutual engagement from: partner (which involves co-management aspects), to institutional supporter, program supporter, project funder, and ally [22]. All of these are valid and appropriate in different contexts. On the other hand, the sharing of power within those relationships can be thought of in terms of "depth", beginning with information exchange at the most "shallow" end, to consultation, shared influence, and finally joint control [22]. Power dynamics related to funding and the "gatekeeper" role of larger or northern NGOs (who have greater access to northern agency funding), include greater control and agenda setting by these [23]. Fowler recommends that while taking into account cultural differences, it can be helpful to openly discuss the type of relationship that exists in a partnership, noting that "Agreeing on relative influence within a relationship is one way of addressing, if not redressing, power differences" [22] (p. 6). These two concepts–the breadth and depth of shared power–was a key starting point for the internal workshops on partnership aspirations.

Feminist approaches also provided important guidance on methodology. SeedChange has long integrated gender equality and women's empowerment aspects in programs, but only in recent years has taken a stronger approach to integrate an explicitly feminist framework (e.g., feminist agroecology), as explained further below. Feminist approaches to international solidarity include adopting more horizontal and participatory approaches, self-reflexivity and deep listening [24]. These aspects were integrated into the reflection workshops and throughout the drafting of the partnership principles and remain central to efforts to focus on mutual learning and collaborative creation of knowledge in current and future work according to SeedChange international programs' staff.

A key limitation of the development of the draft partnership principles document was that it is unfinished. While the document is meant to orient SeedChange, it also indicates a need for transparency on power dynamics and discussion of these issues with international partners. While the ideas were briefly presented in an online workshop in October 2021 with partners from East Africa, due to COVID-19 travel restrictions at the time, the virtual nature of the meeting limited discussion of sensitive subjects. This limitation affects this article as well, as it does not reflect consultation with partners. It is hoped by the authors and staff consulted that in the coming months and years, opportunities for genuine in-person discussions on these issues can be realized.

3. Results and Discussion

The discussion below provides an analysis, based on the literature review, of key problems created by the agro-industrial development model in terms of colonialism, neo-colonialism and the top-down imposition of technologies. It then provides an overview of counter-solutions offered by food sovereignty and agroecology approaches. This review is useful to indicate why food sovereignty and agroecology encourage local decision-making and thus also localization. It is followed by a description of the trajectory at SeedChange and adoption of the food sovereignty and agroecology approaches based on influence by its partners and other organizations in the global South, as well as how these frameworks also strengthened localization actions and learning within the organization. Final observations on internal reflections are discussed, offering potential next steps for the organization and for broader debates on localization.

3.1. Neo-Colonialism in Agriculture

Indigenous and smallholder farmers around the world are crucial food providers and their food systems have been essential to create and maintain biological diversity [25]. Farms that rely mostly on family labor are the majority of farms and produce more than 80% of the world's food [26]. Crop diversity has been stewarded through farmer's ongoing selection and breeding of varieties, as well by conserving a relationship with the wild relatives of domesticated crops [27]. Biodiversity in farming is valuable because it reduces

risks of crop failure and because varieties have different desired qualities that respond to culinary, ecological and storage needs [28]. By planting locally adapted varieties that farmers select and harvest themselves, households reduce the cost of agricultural inputs and grow a variety of foods which improve family nutrition as well as maintain crop diversity. Farmers' seed systems continue to provide for the majority of smallholder seed requirements in the global South ([29,30] (p. 50)).

Despite several international conventions and treaties that value and recognize these contributions and enshrine farmers' rights, smallholder farmers around the world continue to face economic and political hardship [5]. Indigenous farming communities in Latin America, for example, were already forced on marginal lands through colonialism and continued dispossession of prime lands by elite landholders and corporations. These processes continue today as Indigenous territorial defenders face high rates of threats and murder [31]. Due to trade liberalization, the dumping of lower-priced agricultural products depresses prices at the local markets that smallholders primarily sell to [32,33]. Cuts to public rural extension programs decreased support to farmers [34] (pp. 5–6) [6]. Climate change is now significantly exacerbating hardship and instability. For example, in Central America, crop failures due to climate change and the lack of livelihood opportunities are among key factors motivating emigration [36].

Another push factor has been the industrialization of agriculture. Beginning in the 1960s, under the "Green Revolution", international research centers and governments promoted farmer access to hybrid seeds and their chemical inputs, along with monocropping and specialization, in order to increase production. Many local varieties were displaced by these external seeds [27]. Smallholders in many regions of Latin America, facing competition from industrial agriculture and unable to pay for the new technologies, were forced to leave the countryside [37]. Land concentration and monocrops often came to replace once biologically and culturally diverse lands. In recent decades, seed laws in many countries have placed restrictions on farmers' use of seeds developed by companies, which limits their ability to save, select, exchange and sell seeds as needed [38]. Rising use of chemical inputs have led to land degradation, water contamination, and pesticide resistance [39] (p. 18–20). Destructive agricultural practices and their colonial expansion have also impacted the diverse traditional harvesting systems of Indigenous communities [40,41].

The Green Revolution was characterized by a "technology transfer" approach which mainly advantaged large-scale operations, in part because the experiment settings of research stations have generally not been attuned to the conditions of smallholder farms [42,43]. Such technology transfer or "blueprint" models are harmful since they simplify what are complex and adaptive systems [43] (p. 240). According to Altieri, "agricultural diversity results from local variations in climate, soils, economic relations, social structures and cultural history, making it very difficult for developers to claim that there is only one unique agricultural development strategy able to deal with such complexity" [42] (p. 113).

Today, the technology transfer approach based on industrial inputs, including seeds, is strongly influenced by collaboration between influential philanthropy and private sector collaborations, which also fund and influence intergovernmental agencies and NGOs. For example, the Alliance for a Green Revolution in Africa (AGRA) is an initiative founded in 2006 with support from the Bill and Melinda Gates Foundation. Many farmers' and civil society organizations in Africa have critiqued AGRA for going against food sovereignty by working to influence national agricultural policies and promote dependence on external inputs, including introduced and transgenic seeds along with the high level of agrochemical inputs they require (e.g., [44,45]; see also [46]). The organization GRAIN has documented that the majority of the funding from AGRA has gone to organizations and research centers in the global North (including NGOs), and there is little evidence of support to farmer-led research [47].

AGRA promotes "agro-dealer networks" linked to chemical and seed companies [48]. In many cases, the promotion of agrochemical and seed inputs has been supported with public programs from African governments [45]. A related initiative with reach in several

continents, Gates Ag One, continues in this path, stating they will work with public- and private-sector partners and governments, "to enable the advancement of resilient, yield-enhancing seeds and traits globally and facilitate the introduction of those breakthroughs into specific crops essential to smallholder farmers." Navdanya International has called these efforts the "recolonisation of agriculture", as public agricultural research centers and programs are increasingly directed by private sector interests and farmer dependency is being promoted [49].

3.2. Food Sovereignty and Agroecology

Agroecology in its present form is often described as a science, practice and movement of sustainable agriculture [50] [7]. Agroecology is increasingly considered the best approach for food system resilience by leading agricultural experts (see [51–53]). Rather than promote dependence on external and often toxic synthetic agrochemicals, agroecology is ideally about strengthening smallholder's own local resources and valuing their knowledge. Central to agroecology is the importance of farmer's own decision-making. As noted in a recent publication about funding for agroecology: "Agroecology, in its transformative form, is deeply attuned and emergent from particular people in particular places (territories) with their languages, cosmovisions and lifeworlds. Agroecology is fundamentally about respecting and enabling this and programmes and development must not force peoples into cookie-cutter approaches driven by the Global North" [54] (p. 11).

Agroecological methods are diverse, but a central principle is to promote crop diversity and the recycling of nutrients in agroecosystems for long-term sustainability [55]. Conservation of soils and water is done through time-tested and locally adapted techniques such as live barriers, composting, and terracing. Many practices have multiple purposes, such as agroforestry where diverse perennial plants produce products for food and income, generate organic matter, maintain moisture in the soil, moderate temperatures, cycle nutrients in the soil, provide shade for animals, and reduce erosion from water and wind [56] (p. 244–248). As part of agroecology, promotion of agrobiodiversity provides numerous benefits for food security, income diversification, and farm management (e.g., intercropping to reduce pest infestations) [56].

A growing number of research and community experiences indicate that agroecology can be a pathway for women's empowerment–essential for more just and sustainable food systems–and that more feminist agroecology is needed [57–60]. Agriculture is an important source of livelihood for women and, in some regions, it is women who provide most of the agricultural labor [61]. Women are often responsible for small livestock as well as the management of diverse, critical crops for household food security [61]. Yet, rural women face many barriers and inequalities, including constraints to social and political participation, infringements on rights, sexual- and gender-based violence, lower wages and higher care responsibilities [62]. Women farmers around the world have far less access to agricultural resources and services than their male counterparts and are disproportionately affected by the climatic and economic pressures facing smallholders [61,62]. For these reasons–and to benefit from women's knowledge and approaches–women should be prioritized in agricultural programs, particularly for agroecology [57].

Agroecology is also closely associated with the concept of food sovereignty. La Vía Campesina developed the latter concept in 1996 to counteract trade dumping and propose an alternative treatment to food and agriculture in opposition to the World Trade Organization. Women were key definers of food sovereignty, particularly for its holistic and ecological approach [63]. Food sovereignty is most often defined as: "the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems" [19].

Food sovereignty gained in popularity among diverse social movements. The International Forum for Food Sovereignty in Nyéléni (Mali, 2007) brought together organizations from around the world, for example. They identified six "pillars" of food sovereignty: Focuses on food for people, Builds knowledge and skills, Works with nature, Values food

providers, Localizes food systems, and Puts control locally. "Food is sacred" was added as a seventh pillar by members of the Indigenous Circle of the People's Food Policy process organized by Food Secure Canada in 2008–2011 [64]. According to the Nyéléni gathering, a system based on food sovereignty would ideally prioritize local food production and consumption, produced through ecological methods, and institute genuine agrarian reform that also "defends and recovers the territories of indigenous peoples" [19]. Dawn Morrisson notes "The food sovereignty approach provides a restorative framework for identifying ways that social and political advocates from the settler communities can work to support Indigenous food sovereignty in a bottom-up approach to influencing policy, driven by traditional practice and adaptive management" [40] (p. 104). Indigenous food systems and food sovereignty are essential to community health and well-being, cultural identity and self-determination [41].

3.3. A Case Study from SeedChange

SeedChange is an NGO founded in Canada in 1945 by Dr. Lotta Hitschmanova as the Unitarian Service Committee of Canada (USC Canada). SeedChange relies on funding from the Government of Canada, foundations and public donations. It is a medium-sized NGO, with an office in Ottawa and remote-based staff in several provinces, totaling 30 staff. The board includes directors with experience in organizational governance and food sovereignty, with Indigenous and international directors playing crucial roles [8]. SeedChange's role was recently publicly clarified and defined as supporting local organizations as trainers and facilitators for sharing knowledge, as fundraisers and funders for partners' work, and in supporting policy advocacy [65].

SeedChange works with local organizations in mostly medium- to long-term partnerships both domestically and internationally with 14 partners in 10 countries. Due to the focus on seeds, programs are primarily located in the centers of crop origin and/or diversity in Mesoamerica, the Andes, West Africa, East Africa and Asia. International partners have been small- to medium-sized local NGOs and institutes, and smallholder and Indigenous cooperative associations. Their work overall focuses on the use of participatory and farmer-led methods to promote seed security, agroecology, agrobiodiversity, collective marketing, farmers' rights and gender equality. Collaborations for technical assistance on seeds is an important aspect.

SeedChange was initially created for post-conflict humanitarian assistance. Canadians were encouraged to donate and provide in-kind and material support, with appeals based on "human dignity". It was a policy of the organization to not send Canadian staff or volunteers abroad, although SeedChange had local offices in some countries. In the 1960s and 1970s, the organization became more centered on an international development focus. During that period, the humanitarian focus was still prominent, including in food aid programs [9]. In the 1980s there was a focus on community "self-help" projects, including in agriculture such as irrigation, reforestation and home gardens [10]. A pivotal moment came in the late 1980s, when SeedChange began work on seed security with the Ethiopian Institute of Biodiversity Conservation as part of efforts to support famine recovery. This raised awareness of the importance of seed diversity for food security and led to the creation of a major program called Seeds of Survival (SoS) to strengthen farmers' seed systems and agrobiodiversity in several countries in Africa, Asia and Latin America [66]. South-South and South-North knowledge exchanges and international training workshops were key to sharing methodologies [66]. It was generally acknowledged that SoS approaches were directed by partners in the global South. SoS methods included strengthening access to diverse, local seeds through conservation on farms and in community seed banks, participatory plant breeding and varietal selection, and policy advocacy for farmers' rights to seeds.

Participatory plant breeding and varietal selection are based on collaborative processes between farmers and agronomists. These methods can include the selection of local varieties to maintain and strengthen them, or the crossing of local and external varieties

to improve certain characteristics. Trials happen in local fields, and it is the community criteria (including criteria that may vary by gender) that matter the most in the selection process. These may include growing characteristics (e.g., length of cycle), yield, color, marketability, storability, cooking time, taste and others [29]. In Honduras, for example, participatory plant breeding with maize and beans has resulted in locally adapted, quality seeds in farmers' hands that have made a crucial difference in local food security [67]. This work is also linked to policy advocacy to defend community rights to freely save, exchange and sell their seeds [29]. It presents an alternative to top-down agricultural development. SeedChange and partners in at least six countries have also contributed to policy initiatives to improve national seed laws. This work for seed sovereignty–an essential aspect of food sovereignty–is a form of resistance to the expansion of the industrial agricultural model.

Inspired by the approach and results of the SoS program, it increasingly became the priority of the organization. Programs for sustainable agriculture, agrobiodiversity and farmers' seed systems became the sole focus by 2007. During these years, SeedChange also turned increasingly toward alternatives such as food sovereignty and agroecology, and away from concepts of development. Learning from partners and from international movements such as La Via Campesina led to the growing realization of common alignment with food sovereignty principles and critique of neoliberal agro-industrial models. This has meant integrating a greater focus on the root causes of problems. For example, rather than presenting hunger as being due to a lack of productivity, a food sovereignty approach has encouraged the organization to recognize "hunger as a problem of food governance, unequal distribution and injustice" [11]. SeedChange staff had also engaged in research that led them to question mainstream development, including the publication of a book on problematic agricultural aid in Bolivia by the SeedChange executive director in 2014 [68]. Beginning in 2007, remaining local offices were phased out in a gradual process. In some cases, this resulted in the creation of new local organizations or a merger with local organizations. This "localization" strategy was deliberate and was fully achieved by 2020. The importance of working in partnership with local civil society organizations is emphasized in SeedChange communications [12].

SeedChange's work in Canada was also influenced by SoS and food sovereignty. In 2013, SeedChange created a domestic program for participatory plant breeding, learning from the importance of this approach from partners in the global South [13]. SeedChange was contacted by an Indigenous community group in Northern Manitoba for collaboration, which led to internal learning at SeedChange [14]. SeedChange has also been a key actor in the creation of Farmers for Climate Solutions, an initiative to reduce emissions and improve climate resilience [15]. Other advocacy over the last two decades has included coalition work to influence national and foreign policies on agriculture and trade, such as in civil society campaigns to counter the promotion of transgenic technologies in Canada and by the Canadian government abroad [16]. SeedChange included the establishment of an organizational approach for actions to support decolonization as a goal in their strategic plan. Some resulting actions included initial efforts to build relationships with Indigenous-led seed keepers within the borders of Canada. SeedChange is undertaking anti-racism and anti-oppression training to inform its policies (see [71]).

In terms of international partnership relationships, SeedChange is in the process of building mechanisms to improve decision-making. While SeedChange has engaged in a spectrum of relationships with different partners, directly discussing the issue of power dynamics has been rare. Internally, as indicated in the draft international partnership document, SeedChange has been identifying some guiding principles and tools. One of the conclusions, as outlined in its accompanying background paper, is the hope that integrating processes to clarify expectations in a partnership (through the discussion of aspirations for shared decision-making, for example), can be a way to help mitigate the depth and breadth of power differences, as Fowler encourages. The draft principles include a commitment to support struggles against inequality and for just and sustainable food systems, support community organizing and participatory decision-making, employ feminist methodolo-

gies, promote food sovereignty and agroecology, support the sharing and co-creation of knowledge, and promote transparent communication and mutual accountability.

Some of the main challenges identified arise from how to reach a balance to meet the reporting requirements of funding bodies while ensuring that these do not dominate partnership relationships, impose Western/colonial concepts, and negatively affect work on the ground (e.g., by taking time and energy away from supporting community actions and engaging with movement building). As noted in the document, this requires listening, questioning assumptions, and a responsibility to raise awareness and dialogue with funders and other actors working in international solidarity. These draft principles were shared with some partners in an initial online discussion in October 2021. At the time of writing this article, the organization has not yet outlined a strategy for how to facilitate a broader discussion with partners, but it was identified as a necessary next step.

A related area of learning has been on feminist approaches. SeedChange has taken an intersectional feminist approach in recent years and today includes partnerships with women's rights organizations, supported through the Feminist International Assistance Policy of the Government of Canada (FIAP). Working with a feminist lens includes acknowledging and helping to redress power asymmetries through a solidarity approach and valuing more egalitarian processes [24,72]. SeedChange has thus articulated a feminist agroecology approach that emphasizes women's leadership and organizing, decision-making and access to productive resources, and addressing inequality by working with both women and men [73]. As noted in SeedChange's unpublished background paper on international partnerships, there is interest in being "guided by feminist approaches that centre the people most vulnerable to the negative impacts of patriarchal systems [...] and recognize how patriarchy intersects and exacerbates other types of inequality and oppression—hence also the reason to understand local, anti-racist and anti-colonial feminist struggles" as well as visibilizing the distinct struggles and contributions of 2SLGBTQQIAP+ people [74].

As part of SeedChange's feminist approach, a recently launched project called Rural Women Cultivating Change (RWCC) supported by Global Affairs Canada, engages with seven partners in three East African countries to implement three main objectives: strengthen women's leadership roles in local, regional and national contexts; support the prevention and mitigation of sexual- and gender-based violence; and contribute to women's access to productive resources and agroecological production and marketing. Local partners consist of women's rights organizations and agroecology organizations based in Kenya, Tanzania and Ethiopia. Project design, planning and implementation of RWCC follows a collaborative approach where partners co-lead the activities. To ensure ongoing collaboration, the program was set up with a "gender equality and inclusion working group" that includes key staff from each partner organization. Collectively, they work to guide the overarching priorities of addressing gender equality through a transformative process, where both the structural and individual barriers and opportunities are identified and addressed throughout the project. Collaborative project implementation also aims to provide spaces for peer-to-peer learning between women's rights and food sovereignty groups in each country and to establish long-term foundational networking for feminist agroecology practice. For example, partner representatives in the working group discuss their own organizational limitations and opportunities while also learning from other partners' experience. The working group continues to identify learning opportunities while also addressing gaps in policy, staffing, and financial opportunities.

Staff consulted for this paper confirmed that recent reflections and learning on partnerships and localization have been meaningful, but also brought up several observations on the limitations, tensions and gaps. These include: (1) Time-sensitive administrative needs to meet funder requirements often shape interactions and take precedence over more respectful processes and shared decision-making; (2) Contradictory aspects exist in our work at all levels as an NGO, and there is often insufficient time or priority given to attempt to address these contradictions; (3) Sharing power is our responsibility and actions are more

important than words; and (4) We must ensure meaningful ways to genuinely discuss these issues with partners. They also reaffirmed that food sovereignty and agroecology provide important guiding principles to share power and prioritize community-led approaches. There is a high level of interest in learning from the new collaboration with women's rights organizations, to co-create feminist methodologies and learn how feminist approaches can help strengthen actions both in work on the ground and in partnership relationships.

4. Conclusions

This paper has looked at how calls for the localization and decolonization of aid and development are encouraging deeper listening to feminist, Indigenous, anti-racism and global South perspectives and social movements. A commitment to localization requires identifying and working to address inequality in partnership relationships between global North and South organizations. As noted in the discussions among NGOs and studies on localization and decolonizing aid, there is a need for NGOs in the global North to deeply listen to partners and allies, critically question assumptions, and share control over resources and decision-making processes. This would help to strengthen dialogue and equitable processes for the collaborative creation of programs and joint policy advocacy guided by local knowledge and priorities.

Applying the lens of localization to food systems indicates the critical need for food sovereignty approaches. It is crucial to shine light on how the dominant agricultural development model is leading to increased inequality and environmental and health crises, and how these disproportionately affect marginalized communities. Technology transfer approaches have proven problematic for agrobiodiverse Indigenous and smallholder systems around the world. In contrast, agroecology requires community-led methods. Working with food sovereignty and agroecology principles can thus strengthen the processes and outcomes of international solidarity work and programs for sustainable agriculture and food systems.

In the case of SeedChange's international work, learning from partners in the Seeds of Survival program, led to changes which eventually resulted in the adoption of agroecology and food sovereignty as frameworks for programs and policy advocacy. These, in turn, have further influenced the organization's interest in localization, recognizing that partners and community groups are the main experts, while SeedChange's role is to facilitate the sharing of knowledge, seek funding for partners' work, and support international policy advocacy. In summary, food sovereignty and agroecology (1) provided an alternative to problematic development concepts, and (2) encouraged localization and greater priority to global South perspectives. Working with women's rights organizations–supporting the important links between agroecology and feminist movements through collaborative project design, planning and implementation–is currently strengthening the use of feminist approaches at SeedChange. However, important contradictions and setbacks to material actions for change exist, and working to resolve these will require commitment and ongoing reflexivity and learning informed by partners' perspectives.

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Notes

1.   For these reasons, neo-Marxist critiques situated development as the continued expansion of capitalism [2] (p. 158).

2.   Cooperation Canada notes that this legislation limits work with marginalized groups, is "imbued in racial and ethnocentric bias" and "hinders equitable and effective partnerships" [13]. There are efforts underway to amend the legislation (see [13]).

3.   The participants responded to an open invitation to participate in one of three workshops. The lead author emphasized there was no obligation to participate. Written consent was obtained by email after the consultation. The individuals consulted received a copy of the draft article before the workshop and subsequent versions for their review and feedback as well.

4.   See https://cooperation.ca/canadian-food-security-policy-group/, accessed on 15 June 2022.

5.   For example, the Convention on Biological Diversity (CBD 1992), International Treaty on Plant Genetic Resources for Food and Agriculture of the Food and Agriculture Organization (ITPGRFA 2001), and the United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP 2018).

6.   Reducing public spending and the privatization of public utilities and services, as well as increasing raw exports and foreign investment were key aspects of structural adjustment programs prescribed by the International Monetary Fund and the World Bank in exchange for assistance with debt financing in global South countries beginning in the 1980s [35].

7.   See as an example, FAO's Agroecology Knowledge Hub website, https://www.fao.org/agroecology/overview/en/, accessed on 15 June 2022.

8.   Renowned Cree activist-scholar Priscilla Settee joined the board in 2017 and recommended SeedChange include more Indigenous directors.

9.   See for example a 1975 video featuring food aid in Lesotho and Bangladesh (https://youtu.be/LZ6b3VW4vC0, accessed on 15 June 2022).

10.   See for example, a 1988 video featuring projects in various countries (https://youtu.be/iIg7zMkFRqI, accessed on 15 June 2022).

11.   SeedChange. What is Food Sovereignty (https://weseedchange.org/food-sovereignty/, accessed on 15 June 2022).

12.   For example, the SeedChange website states: "We always deliver our international programs in partnership because we strongly believe in local leadership and building the capacity of local civil society organizations to support their communities. Our decision to engage in a country or region rests on our ability to find a local partner organization that shares our values of food sovereignty, social justice and gender equality" [69].

13.   The Bauta Family Initiative on Canadian Seed Security (http://www.seedsecurity.ca/en/, accessed on 15 June 2022).

14.   Please see [70] and comments in "Collaborators and Supporters", Northern Manitoba Food, Culture, and Community Collaborative (http://www.nmfccc.ca/collaborators--supporters.html, website consulted 10 June 2022).

15.   Please see the Farmers for Climate Solutions website (https://farmersforclimatesolutions.ca/, accessed on 15 June 2022).

16.   See for example, the Ban Terminator campaign with the Canadian Biotechnology Action Network (CBAN), of which SeedChange is a member (https://cban.ca/gmos/issues/terminator-technology/, accessed on 15 June 2022).

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Responsibilities to Decolonize Environmental Education: A Co-Learning Journey for Graduate Students and Instructors

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Abstract: We share our collective stories as instructors and graduate students with an interest in decolonial education on how we learned together in a course on Indigenous knowledge systems (IKS). The course occurred in the environmental studies department at a predominantly White graduate school in the Connecticut river basin in the area now known as the USA. The topic of IKS is steadily gaining interest in the environmental education (EE) field, as evidenced by an increase (albeit small) in the number of publications in peer-reviewed journals. At the same time, decolonial educators are looking for ways to teach IKS in an ethical and respectful manner. Our goal for this paper was to share how we grappled with questions around ethics and cultural appropriation. For instance, as decolonial educators who are not Indigenous to communities where we work and reside, can we facilitate lessons on IKS? If so, how can we do it in a manner that honors IKS and knowledge holders, is ethical, respectful and not appropriating? We learned that applying decolonization factors was crucial. Specifically, our work revealed four key decolonization factors: centering programs in Indigenous philosophies of education, privileging Indigenous voices and engaging Elders as experts, promoting Etuptmumk/two-eyed seeing, and employing Indigenous ways of teaching and learning. This paper makes contributions to the environmental education field, particularly decolonial educators who are seeking respectful and ethical ways to engage with Indigenous knowledge systems.

Keywords: Indigenous knowledge; decolonization; environmental education; two-eyed seeing; third space; Sankofa; Umunthu

1. Introduction

The interest in Indigenous knowledge systems (IKS) in the environmental education (EE; we follow the UNESCO Tbilisi [1] definition of environmental education: a "learning process that increases people's knowledge and awareness about the environment and its associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action") field continues to grow. While the number of publications is on the rise (e.g., [2–16]), decolonial educators are looking for ways to teach IKS in an ethical and respectful manner. Our course on IKS focused on the interface between Euro-American knowledge systems and IKS. Recognizing that IKS are not regarded as valid and valuable in their own right (e.g., [11–19]), the course was upfront with privileging Indigenous ways of knowing and being. Additionally, there was a deliberate attempt to embody Indigenous worldviews, such as relationality, i.e., conceptualizing knowledge as holistic, cyclic and dependent upon relationships and connections to living and non-living beings and entities. Within this worldview, people are part of the environment; engage in multiple ways of knowing, including through spirituality; and view the land as sacred [11,13,19–23]. Thus, participants were encouraged to go beyond print-based formats traditionally preferred in Euro-American-based academia for their projects to consider additional formats that

were not only meaningful to them but aligned with Indigenous worldviews. The idea of relationality including people as part of the environment is a longstanding Indigenous worldview (e.g., [21,22]), although it has lately emerged in the Eurocentric philosophy of posthumanism, which argues that the more-than-human beings (animals, plants and the non-human elements of the natural world) have power and agency [24] and calls for interconnections [25]. Details on the course aims and content are described in Section 3 of the paper.

We journeyed together tackling difficult ethical questions around cultural appropriation. What we found helpful was the application of decolonization factors; in particular, the course embodied centering programs in Indigenous philosophies of education, privileging Indigenous voices, engaging Elders as experts, promoting Etuaptmumk/two-eyed seeing, and employing Indigenous ways of teaching and learning. We acknowledge that decolonial EE is a life-long journey, not a destination, and that we should not aim for perfectionism since this notion is rooted in White supremacy [26]. We will make mistakes on this journey, but we need to learn from those mistakes and keep going. In this paper, we use an autoethnographic framing to share our reflections on the course. We start with a review of literature on decolonizing EE, followed by a description of how we learned together, themes from participants' reflections, discussion and conclusion.

2. Decolonizing Environmental Education from Indigenous Perspectives: What Is Known?

As noted in the introduction, the number of publications on the topic of IKS in the EE field continues to be on the rise across the globe. The Nishnaabeg scholar Simpson [11] argued for grounding Indigenous EE programs within IKS because it strengthens cultures; promotes environmental protection, including sustainable local economies; and supports students "through healing and decolonizing processes" [11] (p. 16). Many Indigenous scholars are proponents of decolonizing education in general, and Indigenous EE programs in particular. They address key factors of the decolonization process: centering programs in Indigenous philosophies of education, revitalizing Indigenous languages, engaging Elders as experts, privileging Indigenous voices, employing Indigenous ways of teaching and learning, creating space for resistance; connecting to the land, having Indigenous education controlled by Indigenous communities and promoting two-eyed seeing [2–21,27,28]. These scholars emphasized the importance of content, as well as process. For instance, Cajete [21], Graveline [29] and Simpson [30] stated that incorporating Indigenous ways of teaching and learning, such as learning-by-doing, observing, storytelling, creating, reflecting, ceremonies, dreams, visions, and fasting, provides opportunities for students to share and learn in a culturally inherent manner and also supports the idea that Indigenous knowledge is not only content but also a process.

Many of the decolonizing factors were apparent in Conrad et al.'s research [31]. In their four-year study to foster the success of young Indigenous students, the authors found that ethical relationships guided by the Cree wisdom teachings of wîcihitowin (life-giving energy) and wahkohtowin (kinship relations, which include the more than human) among Elders, the research team and students throughout the study were fundamental for decolonizing practices to emerge. Such practices included integrating Cree language into lessons; incorporating land-based activities, ceremony and storytelling; remaining open and intuitive; letting go of power and control; and creating a welcoming space. Similarly, Ragoonaden & Mueller [32] incorporated Indigenous traditions of teaching and learning in an introductory university course and found that students appreciated the peer mentoring, circles of learning and relationship with instructors. Indeed, engaging students in Indigenous pedagogies opens the opportunity for students to understand that transformation can take the form of disrupting dominant discourses, which is a key strategy for decolonizing education [33].

An example of connecting with the land is illustrated in Simpson's work [13] in which she advocates for land as pedagogy by using Nishnaabeg stories as a process and context

for Nishnaabeg intelligence. She starts with the Nishnaabeg maple sugar origin story she learned from an Elder. The story illustrates the basic foundational Nishnaabeg values of "love, compassion and understanding", which were missing in Simpson's education experiences from kindergarten through to graduate school [13] (p. 6). Nishnaabeg intelligence encompasses embodiment and conceptual thought—one learns "*from* the land and *with* the land" [13] (p. 6), emphasis in original). Nishnaabeg ancestors were practitioners of Nishnaabeg intelligence:

> Our ancestors' primary concern in "educating" our young people was to nurture a new generation of Elders—of land based intellectuals, philosophers, theorists, medicine people, and historians who embodied Nishnaabeg intelligence in whatever time they were living in because they had lived their lives through Nishnaabeg intelligence. [13] (p. 13)

Indeed, land-based education uses an Indigenized and environmentally focused approach to education by recognizing the physical, mental, cultural, social and spiritual connection to the land [6,34–38]. It is a possible solution to addressing the impacts of climate change, particularly on children and youth [39]; improving the lives of Indigenous youth by helping to create connections to land and developing resilience and wellbeing [40]; and directly challenges settler colonialism because its goal is to sustain Indigenous life and knowledge [41].

Mi'kmaq Elder Albert Marshall developed the concept of *Etuaptmumk* "Two-eyed seeing", which means learning "to see from one eye with the strengths of Indigenous ways of knowing, and to see from the other eye with the strengths of Western ways of knowing, and to use both of these eyes together" [27] (p. 335). Two-eyed seeing is illustrated in a multi-year community-based participatory research project initiated by the women of the Pictou Landing Native Women's Group (PLNWG) in Nova Scotia, who were concerned about the health impacts of dumping effluent from the pulp and paper mill's operations into their waterways. This approach made room for Indigenous ways of knowing (e.g., oral histories, sharing circles, documentary film-making) to work in tandem with Western ways of knowing (e.g., conducting a variety of monitoring techniques—water, air, soil, and sediment sampling and analysis). The result was a broader assessment of health concerns and informed a holistic understanding of individual and collective health in Pictou Landing First Nation. For this research, "two-Eyed Seeing has been central to the project as the PLNWG and their university partners have sought to conduct relevant, respectful, responsible, and reciprocal research" [42] (p. 8). As of 2020, the mill was shut down [43].

Another example is Bartlett's work [44]. She posits that Western sciences focus on matter and energy and promote object-oriented minds; on the other hand, at the heart of Indigenous sciences is consciousness. According to Bartlett, learning to attribute consciousness to natural objects has the potential to change students' attitudes toward nature by nurturing respect and reverence. She describes an exercise on solstices and equinoxes that uses the "Two-eyed seeing" concept. The exercise teaches the Western science concepts on the seasons and Indigenous ways of knowing. In particular, learners are encouraged to shift their consciousness to animate the Sun to become "Grandfather Sun which enables him to see Mother Earth."

We join the conversation on ethically and respectfully teaching and learning Indigenous knowledge systems. In particular, our work responds to an area of research Lowan-Trudeau [6] identified as needing further exploration, which is the role of non-Indigenous people in Indigenous EE and how to engage with and share Indigenous knowledge in a respectful manner.

3. How We Learned Together

3.1. Course Description

As mentioned in the introduction, the course was offered on zoom in the spring of 2021 and focused on the interface between Euro-American knowledge systems and Indige-

nous knowledge systems (IKS). It was designed for students interested in learning about cross-cultural theories of knowledge and practice and serving in cross-cultural contexts in areas such as education, conservation and environmental sustainability. The learning outcomes included the following: explore the ways in which Indigenous knowledge systems have been adapted to meet contemporary imperatives by Indigenous peoples around the world; begin to see Indigenous epistemologies and ontologies as unique bodies of knowledge; understand the living and open-ended nature of Indigenous knowledge systems; understand the rights of Indigenous peoples to their knowledge and heritage; understand Indigenous peoples' resilience, resurgence and revitalization; gain an appreciation for Indigenous and decolonizing research in conservation and education; and consider the ethical dimensions of working with Indigenous peoples surrounding intellectual property rights and appropriation.

Topics included IKS and worldviews; land-based pedagogies; knowledge and cultural appropriation; Indigenous and decolonizing research methodologies; and resilience, resurgence and revitalization. The last topic was informed by Simpson's call [10] encouraging students and instructors:

> "to think about how our Ancestors have resisted the processes of colonization, colonialism, and assimilation in the past. This injects the learning process with power and hope, with the recognition that our peoples have worked hard to protect our Traditional Territories, cultures, and knowledge in the past, and it counters the stereotype that Aboriginal Peoples were simply helpless victims in these horrific processes. It assists students and instructors in recognizing their responsibilities to the coming generations and allows students to develop the skills they need to engage in effective resistance strategies once they graduate." [10] (p. 19)

Table 1 gives an overview of the topics and sample materials we read, listened to and watched and examples of webinars we attended.

Table 1. Course Content: Topics and Materials.

Topic	Sample Materials			Sample Webinars Attended
	Scholarly Articles (See Full Citation in the References)	**Podcasts**	**Videos**	
Indigenous knowledge systems and worldviews	[7,12,17,18,45,46]	Indigenous Rights Radio [47]. Traditional knowledge protects Mother Earth All My Relations Ep #9 [48] Green Dreamer interview with Galina Angarova of Cultural Survival [49]	Etuaptmunk Two-Eyed Seeing with Albert Marshall [43]. Oren Lyons on the Indigenous View of the World [50] A history of Indigenous languages [51] TEDXTalk. Etuaptmumk: Two-Eyed Seeing [52] Meshkanu: The Long Walk of Elizabeth Penashue [54] Introducing and disrupting the "perfect stranger" [55] The land owns us [56]	Môwijabôda (Let Us Unite!): Songs, Stories, and Language of the Abenaki (Dawnland) Sogalikas Storytelling Evening Decolonizing: Placing Indigenous Peoples in the Conversation Climate Change: Indigenous Perspectives Indigenous Stories—Decolonial Organizing and Collaboration in New Hampshire Decolonizing Place-Based Education
Land-based pedagogies	[6,13,21,32,33,38,41,53]			
Knowledge and cultural appropriation	[57]	All My Relations Ep #7 [58]	Cultural Appropriation [59]	Decolonizing Science: Centering Indigenous Science, Methodologies, and Practices The Iroquois and the Development of the US Government
Indigenous research and decolonizing methodologies	[9,19,23,60–63]			
Resilience, resurgence and revitalization	[64–67]	All My Relations—For the Love of the Mauna Pt 1 [68] and part 2 [69]		Indigenous Knowledge & Western Science: Collaboration, Relationship, and Climate Solutions

There were four assignments for course participants taking the course for two credits: class participation; personal and community knowledge systems, which had three parts—personal knowledge system; community knowledge, which required course participants to have zoom conversations with 2–3 local people in their community to learn where the knowledge they use comes from, using the data from the conversations participants were to create a product (could take any form such as artwork, a poster, a video, or paper) to summarize what they learned from the community conversations and their personal knowledge system; a group project on facilitating a lesson on IKS of a particular place to an audience of their choice; media assignment, which required course participants to find a topic addressing the broader theme of "Indigenous Knowledge" in the media (e.g., magazines, newspapers, YouTube, internet stories, Podcasts, TV or movie clips, blogs), and analyze how the IK concept is discussed and consider whether this is consistent (or not) with class materials and discussions. Participants taking the course for three credits had an extra assignment that focused on creating an ethical protocol to conduct research in an Indigenous or local community.

We had a variety of classroom activities. Two consistent ones included a land acknowledgment of a particular community and sharing of the learning from everyone's "sit spot" activity. We acknowledged the problematic nature of land acknowledgments, which tend to focus on only "reading a script"; we tried to educate ourselves by learning the history (past and present) of the Indigenous peoples of the places we were acknowledging and also discussed ways of building authentic relationships with them. The idea of including a "sit spot" in our learning was inspired by the Abenaki Elder who shared his wisdom on "learning from the land."

3.2. Autoethnography

Seven of us (five participating as students, one teaching assistant and one course instructor) discussed as a team the idea of sharing our decolonial journey through our experiences of the course. A summary of our team, including our roles and key lessons from the course, is given in Table 2. We framed our accounts with personal reflections of ourselves. As such, we applied an autoethnography approach, which is a type of self-narrative that enables researchers to draw from their own life histories and experiences to understand cultural experiences [70,71]. Essentially, autoethnography is about writing the personal and its relationship to culture [72].

Table 2. Author Major, Role in Class and Key Lessons.

Name	Degree Major	Role in Class	Key Lessons and/or Decolonization Factors
Sara	Environmental education	Teaching assistant	Centering programs in Indigenous philosophies of education—the differences between IKS and WKS; Etuapmumk/two-eyed seeing—acknowledging truth and centering Indigenous culture bearers are keys to presenting IKS as a non-Indigenous environmental educator; Discomfort.
Sal	Environmental education	Student participant	Centering programs in Indigenous philosophies of education—understanding of the difference between IKS and WKS; Privileging Indigenous voices and engaging Elders; Indigenous ways of teaching and learning—story telling, language; discomfort—impacts of settler colonialism.
Nicolette	Environmental education	Student participant	Centering programs in Indigenous philosophies of education-Indigenous presence, Knowledge systems; Classroom culture; Discomfort—impacts of settler colonialism.
Emily	Environmental education	Student participant	Centering programs in Indigenous philosophies of education—IKS and WKS; Privileging Indigenous voices and engaging Elders; Hybrid third space; Discomfort—impacts of settler colonialism.

Table 2. *Cont.*

Name	Degree Major	Role in Class	Key Lessons and/or Decolonization Factors
Jennie	Conservation biology	Student participant	Hybrid third space; discomfort—impacts of colonialism; Classroom practices.
Emma	Environmental education	Student participant	Role of discomfort in transformation; always becoming; positionality; classroom practices.
Jean	Environmental education	Instructor	Positionality—informal and formal education experiences; Umunthu "I am because we are, and because we are, therefore I am" ([22], p. 108); Sankofa "It is not wrong to go back and fetch what you forgot" ([73], p. 1); two-eyed seeing; discomfort; always becoming

To give further context regarding the course, we share Jean's reflection:

I was the course instructor who is not Indigenous in the community where I currently live and work though I am Indigenous in my home community. My passion for and interest in Indigenous Knowledge Systems started when I was young watching my great grandmother make traditional medicines for people who'd come to seek help for various illnesses. I learned a plethora of IK including farming since we were subsistence farmers. However, when I went to school, I was quickly told not to bring the knowledge and practices we were using at home, rather to focus on the real and valid knowledge which was the western knowledge. The more western education I got, the more I discounted the knowledge I grew up with. It wasn't long after I got my masters degree in environmental science and policy that I started questioning my education up to that point particularly why the IK we were practicing at home was not accepted in school, what could have been the problem if we learned both knowledge systems i.e., practice "Two-eyed Seeing"? I therefore decided to go back to school to explore IKS and environmental education. I follow scholars who promote IKS as valid and valuable in their own right (e.g., [11,13,14,17–19]). I have found the sub-Saharan notions of Umunthu/Ubuntu—"I am because we are, and because we are, therefore I am" ([22], p. 108) and Sankofa—"Return to the source and fetch", put it differently, 'it is not wrong to go back and fetch what you forgot'. [73] (p. 1)

Umunthu and Sankofa guide my work both as an educator and researcher. Consequently, as the instructor, I approached the class as a co-learner with all participants. While I designed the syllabus with course content that privileged IKS, I sought feedback from Sara, the TA who gave valuable input on assignments and resources including identifying relevant guest speakers. We debriefed each class and used the feedback to inform the next class. Sara and I took turns facilitating class activities. I tried to foster an atmosphere for all course participants to feel they could participate fully. Creating group norms and reminding ourselves every class helped. In addition to Umunthu, I have found Maxine Green's quote "always becoming" very helpful and promoting a sense of humility. This framing reduces the pressure of 'perfectionism' or to 'get it right.' Furthermore, I am dawn to Battiste et al.'s call for educational institutions to "think, unthink, and rethink" [4]. The fact that this is a spiral process rather than linear demonstrates that we are not working towards a destination, instead we always have to keep 'learning, unlearning and re-learning.' Decolonization is a process not a destination. This understanding framed the course from the beginning and we all kept reminding each other every class—especially when guilt, fear and hopelessness emerged.

As co-learners in the course, instructors and participants alike, we learned from Indigenous and non-Indigenous sources and attended relevant webinars (Table 1). We also learned from each other—we held engaged discussions and shared our fears and hopes.

4. Key Lessons on the Decolonial Journey

We each prepared our reflections on the course and analyzed the reflections for decolonial factors in education. Four factors were evident: centering programs in Indigenous philosophies of education, privileging Indigenous voices and engaging Elders as experts, promoting Etuaptmumk/two-eyed seeing, and employing Indigenous ways of teaching and learning. Furthermore, our reflections revealed feelings of discomfort, grief and guilt following the realization of the historical and present-day truths of colonialization. We also highlight classroom practices that enabled our learning together.

4.1. Deconial Factors in Environmental Education

4.1.1. Centering Programs in Indigenous Philosophies of Education

Indigenous philosophy of relationality was fundamental in the design of the course. Within this philosophy, knowledge is conceptualized as holistic and dependent upon relationships and connections to living and non-living beings [11,13,19–23]. We came to understand that IKS and WKS are distinct ways of knowing, the importance of paying attention to unexamined assumptions that tend to influence the way we view the world (e.g., why IKS are regarded as inferior and not valid ways of knowing and being), and the resistance against settler colonialism and assimilation demonstrated by Indigenous communities. These points are evident in the excerpts from the reflections of Sara and Sal:

> I learned first and foremost that Indigenous knowledge and Eurocentric/Western knowledge systems are two distinct ways of knowing. Though specifics may differ between communities, I came to understand that Indigenous knowledge is experiential [17], incorporates Oral Tradition [21], and is based on deep knowledge of a place gained through thousands of years of living in close connection with the landscape [74]. Knowledge is passed through generations via Elders, knowledge holders, language, culture, sacred histories, and ceremonies [21,52,64]. Leilani Holmes [45] explains IKS as knowledge for the sake of "inciting humans to act in ways to ensure protection and reproduction of all creatures in the universe" [45] (p. 37). In contrast, Western/Eurocentric Knowledge prioritizes writing [17], book learning, separates and categorizes [14], is often decontextualized from place [75] and forged around hierarchies, linearity, individual gain, and the rule of time [19]. (Sara)

> Just as the Indigenous knowledge systems we learned about tended towards a holistic, relational perspective rather than isolated components, I came to understand that how people engage with others in their professional lives emerges from a broader way of understanding and interacting with the world. Brown [76] suggests that the European colonial paradigm has its origin in the dismantling of the holistic self: "When the European male . . . separated their mind from their heart . . . this emotional detachment from their lands allowed them to leave their homeland and export their philosophy of oppression throughout the globe [76] (p. 28). (Sal)

4.1.2. Privileging Indigenous Voices and Engaging Elders as Experts

The materials we chose to read, watch and listen to, including the webinars we attended, were mostly created and facilitated by Indigenous scholars and practitioners (Table 1). We learned from the Elders who visited our class as guest speakers, which is a key decolonization factor supported by Indigenous scholars (e.g., [2–4,11]). Emily and Sal share their take on this:

Through the oral stories of Jean and guest speakers, including the Abenaki Elder, and the written narratives of Indigenous scholars, we began to learn about Indigenous ways of knowing. While it is impossible to generalize what this knowing entails across every Indigenous group, there are some shared aspects, among them: Land-based learning—culture, language, and community developed in conjunction with the Land; relational learning—knowledge that comes from and is developed through relationships; and stories—knowledge shared through narratives and oral tradition [6,13,14,17,38,41,45,75]. (Emily)

When the semester began, my understanding of what defined an Indigenous knowledge system was blurry at best. Each week, as we listened to Indigenous voices through scholarly articles, podcasts, guest speakers and videos, portraits of many knowledge systems came into focus. They held in common an emergence from the land itself and a way of being in interdependent relationship. Rasmussen and Akulukjuk [14] illustrated this emergence from the land in their conversation about language. "In Nunavut, the land speaks Inuktitut. What I mean is that the land (and sea) evolved a language to communicate with (and through) human beings, namely an Indigenous language that naturally "grew" in that area over thousands of years of interaction between the elements and the human and plant and animal beings" [14] (p. 279). (Sal)

Additionally, the course privileged Indigenous writing and orality.

4.1.3. Promoting Etuaptmumk/Two-Eyed Seeing

"Two-eyed seeing" described in the literature review section was another factor that was deemed important by participants. Sara found this notion a useful tool in her role as a non-Indigenous educator:

As a non-Indigenous educator, how do I present the unique strengths of both Indigenous and Western knowledge, rather than centering Western knowledge or inauthentically blending the two, in my education? I learned the first steps to this are truth and relationships.

Etuaptmumk/Two-Eyed Seeing in environmental education, a field based on the land, first and foremost means acknowledging truth. The truth in the context of the United States is that, wherever we teach, we are teaching on lands Indigenous Peoples have lived on and had deep connections with since time immemorial [77]. One way we acknowledged this in class was the class practice of beginning each meeting with a land acknowledgement to center the Indigenous communities, their history, and current presence on the land we were all zooming in from. For me, reading Decolonizing Methodologies by Linda Tuhiwai Smith [19] and listening to All My Relations with Matika Wilbur, Dr. Adrienne Keene, and Desi Small Rodriguez [48,58,68,69] were also foundational to understanding historical and current injustices, as well as how Indigenous-colonizer relations and knowledge systems inform harmful practices in Environmental Education to this day.

Finally, I learned that practicing Etuapmumk/Two-Eyed Seeing in Environmental Education also requires centering Indigenous connection to landscapes through Indigenous voices, themselves. Centering Indigenous voices means establishing relationships with Indigenous culture bearers who can present knowledge in a firsthand, culturally appropriate manner; relationships that are built for the long-term based on respect and Indigenous sovereignty of cultural material. Dr. Linda Tuhiwai Smith explains what such a relationship might look like beautifully, in that " . . . for many researchers the purpose for the relationship is the project, not the relationship, whereas I think for Indigenous communities, they come at the relationship as that is the purpose. You get the relationship right, you build the

relationship, and then you can do many projects. Not just a single project . . . It's never about a single project or a single purpose." [78]

Jennie and Emily do not use the term "two-eyed seeing," they instead talk of a "hybrid third space"' in the context of classroom practices. A hybrid third space could be considered similar to "two-eyed seeing" because it is a space that entertains "both/and" notions [79]. "In our hybrid third space . . . everyone is continuously adding to their knowledge systems through various media. My journey broadening mine" (Jennie).

> In our classroom Zoom space, we began the lifelong process of developing a set of skills to build another space—a "hybrid third space" [79] cited in [75], as described by Jean, our professor, where both Indigenous and Western knowledge systems are recognized as legitimate and powerful ways of engaging with the world. As is so beautifully discussed by June, we learned early on that the goal of this course was not to "blend" Indigenous and Western knowledge, particularly because this blending tends to occur within a Western knowledge framework [8,18,60]. Instead, in this third space, "sharing our stories with each other as participants in the learning process (educators and learners) allows us to understand each other's socio-cultural contexts and contributes to the process of decolonization and inhabitation" ([75], p. 123).(Emily)

4.1.4. Indigenous Ways of Teaching and Learning: Importance of Storytelling

The application of Indigenous ways of teaching and learning, such as storytelling, was helpful for participants. Sal explains:

> In learning from Indigenous Peoples whose languages, values, stories and ways of living are intricately rooted in the land, I became acutely aware of the disconnection embedded in the settler colonialism of my own communities. As guest speaker, an Abenaki Elder pointed out, even the English language upholds this paradigm. "English is a language of nouns—of things—it's a good language to place values, commodify, put things in boxes, hierarchies—for business (Elder, paraphrased from personal communication, 10 February 2021). Rasmussen & Akulukjuk contrast English, a language of economics and money, with Indigenous languages, which tend to be more interactive with and descriptive of the environment [14].

> My goal in taking the course had been to learn how to navigate being an interpretive park ranger in places where Indigenous Peoples have been forcefully removed from the land and whose cultures have often been appropriated for the benefit of White tourists. I wanted to find out how to incorporate more inclusive storytelling, management and decision making. Insights that emerged from this course helped me work towards a better understanding, but they were not in the form of a neat how-to list. Just as the Indigenous knowledge systems we learned about tended towards a holistic, relational perspective rather than isolated components, I came to understand that how people engage with others in their professional lives emerges from a broader way of understanding and interacting with the world . . . Storytelling is an important way of passing along knowledge for the Indigenous Peoples we learned from, and is also core to my work in park interpretation. Kimmerer [18] asks, "What happens when we truly become native to a place, when we finally make a home? Where are the stories that lead the way?" ([18], p. 207). The Indigenous voices we listened to throughout this course reinforced that the stories we tell from the past shape our present and future. Stories that emerge from the land, including from those who have stewarded it for millennia—heard through our minds and our hearts—may be enough to change our own and our communities' values and relationship with the land.

4.2. Discomfort, Guilt and Fear

It is true that the course experiences were enriching, while at the same time, the knowledge of the historical/present-day truths of colonization and cultural appropriation created discomfort, guilt and fear. This dilemma was expressed by many of us as illustrated in the excerpts below:

It was hard to come to terms with the actual history and current state of treatment of Indigenous cultures. I began to struggle and still do with the question of how to make things right. When millions of people live on stolen land how do we right the wrong? (Nicolette)

I found difficulties in negative tones brought into class through discussions and how to perceive that for myself. Some of the topics left a sense of depression and hopelessness for people as a whole. How were we ever going to change, resolve, grow from the oppression, genocide, and complete annihilation of Indigenous peoples and cultures? (Jennie)

As Indigenous voices and stories passed over and through us, it became clear that the shield of academic distance would not protect us from processing course content on a personal level. Learning about various ways of understanding and engaging with the world led each of us to dig deep into our own understandings of the world. This reflection was facilitated by class conversations and in representing our own knowledge systems. For me, learning about Indigenous Peoples whose cultural stories and practices were concentrically interconnected with and born of the land around them was a beautiful and awe-invoking experience. But the flip side of a world opened to that beauty is to unavoidably acknowledge and feel the devastating losses, violence and injustices that Indigenous Peoples have faced from settler colonialism. Throughout the class, I found myself processing grief for the violence incurred by so many Indigenous communities, for the displacement from and destruction of Indigenous lands and for the suppression and loss of knowledge systems that have been built over millennia. (Sal)

As important was the work my classmates and I—most of us Western settlers— did to begin unraveling and decolonizing the ways in which settler colonialism has impacted our understanding of the world: identifying the "hidden" or "silent" curriculum (e.g., [13,17,19,33,53]). By following some of the precepts of Indigenous research methodologies—including emphasizing shared knowledge and reciprocity and respecting the rules and values of a community [9,60], we were able to navigate challenging conversations in class and in our project research. For our final project, we investigated our own knowledge systems and that of our communities by asking questions such as "how do you determine what knowledge is worthwhile?" and "how do you come to know?" These were surprisingly difficult questions to answer as those of us who are settlers (and, to some extent, those of us part of any dominant group) rarely take the time to consider where our understanding comes from. Examining the answers to these questions, though, is a vital part of acknowledging how Western thought dominates spaces—if we want to be a part of creating a third space where Indigenous and Western knowledge systems can coexist, we settlers have to know when and how to step back. As we worked in our Zoom space, developing a hybrid third space, perhaps we were beginning a praxis of learning how to work within the sphere of discomfort. (Emily)

For Emma, the discomfort was necessary for transformation to occur:

My life/work as an environmental educator centering growing community requires that I am always becoming, always transforming. Strand by strand unweaving the ways of knowing passed down to me and weaving a new tapestry.

This transformation process was nurtured through the Indigenous Knowledge Systems course. The role of discomfort in transformation is to illuminate intuition deep down. This intuition guides me towards ways of knowing that grow emergence and abundance. Below, I describe a few of the discomforts that arose for me during the course and how I allowed them to guide my intuition towards transformation.

As an environmental educator and grower of food, medicine and community, it becomes more and more apparent how my positionality as a white, financially-privileged, US citizen really impacts the ways of knowing that I privilege. "Colonialism goes beyond territorial conquest: it affects one's epistemological stance, worldview and perceptions," [75] (p. 106). Through the unweaving of my ways of knowing, the depth of white colonial perspectives embedded in my worldview and embodied in my practices surface. Understanding that entanglement contextualizes in my own experience why land back is central to decolonization and also requires a real movement to decolonize our minds, bodies and spirits. In Indigenous Knowledge Systems and beyond, I have addressed and listened to this discomfort and let it guide me towards deep listening. Learning how to see interconnectedness through two eyed seeing [27,52], how to follow community protocol and value the time it takes to build meaningful trust for strong communities.

The deeper I dive into my positionality, the more I worry about inflicting violence on the land and those I work with by perpetuating white colonial worldviews. Language is a fundamental mechanism of eurocentrism permeating education. Tommy Akulukjuk pointed out in a letter to a friend and colleague that words such as 'wildlife' in English work to distance speakers of colonial languages from the more-than-human world [14]. Inuktitut, he contrasts, utilizes no such words to separate humans from the Earth. Points such as this raise questions: what else do I say that undermines Indigenous ways of knowing? Fear bubbles, but does not take the lead in my response to this discomfort. Instead of letting fear guide, in Indigenous Knowledge Systems we collaboratively engaged in discussion about how to decolonize systems of education and indigenize the practices we bring to our life/work.

Deepening practice related to identity and life/work lead me to discomfort in how I actually show up to my life's space/time. The course acted as a diving board, but now I am going head first into life hoping that once I hit the water I can swim without pulling others down for my own survival. This discomfort guides me to slow down. The reality that time is not linear, but circular nurtured a realization that relationships are sustained through reciprocity developed in cycles of space/time. Action must be taken, but the approach to action that my white colonial mindset brings up is fast and furious, not deep and rooted. adrienne maree brown writes, "We need each other. I love the idea of shifting from 'mile wide inch deep' movements to 'inch wide mile deep' movements that schism the existing paradigm," [80] (p. 20). Following the Indigenous Knowledge Systems course, I feel ready to follow intuition guided by discomfort towards slow, deep movements towards an authentic and Indigenous led decolonization and indigenization movement.

Jean reflected on the challenges she faced as the instructor of the course:

While I tried my best to create a course that elevated Indigenous worldviews in content and process (e.g., Umunthu and Sankofa), there were times I found challenging. For example, when participants felt discomfort by the impacts of colonialism in general and settler colonialism in particular, on Indigenous peoples—I didn't have the right tools to provide the needed support. Simpson [11] recommends that programs promoting decolonization need to have

necessary support strategies in place–which I didn't have. Another difficult moment was participants asking whether it was right for non-Indigenous peoples (as all of us in the class are) to teach IKS? Would we be appropriating? These were tough questions that we worked through by learning from Indigenous Elders, scholars and practitioners (either as guest speakers or through materials they have created.) We learned that as non-Indigenous people in our communities, devoting time to create trusting relationships with Indigenous peoples in our communities is key. I must say that being non-Indigenous to this community and continent was challenging at times. I am grateful to the whole class for being open and journeying together.

4.3. Classroom Practices

The way the class was structured promoted learning among participants, as outlined in the excerpts below.

I was able to begin my understanding of knowledge systems because of the culture of our virtual classroom. Jean helped foster a feeling of equity and respectful curiosity. Questions were considered and asked respectfully. Answers were considered and given respectfully. Ragged thoughts were honored and explored. As a class we felt comfortable sharing our vulnerability and extreme discomfort with the past and the current reach of colonialism. However, in class there was a consistent reminder to not center ourselves in the work. While we may be on personal journeys to understand and feel a personal responsibility in unintentionally upholding the systems of colonialism, making change isn't to make us feel more comfortable. We "are always becoming" and these changes will take time and respect for both ourselves and others. (Nicolette)

For Jennie, the "sit spot" activity was helpful in processing difficult topics:

As part of our learning process, we were encouraged to explore these difficult topics in an organic manner. Some ways that helped were mindfulness while outdoors. I would gaze at the sky while out with my dogs. Some nights it was snowing and others it was so clear where the stars were able to glisten. But no matter the weather, I would stand outside and let my mind wander through the topics I struggled to understand.

I was often sent back to moments at Uluru, where there was an overwhelming feeling of welcoming to gaze into a secret world. A world where the past, present, and future elders and members could be properly honored. Where dreaming is a way of learning and understanding. A way of communication between generations. Bob Randall, a Yankunytjatjara Elder and traditional owner of Uluru, describes this feeling exquisitely in an interview, The land owns us. Uluru "doesn't push anyone out but brings everyone in and a completeness of being who you are where you are is a really good feeling; it's a beautiful feeling and I wouldn't exchange that for anything in the world" [56]. (Jennie)

Our collective dialogues, shared reference materials and projects encouraged me to decolonize my personal knowledge systems and find respectful ways to indigenize the growing practices I center and share. (Emma)

5. Discussion and Conclusions

Through our decolonial journey, we learned that, as environmental educators and conservation biologists not Indigenous to the communities where we reside and work, engaging with decolonization factors in EE programs is central. Four factors were evident in our course: centering programs in Indigenous philosophies of education, privileging Indigenous voices and involving Elders as experts, promoting Etuaptmumk/two-eyed seeing, and employing Indigenous ways of teaching and learning. These are some of the factors Indigenous scholars identified as foundational in the decolonization process in

education [2–14,20,21,27,28,37]. The four factors are highlighted in Table 2 and in Section 4 of the paper. Our story adds to the scholarly work on decolonization practices in education.

Another common theme was centered around feelings of discomfort. All of us struggled at one point or another. For instance, realizing the depth of the impacts of colonialism on Indigenous peoples caused grief and guilt (Emma, Sal, Jennie, Nicolette, Sara). The idea of teaching IKS when one is not Indigenous in a place caused fear of appropriation (Jean). What we found helpful was the application of Indigenous ways of teaching and learning, such as storytelling (e.g., Sal, Nicolette) and reflecting (e.g., Jennie). In this way, we were able to focus on both content and process. Another strategy that worked for us was framing the course with the understanding that decolonization is a process instead of a destination; as such, we are on a learning journey that is a spiral process that involves "learning, unlearning, and re-learning." Realizing that "we are always becoming" (Maxine Green) takes the pressure off to aim for perfectionism (Emma, Nicolette, Jean). The co-learner model, classroom environment and the relationship between participants were highlighted as factors that contributed to positive learning outcomes (e.g., Nicolette, Jennie, Emma). As scholars argued, incorporating Indigenous teaching and learning pedagogies has positive outcomes [31–33].

We applied these decolonization factors as a first step acknowledging that we could have done more and that decolonization is an ongoing process. Yes, we had Elders as guest speakers; however, it is recommended that Elders need to be engaged on a continuous basis rather than as guest speakers here and there [11]. The course was taught on Zoom and would have been more impactful with the opportunity to learn from the land in concrete and meaningful ways. The limitations we highlight should be considered next time the course is taught.

By sharing our stories, we join the conversation on the call to decolonize the environmental education field, particularly decolonial educators who are seeking respectful and ethical ways to engage with Indigenous knowledge systems.

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Unsettling the Hegemony of 'Western' Thinking: Critical Reflection on My Journey to Understanding Campesino-a-Campesino Pedagogy

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Abstract: In the field of education for sustainability, there is a call to consider diverse livelihoods and world views beyond dominant anthropocentric, scientific, and 'Western' ways of understanding and living. For scholars and educators trained in 'Western' culture, this is complicated by how this dominant culture is infused in all our ways of thinking and being. This paper explores the authors' journey to unsettle their 'Western' thinking through analysis of reflexive field notes taken during field research. Data is shared from the author's doctoral study of Campesino-a-Campesino (CaC) as an anti-racist pedagogy. The paper tells a story of the unsettling of the author's assumptions about research, race, development, and education prompted by field experiences and guided by critical educational ethnography. An interdisciplinary approach to analysis is used including scholars in critical race theory, TribalCrit, Indigenous education, decolonization theory, and post-development theory. Conclusions illuminate researcher reflexivity, understanding critical context, learning the history of research, and shifting which scholars are considered in the analysis as crucial in the process of decolonizing the study of anti-racist pedagogies for sustainability.

Keywords: decolonizing research; pedagogy; sustainability; anti-racist; critical ethnography; reflexivity; development

1. An Invitation to Unsettle and Expand

Sustainabilities (emphasizing the plural) recognize that there are multiple ways sustainable livelihoods can and should manifest in diverse geographic, social, cultural, and political contexts. This plurality invites readers to consider sustainable livelihoods that do not originate in Western/Euro-American world views but originate in Indigenous communities and other racialized communities, and emerge from multiple ways of knowing and being. Scholars of education for sustainability call attention to the need to consider a diversity of values and livelihoods that go "beyond the dominant anthropocentric, scientific and 'Western' materialist ways of viewing the world to include local and Indigenous perspectives" [1] (p. 407). Unfortunately, historically, through the projects of colonization, development, and modernization, these local and Indigenous perspectives have been discounted as primitive, backward, sometimes ignored, and often systematically and forcibly erased [2–6]. The subjugation of knowledge and people has been justified through colonial logics of white supremacy that encode white culture and knowledge as superior [7]. Kahnawake Mohawk scholar Taiaiake Alfred explains that the "basic substance of the problem of colonialism is the belief in the superiority and universality of Euro-American culture" [8] (p. 109). The dominance of Western/Euro-American ways of knowing in global society continues to reinforce the illusion that 'Western' knowledge and white culture are 'normal' and universal [6,9]. As Walsh explains, "the problem is not with European thought in and of itself but with the intimate entanglement of such thought to the processes and projects of modernity and, following Quijano, the coloniality of power" [6] (p. 12) The hegemony of Western/Euro-American thought continues to reinforce power relations that favor knowledge (and people) that are already privileged and marginalize knowledges (and peoples) other than Western/Euro-American [4,10,11].

The idea of an anti-racist approach to sustainability invites researchers, educators, and practitioners to unsettle the hegemony of Western/Euro-American thought and expand our thinking about sustainability to recognize that there are many ways of knowing and being that are legitimate and should be equally respected. Anti-racist approaches act in ways that reduce racial inequalities and hold that "racial groups are equals and none needs developing" [12], (p. 24). Among the many aspects of anti-racist approaches, this paper focuses on ways researchers, educators, and practitioners of sustainability can promote equity by challenging the privileging of Western/Euro-American ways of knowing over other knowledge and revaluing marginalized ways of knowing and being and the people who hold them.

As George Dei explains, anti-racism necessarily involves "the privileged acknowledging their relative power and a preparedness to interrogate and rupture systems of power and privilege in order to effect global social transformation" [10] (p. 15). For many scholars, including myself, who were trained in Western/Euro-American thinking, this is easier said than done. We are all embedded and entangled in colonial relations of power and privilege that reinforce Western/white culture as the norm [7,9]. This paper is a critical examination of my Ph.D. research journey. The purpose of sharing my experiences of unsettling during my research journey is to explore how reflexivity can move researchers, educators, and practitioners toward decolonizing research and valuing anti-racist approaches to education for sustainability. By unsettling, I mean to uncover and critically examine assumptions that may have been unconsciously entrenched. I reflect on how my experiences in the field and encounters with theory forced me to unsettle my own unexamined assumptions about, research, race, development, and education.

My Ph.D. dissertation focused on Campesino-a-Campesino pedagogy (peasant-to-peasant) as a way to empower peasants and spread agroecology practices. Campesino-a-Campesino (CaC) is a constructivist pedagogy that is characterized as horizontal because it involves knowledge exchange between peers. It is a process of collective reflection and action through which peasants share agroecological practices and innovative solutions to problems [13–15]. Agroecology is a way of farming that promotes food production in relation to nature, aligned with ecological principles, with an emphasis on farmers' knowledge of their context [16]. Although an in-depth examination of CaC is beyond the scope of this paper, I explore its character and ways of arranging learning to illustrate how my own thinking changed through its study. This paper will focus on moments of unsettling in my journey to understanding CaC as an anti-racist approach to education for sustainability. Thus, various aspects of CaC are woven throughout this paper as they apply to moments in my journey. I will first briefly explain the form of the paper and the framing of my analysis. I will then share my story in five parts: (a) How I came to this research, (b) Navigating research and privilege, (c) Understanding how racism operates in Mexico (d) Narratives of 'development' as sites of struggle, (e) Uncovering latent assumptions about education

2. An Academic 'Story'

The form of this paper is an academic 'story' where, in line with Indigenous education, the story is a vehicle for learning (for the writer and the reader) and a way to explain a perspective as it unfolds [17]. As such, it is written as a narrative in the first person. This story is not chronological but visits various points in the timeline of my journey to convey the changes in my understanding. To develop this paper, I read through my reflexive field notes taken during my research (2018–2020). These were taken alongside my descriptive case notes each day during my three visits to Mexico. In these reflexive notes, I reflected on my role as a researcher and/or how my experiences changed my understanding. Several scholars in contemporary ethnography emphasize the need for researchers to reflect on "their own positioning and biases in relation to the people and the landscapes of activity they are engaging" [18] (p. 409). For the purpose of this paper, I chose reflexive notes that represented a change in my perspective or evidence of an

acknowledgment and unsettling of my biases. In so doing, I answer Fortier's call for "non-Indigenous academics to make transparent even the most vulnerable and shameful inadequacies of our research" [19] (p. 33). I then explain my engagement with literature that helped push my thinking. I also include, where applicable, actions that I took as a result of this unsettling. This is, of course, only part of the story and more can be found in my Ph.D. dissertation [20]. I also consider my dissertation the first step in my decolonizing journey as my experiences since have further pushed my thinking and changed my approach.

My doctoral research was done by combining critical educational ethnography [21] and case study methodology [22]. This design was used to explore a case of CaC pedagogy in practice in the municipality of Calakmul, Campeche, México, focusing on five communities as sites within the broader case of 15 practicing communities. The facilitating organization was *Fondo Para La Paz* (FPP) or Fund for Peace, a small Mexican NGO in operation for 40 years. At the time of writing, FPP was working with communities in three regions of Southern México. Their mission was to, "promote the development of Indigenous communities living in extreme poverty, increasing people's capacities to generate their own living conditions" [23]. Their small field teams in each region worked with communities to support self-sufficiency through sustainable community development programs that were developed through reflexive and participatory processes in each local context [20].

The focus of critical educational ethnography (CEE) is "radical moves toward justice within the context of education (be it in or out of schools) for communities with whom research is being conducted" [21] (p. 147). A blended methodology, CEE, brings important elements of critical ethnography into educational ethnography. It takes up critical ethnographers' insistence on "viewing power, practice, and meaning as essentially indivisible contours of history and society" [18] (p. 407). CEE is characterized by essential elements including (a) articulation of critical context, (b) understanding and defining culture, (c) negotiating relationships and embeddedness, and (d) inclusion of multiple ways of knowing [21]. These elements together guided me to, among other things, negotiate a reciprocal research agreement with FPP, keep reflexive research notes, and engage participants in reflections on my analysis through member reflections [24]. For a more detailed description of these methods see [20]. Part of my story is how I came to choose CEE as a framing device and how I chose to enact this framing in context. This will be explored in the section on navigating research and privilege.

3. Interdisciplinary Framing

In this paper, I use an interdisciplinary approach [25] drawing on various scholars in decolonization theory, critical race theory, tribal critical race theory (TribalCrit), anti-racism, critical ethnography, Indigenous education, and post-development. I choose those whose writing was critical in helping me to understand moments of unsettling and change my approach to research.

I draw on concepts of race to highlight how racialization, a social process of assigning race and its associated meanings, continues to justify the inequality and oppression of Indigenous peoples [26]. As Walsh points out, the social constructions of race have their roots in historical processes of colonization [6] and thus are intertwined and endemic in settler-colonial societies [11]. Both antiracism and critical race scholarship point to the part that white privilege plays in reinforcing inequalities through a "system of opportunities and benefits conferred upon people simply because they are White" [27] (p. 27). As Bonnett further explains, "non-white identities, by contrast, have been denied the privilege of normativity, and are marked within the West as marginal and inferior" [28] (p. 188).

As Ghanaian-born anti-racism scholar Die explains, " ... social formation[s] provide the structures within which values, ideas and norms of dominant groups are hegemonized in society" [10] (p. 11). These social formations are imbued with power relations that dictate who has the right to decide what a sustainable livelihood should look like; who is considered to have expertise; who is the teacher, and who is the learner. These power

relations have led to imperialism where "White Euro-American culture(s) as the norm from which to evaluate other cultures" [10] (p. 12). As Lumbee scholar Brayboy explains, "theory and practice are connected in deep and explicit ways such that scholars must work towards social change" [11] (p. 403). As white researchers, educators, and practitioners, when we, perhaps unconsciously, act on the assumption that Western/Euro-American knowledge is universal, we neglect to consider ways of knowing and being as they are understood in other cultures. Through this neglect, we not only ignore important considerations for sustainability, but we also continue to perpetuate the imperialism of 'Western' ways of knowing, effectively erasing and replacing these other forms of knowledge.

As Barker claims, "there remains in Western culture a choice between imperialism and emancipation, and that means that imperialism and colonialism are social states, not cultural tenants or imperatives" [29] (p. 341). This leaves room for scholars trained in Western/Euro-American traditions to unsettle and open our ways of thinking and choose to be anti-colonial and anti-racist in our approaches. For white scholars, these approaches involve critical reflection, recognition of white privilege, and taking responsibility for addressing racism. Critical reflection can lead to uncomfortable moments of epistemic friction [30], wherein "our taken-for-granted assumptions about the world begin to crack" [7], (p. 558). According to Seawright, these moments can be transformative and lead to critical consciousness needed to, first, recognize how taken-for-granted assumptions may be rooted in racism, sexism, classism, and second, to imagine and enact alternatives [7].

4. How I Came to This Research

Growing up on a homestead milking goats and pulling carrots, on Turtle Island (Canada), was formative in my understanding of sustainability. It cultivated an openness to the viability of livelihoods that many might consider alternative. I am also a white settler[1], who has only recently learned the colonial history of our settler state and the harms done to people who are Indigenous to this area. As a white settler, I cannot help but be unsettled both by learning the historical and contemporary harms done to Indigenous people, as well as the prospect of decolonization. As Unangax̂ scholar Tuck and collaborator Yang [31] write, settler academics must not forget that decolonization is not a metaphor. This work forced me to recognize my complicity in systems of injustice and challenged me to stay with that feeling, to not make moves toward innocence [31]. This is very humbling work that continues to expose the limits of my understanding and the extent of my privilege. I live in a time when many white settlers are learning about this history and beginning to understand and struggle, as I do, with how to act now that these harms cannot be ignored. This paper is about my mistakes, challenges, and learnings in my attempts to change my approach.

As a scholar of education, my focus is on peer-to-peer learning models as ways to promote sustainable livelihoods. Through my study of pedagogy in graduate school, I came to understand that the ways in which we learn affect what we learn as much as the content of what we are learning. The ways, the arrangements, and the pedagogies through which we learn and share knowledge are infused with both cultural understandings and power relations. Prompted by rereading Freire's Pedagogy of the Oppressed during my education doctorate, I began to search for contemporary examples of Freire's [32] conception of consciousness-raising education where educators are partners or allies in the struggle against structures of oppression. My search led me to several studies of CaC pedagogy in Latin America. CaC is said to be a Feirian popular pedagogy because of its horizontal and constructivist nature. For example, through organized groups, Campesinos/as show each other agroecology practices they have used on their own land and encourage others to try. They then meet to reflect on their experiences. My search for more about CaC led me to Eric Holt-Giménez's book, Campesino-a-Campesino, which chronicles how international peasant farmer exchanges spread sustainable agricultural practices from Guatemala to México, Nicaragua, Honduras, and Cuba during the 1980s and 90s [15]. More recent scholarship highlighted the importance of CaC as an educational methodology in the

growth of agroecology and food sovereignty movements [13,14,33]. La Via Campesina, for example, has taken up CaC as an important tool for teaching and learning agroecology practices among peasants and small-holder farmers [34].

CaC is often compared to agricultural extension, a model of agriculture education practiced in many parts of the world where agronomists or extension officers from universities or companies teach farmers techniques that have been developed to improve production. In his writing on extension, Freire critiqued traditional extension methodologies on epistemological grounds [35]. Extension, as he defined it, involved bringing an already elaborated concept to someone who presumably does not know it. The extension also has the effect of negating the knowledge already possessed by peasants themselves. The traditional extension then is seen as an act of replacing local knowledge with knowledge of so-called 'experts', which reinforces hierarchies of knowledge and expertise. Emphasizing the importance of participation in the construction of knowledge, Freire argued that extension erased the capacity of people to gain the intended knowledge because knowing requires a subject's action in transforming their own reality. In Freire's analysis, without participation in the construction of the elaborated concept, the target of extension becomes an object. As an object, the Campesino/a is expected to passively receive this information and put it into practice. However, as Freire argues, only a subject can act, and through this acting, know [35].

In contrast, CaC is described as a participatory tool that ensures Campesinos/as are included in agricultural development as the drivers of knowledge construction and sharing activities [36]. Those who are the leaders in CaC are called agroecology promoters, or in this case study, promoter guides. Their role is to share their knowledge of agroecology practices with interested neighbors and community members and help guide their implementation if needed. For ANAP (Cuba's small farmers' union) CaC is defined as:

> a form of promotion and improvement of production systems, which places farmers in a position to achieve higher levels of sustainability, based on the principle that participation and empowerment of the actors themselves are intrinsic components of sustainable development, and therefore focuses on the initiatives and protagonism of peasants [13] (p. 73).

Although peasant protagonism has no direct translation from Spanish, I use it here to mean the collective power of peasants to create their own sustainable livelihoods. By centering knowledge, action, and collective power of peasants, CaC poses a challenge to the social conception of Campesino/a as "less than". This social conception of Campesinos/as as illiterate, poor, and incapable, has been both historically constructed and socially perpetuated to maintain economic, racial and social inequalities in México. My research was guided by the question: Could CaC be an anti-racist pedagogy that empowers peasants to self-determine their sustainability? Excited by this question, I searched for examples of this pedagogy in practice in the region where it originated, developed, and spread [15].

5. Navigating Privilege in Research

When I proposed the study of CaC in México, my dissertation committee was skeptical. Even after I explained that I had traveled, lived, and worked in México for several months at a time between 2005 and 2008, they were not convinced. I understood why when I read through the long list of papers and books they gave me to read that told the story of the historical harms of research in Indigenous communities. This gave me pause. In selecting this topic of research, I had to ask myself, how could I avoid perpetuating inequalities while conducting research as a privileged white woman in a cross-cultural setting with people who have fewer material resources. In my case, both economic and racial privilege needed to be recognized and reckoned with. After the first meeting with agroecology promoter guides in México I wrote the following in my reflexive journal:

> Today, Maria asked if I had traveled on an airplane and how long it took me to get there and how much it had cost. I answered honestly, adding the fact

that my university had funded my trip to be there. This made me keenly aware of the economic mobility I experience. I also recognized that my ability to fly cheaply depends on those who have more economic means than myself, who fill up flights to Cancun from Canada and the USA, making my flights cheaper. As these vacationers fill up resorts in Cancun, they lure Campesinos/as out of the countryside all over the peninsula toward Cancun in search of jobs, and economic mobility. They make up the bulk of the low wage labor, grounds keepers, room cleaners, that keep resort owner's profit margins high. The fact that my currency has a favorable exchange when paying for hotels, transportation and meals depends on global histories of colonial power. This positions me at an advantage, with more means to access what I need and want [37].

In this reflexive note, I recognize my complicity in systems of global colonial power, and the privilege they afford me. My presence there was a manifestation of my middle-class white privilege. This presence was not neutral but was complicit in systems that pull Campesinos/as away from their substance livelihoods toward resorts, which contribute to the exploitation of their labor and loss of their Indigenous cultures.

As Daphne Patai explains, "it is the very existence of privilege that allows the research to be undertaken" [38] (p. 137). Patai claims that the existence of inequality between researcher and participant makes research inevitably unethical. This inherent inequality is partly due to the split between subject and object on which all research depends " . . . imply[ing] that objectification, the utilization of others for one's own purposes (which may or may not coincide with their own end), and the possibility of exploitation, are built into almost all research projects with living human beings" [38] (p. 139). Ethically, researchers must question "the quality and consequences of their own curiosity, the extent to which their ways and means of knowing and understanding less respected than exploited other human beings" [39]. In other words, if there is little or no benefit to research participants and possible harm, does the researcher's interest in knowing or understanding outweigh the rights of the participants? In research, we do not just learn for learning's sake, "It is not done 'for nothing' in a totally disinterested way. It is for something, often it is to help us understand something" [40] (p. 133), and learning through research can be extractive and predatory. We extract understanding and report it to the academic world for the purposes of our own career advancement [38]. My heart sank.

The reading list given to me by my committee was important in understanding the legacy of the purposes and historical harms of research. Between the 1920s and 1950s, the so-called 'Golden Years' of anthropology, researchers voyaged, or were sent off to 'exotic' countries to do fieldwork [39,41] among the 'savages' of other 'backward' cultures [42]. Their reports, often racist, were consumed with fascination and filed away for the grand purpose of contributing to the knowledge of the diversity of human cultures [43]. However, whose interests was this research serving? This knowledge was often used in the service of the colonial project of maintaining power by controlling the 'troublesome groups' [44]. Māori scholar Linda Tuhiwai Smith identifies research as "a significant site of struggle between the interests and ways of knowing of the West and the interests and ways of resisting of the Other" [45] (p. 2). Matua and Blue Swadener add how the act of research itself can be a colonial act [46]. The act of representation is colonial when "the individuals have been stripped of their power for self-definition and self-expression by being cast in the role of the marginalized Other" [46] (p. 12).

My heart sank even further when I read on page one of Smith's book on Decolonizing Methodologies that research is a powerful and dirty word in Indigenous peoples' vocabulary that still "offends the deepest sense of our humanity" [45] (p. 1). It offends in several ways, including that "Western researchers and intellectuals can assume to know all that it is possible to know of us, on the basis of their brief encounters with some of us" [45] (p. 1). Experiences of Indigenous peoples with research have included lies, empty promises, coverups, betrayals, and inaccurate/fictional ethnographies [47]. The assumption of the authority of privileged 'Western' researchers to represent other cultures is called out as a

perpetuation of colonialism. The inherent questions are, whose interests does the research serve? Who stands to benefit/be harmed by the methods and products of the study?

Taking seriously these ethical concerns, I paused to consider my own motivations and role in pursuing this research. Daphne Patai challenges those considering doing research across race, class, and culture to not be overwhelmed into inaction by the difficulties we face but to act if the study is worth doing [38]. In choosing to act, my motivations were, first, to use my relative privilege to give voice to perspectives that had been marginalized and may not have otherwise been considered in academic discourses around sustainability. As Fine et al., explain, my goal was to "transform public consciousness and 'common sense' about the poor and working classes, write in ways that attach lives to racial structures and economies, and construct stories and analyses that interrupt and reframe the victim-blaming mantras . . . " [47] (p. 169). Rosaldo offers that, "dismantling objectivity creates a space for ethical concerns . . . enabling social analyst to become a social critic" [48] (p. 181). The purpose of ethnography becomes the communication of interests and aims of marginalized peoples, making ethnography a political act [48]. Second, I was motivated to find ways to work in partnership and reciprocity with research participants, so as to develop relationships of solidarity.

I looked for methodologies that would guide me in making my research useful to communities and give them power in defining how they would be represented. I came to use Critical Educational Ethnography as outlined by Howard and Ali, because its goal was the "uncovering of useful and productive knowledge that will help address a concern of the local community" [21] (p. 158). Community members take the role of identifying the concern to be addressed. In this way, CEE addresses the question, "whose interests does the research serve?" posed by the movement to decolonize research methodologies. Howard and Ali argue that critical educational ethnographers must, "approach local communities not simply as subjects of researchers, but as full partners in the research itself" [21] (p. 151). In practice, this decentering of researcher authority should come in the form of involvement of research participants in every stage of the research from design to analysis [21]. When I reflect back on my attempts at involving participants in research goals and design, I admit that they were only partially successful.

I used a reciprocal research agreement with the community organization FPP as one way to align my study with their priorities and to reciprocate their energy in supporting my study by contributing to their work. In my conversations with FPP staff, I asked if there was a particular product or form of labor that I could offer in return for their participation in my research. They identified what is called a *sistematización*, which I learned was a document outlining an approach or system. In this case, FPP's approach to building CaC networks with communities. Including this as a product of research changed and enriched my research in several ways. I added several questions to my interview guide for staff and participants to help build my understanding of how this program had developed over time and I held several interviews and meetings with staff to collaborate on the development of the *sistematización*. Thus, co-developing the *sistematización* with FPP served the interests of the community organization and also guided the direction of my research.

About a year after we made the reciprocal research agreement, I met with FPP staff to present a draft of the *sistematización* and ask for feedback and changes. When I listen back to the recording of this meeting, I laughed at the exclamation of relief I made when the coordinator said the work I had done would be very useful to her team. I share this for two reasons. First to demonstrate how a reciprocal approach to research makes the success of the research contingent on its usefulness to the partners in research. My success depended on my collaborative relationship with community partners and the relative contribution of my work to theirs. Second, as evidence of the time and trust that FPP staff had given me before they knew if my work would be useful, or not. In later communications, I was told that this document had helped FPP secure funding to expand the program and train new staff. This was when I felt that the research agreement had been reciprocal.

My second attempt to be guided by local concerns and involve participants in research came in the form of member reflections [24] where initial analysis was shared with research participants, and they were asked for feedback. In this way, my analysis evolved in conversation with participants. Member reflections in this case took the form of short narratives I wrote based on interviews and observations, which I read out loud to each group. Throughout the reading of the narratives, I paused and asked questions about what I felt were gaps in my understanding and questions about the accuracy of my representation of their reality. By engaging in member reflections, I gave authority to participants, if partially, in how they were represented. There were very interesting and important changes made as a result of member reflection sessions. Even though not all groups were equally engaged in the process of member reflections, all of the participants expressed that they were happy with how they were being represented and wished to have their names on their quotes and photographs. Some even expressed that they felt honored that I had come from far away to learn from them and share their perspectives.

As an interesting unintended benefit of the member reflections process, FPP staff expressed that the short narratives I created for member reflections, would be useful in their fundraising campaigns to support CaC. They also shared that the narratives gave them a view of participants' perspectives of their work that they rarely got an insight into, as they mostly communicated with the promoter guides in each community. In this way, I felt that my efforts served the purpose of making participant perspectives and priorities clearer to the facilitating organization. Up to this point, my work had been useful to Campesinos/as through their relationship with FPP, not directly to Campesinos/as themselves.

The limitations of this study came in many forms. Within my Ph.D. program, students begin with a research proposal and then the ethics review process before beginning any fieldwork, thus the purposes of research are necessarily defined ahead of time. Additionally, given the timeline of a Ph.D. program in Canada (4 years), there is not sufficient time for authentic relationship building necessary for communities to truly define the purposes of the study. It is my hope that the relationships I have formed thus far will facilitate this process in the future. Given these limitations, even though I had hoped to find a way for participants to define the direction of my research, it proved unrealistic and even problematic.

In my experience, Campesinos/as are very busy with the work needed to feed their family. For example, near the end of one member reflections session, when I asked a participant if she had more time to discuss what I had written based on interviews with her and her fellow community members, she said she hadn't yet made the tortillas and it was getting late. I felt that asking more of Campesinos/as time would have been disrespectful. There were more immediate needs to be taken care of. I wrote in my reflexive journal "If you can't have a garden because your chickens will eat the seeds you plant, you don't need a discussion: you need fencing" [49]. Those with privilege and the means to buy fencing may have time for discussions. At the time, I felt that asking them to define the direction of research would have been pushing an assumption that research *in itself* has inherent benefits to participants. This is not to say that working with participants to develop a research project is not possible, but that I failed to do so. I acknowledge that cultural differences, institutional processes, and power differentials prevented this research from being truly participant-directed. Thus, despite my efforts to the contrary, my research remained colonial in nature. Systems of white privilege afforded me the opportunity to continue this research, despite its limitations. Learning from this experience, I continue to challenge myself as a researcher to work in ways that engage participants of research in the goals and design of research from the initial stages so that they hold the power to decide its direction.

6. Understanding How Racism Operates in México

Howard and Ali argue for a focus on historic, political, economic, social, racial, and cultural inequalities that may contribute to the research problem [21]. Critical ed-

ucational ethnographers ask, "what are the social conditions that create this particular context?" [21] (p. 148). George Dei explains that "an understanding of how racial, class, gender, and sexual identities are implicated in ways of knowing and of knowledge itself is crucial to the anti-racism project for transformative learning and social change" [10] (p. 14). In this case, identifying the critical context in this study included examining the history of the region within the broader history of México, race, gender and class structures, land tenure structure, and the legacy of 'development' in the region. In this section, I share how my field experiences and my encounters with theory changed my understanding of racism as it is experienced by Campesinos/as in the case study context.

In 2005, in the same state where my future research would take place, my Mexican friend told me that someone she was dating wouldn't speak to her anymore because she had traveled with me to visit Campesino/a villages. She explained that people of the upper classes refused to visit poor villages or associate with those who did so. At the time, I understood this to be explained by classism and began my study in 2017 with many experiences living in México where the race was rarely spoken about.

During my second research visit, on the way to a community participating in the case study, the Indigenous staff of FPP asked about how Indigenous peoples were treated in Canada. After I answered with what I knew about the colonial harms that continue to perpetuate inequalities today, FPP staff began to tell me stories of anti-Indigenous racism in México. One was about a woman they knew who had lost a child while waiting for care at a local hospital. The storyteller named this racism, explaining that the woman had been denied care and stayed the night on the floor of the hallway because she was Indigenous and spoke her own language more fluently than Spanish.

In my search to better understand racism in México, I found critical race scholars who explained how race, gender, and class are intertwined in México and how race plays out in dominant social metanarratives [27,50]. Moreno Figueroa explains that in México the existence of racism is often denied because of what she calls a Mestizaje logic, where it is socially accepted that, "in Mexico, there is no racism because we are all 'mixed'" [50] (p. 388). Despite this assertion, there is still an assumed and engrained white superiority, which manifests in discrimination toward those with 'Indigenous features' or darker skin compared to others [50]. Mestizaje logic has its roots in ideologies of the early 19th century in Latin America where newly independent nation-states attempted to build national identity through homogenization. The mixing of races was promoted as a chance for moral and social improvement for the (Indigenous) individual, at the same time as serving the state's interests in the creation of a unified 'Mexican' identity [50]. This explains how racism can be at work in "a context that not only denies it, but where people do not recognize themselves as racialized, [and] there is no public discourse about it . . . " [50] (p. 388). As Moreno Figueroa explains,

> Those who locate themselves as Mexicans have learned to see and praise Indigenous peoples as an essential and vital part of the national culture and landscape, "giving 'sense' and depth to Mexican history, but they do not seem to have any desire to 'look' like them [50] (p. 393).

This quote shows the contradiction lived by Indigenous peoples in México that reflects societies' willingness to celebrate the richness of culture, but not the bodies of those who enact this culture.

Since México is a settler-colonial state, Indigenous identity is both "legal/political and racialized" [11] (p. 428) which is explained by TribalCrit as a liminal space. The legal/political aspects of Indigenous identity reflect the complex history of colonization, attempts at homogenization of a Mexican identity [and erasure of Indigenous identities], and their current relation to the Mexican state. TribalCrit offers a way to understand the experiences of those living in this liminal space where a simple binary of White/Black does not apply. For Campesinos/as the intersection of class, race, and Indigenous identity comingle to marginalize their social status [51]. For Campesinas, gender also intersects with class, race, and Indigenous identity to create further harm to their persons [51]. What I had

witnessed at work in México was the marginalization of Campesinos/as to a liminal space created by these intersections. This liminal space reflects contradictions in, for example, the societal appreciation for handmade tortillas, but racism toward the very people whose hands grow the corn and make the tortillas—those with darker skin, speaking Indigenous languages. The writing of critical race theorists Moreno Figueroa, Crenshaw, Solórzano and Yosso, and TribalCrit scholar Brayboy, helped me understand and articulate the unique positions of Campesinos/as in my representations of their experiences and perspectives.

7. Narratives of 'Development' as Sites of Struggle

In my interviews with promoter guides, I asked what motivated them to do this work. Mariana said, "Yeah, well, what are we going to do? Sometimes we do not have money when we do not have a crop to sell . . . Here, flat out, we have no resources, we have no salary, or government cheque, we are Campesinos working in the fields." [20] (p. 146). She talked about the loss of crops by many in her community due to the recent drought, and their strategy of raising chickens, pigs, and growing home gardens to feed her children. She also said the women in her group are very motivated to find ways to continue their lifestyle. She explained, " . . . If we look for work outside, who is going to take care of our children?" [20] (p. 146). It is important to explain that those I interviewed came here on the promise of government land grants, from other states in México where they had also led a Campesino/a lifestyle, living off the land. Mariana showed me that while continuing this lifestyle may be a choice, within this lifestyle, there are things that are not choices: working hard to grow and raise food. Mariana made clear that she was aware of the choice to leave and look for work, but that she would not have anyone to care for her children if she did. My reflexive notes on the day I interviewed Mariana included these reflections.

> Talking to a friend at home today, I found it hard to translate what I am learning here. How do I explain the Campesino/a lifestyle to 'modernized/urbanized' people who might conceptualize it as a sacrifice, as a giving up of things. I told her that maybe it is closest to the idea of 'homesteading' but it isn't the same. There isn't the same cultural family history [in homesteading]. This is really Indigenous people carrying on their traditional lifestyle, despite the struggles they meet. Why do we think about 'development' as empowering women to work outside the home, when this is not what they want? The women I spoke with here don't want to leave their families to work. Here, working in the city, or in town would mean leaving their community and giving up the raising of their children . . . [37].

In the reflexive note above, I identified discourses of 'development' as a site of struggle between 'Western' conceptions of living and those of Campesinos/as. Understanding the history and goals of the project of 'development' was a significant site of learning in my research process. The marginalization of Campesinos/as is bound up in the history of the 'development project' and current power structures that reinforce settler state control to define what 'development' means.

When I researched the history of 'development' in México, I came upon post-development scholars who characterized the 'development project' as imperialist and an active continuation of the colonial project into the post-colonial era [52]. They identified the process of labeling a country as 'underdeveloped' as a process of "naturalising the norms and historical processes of the European Self" [53] (p. 2551). Post-development theorists understood the development project as an unjustified intervention in the lives of those who were deemed as 'less developed'. They trace the origin of 'development' back to a speech by Harry Truman made in 1949 wherein he called for the more developed countries of the world to solve the problems of underdeveloped countries, thus dividing the countries of the world into a hierarchical binary that reproduced the colonial relations of the previous historical period [52,54,55]. For example, in Truman's speech the people of 'underdeveloped' nations were characterized as suffering poverty because of primitive and stagnant economic policies and those from more 'advanced' nations had a moral obligation to help [54].

This helping was done with the assumption that the helper knew the best solution for the 'helpless' [56]. This highlights the reinforcement of the hierarchies of knowledge in the export of Western/Euro-American conceptions of development. If we are to take an anti-racist approach to sustainability, we must continue to challenge still active concepts of underdevelopment as fictions created to perpetuate hierarchies.

Particularly relevant to a Campesino/a population today is the project of development's perpetuation of hierarchies constructed at the time of colonization including, the privileging of 'Western' knowledge over other forms of knowledge, urban over rural, white over other races/ethnicities, men over women and 'Western' forms of pedagogy over other forms [3,4]. For Campesino/a populations in México, the project of development manifested in a campaign to modernize the countryside through Green revolution agriculture technologies and practices which, it was thought, would lead to the disappearance of the peasantry [57]. It was predicted that through modernization Campesinos/as, who were considered inefficient producers, would either become modernized farmers or become the working class as they entered the capitalist system through wage labor [5]. This prediction was false. In Latin America alone, an estimated 65 million Campesinos/as continue to live from subsistence farming and 'petty commodity' production [58].

In my field experiences, I began to recognize narratives of 'underdevelopment' in rural development programs designed by the federal government that perpetuated hierarchies of knowledge and maintained a paternalistic relation with Indigenous communities. For example, several initiatives designed to give Campesinos/as what was considered by the federal government to be a 'dignified life' did not make sense in the context in which Campesinos/as were living. One example among many in Calakmul was the installation of flush toilets in a region with severe and increasing issues with drought, and lack of access to clean drinking water. Campesinos/as I interviewed did not have access to enough water in the dry season for drinking, washing, and watering gardens, let alone for flushing toilets. Standing water in flush toilets was also identified as a potential breeding ground for mosquitos carrying malaria. Another example is the installation of cement block houses with metal roofs under the banner of a 'dignified life', when Campesinos/as in this region prefer their traditional housing with thatched palm roofs and mud/clay walls because they stay cooler in the extreme heat of the region. This top-down rural development approach shows ignorance of the geographies and social realities of the area and a disregard for local knowledge. This example highlights how the Mexican government continues to work in a paternal relationship with Indigenous communities. If the goal of 'development' is a 'dignified life', multiple ideas of what constitutes a dignified life must be considered based on the social, geographical, and cultural context of each area.

Langdon suggests that decolonizing 'development' would need to include decolonizing the minds of many, and "moving from patronising, colonising interventionist approaches to a much more mutual process . . . " [59] (p. 387). He points out that moving to action through mutual, collective processes involves changing the "very process of engaging in such action" and destabilizing "power dynamics of whose knowledge counts." [59] (p. 387). In the case of CaC, the way that it operates to build networks of mutual knowledge sharing and support among Campesinos ensures that education aligns with their chosen way of life as Campesinos/as. This contrasts with continuing narratives of 'underdevelopment' that were perpetuated through rural development programs in this context. Learning about narratives of 'development' and their origin shifted my perspective and brought forth questions about who is expected to learn and who is expected to change in our goals for sustainable 'development'.

8. Uncovering Latent Assumptions about Education

As a scholar of education, I wanted to understand how CaC pedagogy facilitates an atmosphere of cooperation, sharing, and co-creation of knowledge which facilitates the development of protagonism among peasants [13,14]. As a student of Western/Euro-American educational theory, I began by reading 'Western' social learning theories. I recognize this

now as the wrong approach. This learning was sparked by reading Mignolo [60], who helped me to recognize that the social learning theories I was exploring were 'Western' social learning theories that were based on observations of European or American educational settings and should not be universally applied. As Dei, reminded me, cultures differ in their approaches to learning and education [10]. This learning was a process that evolved over time and was influenced by many different experiences. I highlight a few of these here.

After reviewing and finding resonance with several 'Western' learning theories including self-determination theory [61], modeling and role modeling theories, various theories of agency [62–64], and Freire's consciousness-raising education [31], I attended a course in Cuba on CaC methodology in 2017 and was left with a sense that these theories didn't fully represent what was at play in CaC pedagogy. Conversations during field experiences revealed my biases that were shaping how I approached my analysis. This reflexive field note, during my first visit to the area where I began my research reflects a shift in my understanding of CaC.

> Today, it was made clear to me that CaC pedagogy is operating all the time on an informal basis. Of course, Campesinas/as are sharing knowledge with each other as they learn from their practice. Today I was told a story of one community member in Calakmul who had taught over 70 other Campesinos/as how to produce honey organically. The Campesino who told me this story, also said "hace falta un facilitator" [what is missing is a facilitator]. He saw a need for a facilitator in organizing this sharing of learning on a larger scale. He explained that there could be so much more done with the help of a facilitator [65].

I acknowledged at this moment that I had inadvertently assumed that CaC was a program of some kind with a beginning and an end with someone (possibly external) who was in charge. I had been thinking of it in the same way as one might think of school from a 'Western' perspective. Through conversations, on this day, I realized CaC, as a term, may be an attempt to formalize or define pre-existing cultural ways of sharing knowledge. After this conversation with a veteran Campesino promoter of agroecology, I saw the role of the facilitator as one of encouraging further elaboration and organization of preexisting cultural practices. What I had missed, was the recognition that the educational practices of CaC were already in these communities.

Looking back, it was alarming for me to realize that this blind spot still existed despite my training in Cuba on the CaC methodology where facilitators explained that agroecology knowledge and practices do not need to come from outside but can be generated collectively within the community. This demonstrates how engrained colonial thinking can be. I was using Western/Euro-American theories to evaluate other cultures [10]. Recent scholars have pointed out that despite efforts to decolonize methodologies, most research in social science is structured by the limits of 'Western' ontologies [66], through a lens that makes results "perceptible or legible to scholars who are thinking about the world exclusively through Western ways of knowing [19] (p. 20). With this understanding came the realization that I needed to look for learning theories that did not originate in the 'Western' tradition to understand CaC. Unfortunately, although the reflexive note shared above was taken early in my field experiences, its importance did not fully translate into practice until after I had completed my dissertation. It was not until more recently that I turned to theories around Indigenous ways of teaching and learning to better understand how CaC reflects cultural ways of sharing knowledge.

Although Campesinos/as I interviewed were from two different Indigenous cultures (Cho'ol and Tzeltal) and some did not identify as Indigenous, they were all living a Campesino/a lifestyle of subsistence farming in Indigenous communities. Although ways of teaching and learning are different in different Indigenous cultures, several scholars of Indigenous education have put forth elements of Indigenous Education that they believe are common to Indigenous populations of the Americas. I share one example here that has particularly strong resonance with CaC pedagogy.

Tewa philosopher Greg Cajate in his book Look to the Mountain: An Ecology of Indigenous Education [17] describes various elements of Indigenous education that align with CaC. To illustrate synergies, I have chosen a few elements to highlight. Cajate describes Indigenous education as, "learning about life through participation and relationship in community, including not only people, but plants, animals and the whole of Nature ... a communally integrated expression of environmental education" [17] (p. 26). The communally integrated quality of Indigenous education aligns with CaC's participatory approach where Campesinos/as learn together and problem-solves through action and reflection on issues in their communities. Important to the discussion of decolonizing education for sustainable development is Cajate's statement that "each person and each culture contains the seeds that are essential to their well-being and positive development" [17] (p. 29). The way CaC situates knowledge and expertise in the community rather than with outside experts shows an enactment of Cajate's statement. If each Campesino/a is the protagonist in their own learning story, then the facilitators' role is fundamentally different from an "extension officer" or a teacher, bringing knowledge to others. Facilitators in CaC facilitate, or make easier, the process of knowledge sharing between peers. This results in learning and implementation of agroecology practices that are unique to each person in relation to their own land and experiences, and their own sustainability. This is fundamentally different from a view of education, or agricultural extension, where the solutions are created by an 'expert' outside the community, who is coming to teach Campesinos/as about what sustainability should look like.

In teaching agroecology, CaC aligns with Cajate's conception of Indigenous education by promoting farming in relation to nature and teaching "a way of life that sustains both the individual and the community" [17] (p. 30). Importantly, agroecology is said to be, based on Indigenous farming practices. In a review of literature on agroecology in México, authors describe the emergence of agroecology as a science in the 1980s and 1990s, as the result of Mexican agronomic scientists being inspired by traditional Indigenous peasant farming systems observed during intense fieldwork in the 1970s [67]. Taking this history into account, CaC can be seen as working to rescue, revitalize and share practices and knowledge traditional to this region that may have been eroded through processes of colonization and the project of modernizing agriculture.

9. Summary of my Learnings

Although my journey in understanding CaC as an anti-racist pedagogy has just begun, what I have learned, so far, is that CaC can be understood as anti-racist in its facilitation of the empowerment of Campesinos/as to work toward their own version of sustainability. To be anti-racist, education, including education for sustainability, must value diverse cultural knowledge and be culturally rooted to be relevant for learners [10]. By centering Campesinos/as as protagonists, CaC values diverse cultural knowledge and ways of teaching and learning that originate in each context where it is practiced. By working through peer relationships CaC sets up fundamentally different ways of teaching and learning from that of traditional agricultural extension. Although there may always be a power imbalance between those who have the knowledge and those who want to learn, the balance of power between those who consider each other to be peers is importantly different. Peers assume competence in each other; thus, the relations of power are more balanced. Each has something to learn from the other. CaC operates in ways that assume and build the power of those who have been marginalized by dominant systems.

CaC makes empowerment real, not by giving or lending power, but by assuming it is already there. This power is predicated on a fundamental belief by the facilitating organization in the capacity of Campesinos/as as holders of knowledge that will lead them toward self-sufficiency. This knowledge is not based on an abstract concept of 'development' created far away, but on knowledge and experience of the local context that is needed for building sustainable livelihoods in this context. This valuing of Campesino/a knowledge and expertise is unique in a society that continues to treat Campesinos/as as

"less than". To move toward anti-racist approaches to education for sustainability we must interrogate the history of 'development' and how it affects our conceptions of who has the expertise to decide what sustainable development looks like. By teaching agroecology, CaC contributes to the revitalization and learning of traditional Indigenous agricultural practices and knowledge that may have been erased through colonial processes.

This paper illuminates researcher reflexivity as crucial in the process of decolonizing research and transitioning to anti-racist approaches to education and sustainable development. I shared the story of my learning journey to demonstrate how my white privilege and unexamined biases limited my understanding and representation of CaC and the perspectives of my research participants. My experiences unsettled the hegemony of 'Western' knowledge in my own thinking and led to moments of epistemic friction that gave me pause. In these pauses, I opened my mind to new ways of understanding CaC pedagogy. This matters because I am now able to recognize and interrogate systems that continue to marginalize Campesinos/as and can work to bring their knowledge and perspectives to discussions of education for sustainable development where 'Western' discourses are still accepted as the norm.

Through reflecting on my research journey, I have learned several ways that researchers can unsettle the hegemony of 'Western' knowledge and revalue marginalized ways of knowing and being. First, learn about the colonial history and social relations of power (race, class, gender), that affect each context. My learning journey reinforced that racism operates differently in each political, cultural and historical context and is greatly influenced by colonial histories. Learning this critical context is especially important in cross-cultural situations to understanding the perspectives of participants and communicating their interests and aims. CEE as a methodology was helpful in guiding me toward understanding the critical context including how racialization, gender, class, Indigenous identity, and narratives of 'underdevelopment' influence the daily lives of Campesinos/as. These understandings can be used to transform public perception about Campesinos/as and "interrupt and reframe the victim-blaming mantras" [47] (p. 169).

Second, consider the history of research itself and how it may perpetuate colonial relations of power. Learning about and reckoning with the histories of anthropology, forced me to consider every step and decision in my research process in a new way. To decolonize our research methodologies, we must interrogate the history and purposes of research and find ways to involve subjects of research in all stages of design and elaboration of study so our research can be in a reciprocal relationship with participants. Part of this learning involves navigating the privilege of doing research and offering our labor as researchers in reciprocity for the efforts of our participants. Changing the research relationship to one of collaboration revalues the knowledge and expertise of participants and moves research away from its extractive history.

Thirdly, expand and shift the scholars we consider in our analysis. Engaging with scholarly work that originates outside dominant 'Western' ways of knowing is necessary to understanding diverse manifestations of sustainability and education for sustainability. The exercise of trying to make CaC fit into 'Western' theories of teaching and learning was useful in the sense that it allowed me to see where CaC was different. Encountering decolonization theory forced me to consider that my attempt to explain CaC through 'Western' social learning theories was perpetuating the imperialism of Western/Euro-American knowledge. I had fallen into the unconscious pattern of assuming that 'Western' knowledge is universal, and in doing so neglected to consider ways of teaching and learning as they are understood in other cultures.

As I shared at the beginning, this is only a part of my story, and my learning journey continues. As a white settler scholar, I have much to learn and reckon with, but through the sharing of my reflections, mistakes, and limitations, I invite others to also engage in reflexive practice. As Fortier writes, "the responsibility of non-Indigenous peoples to engage in self-reflexive and critical actions and research around their own relationships to colonialism

and the process of decolonization is important in the development of self-determining relationships of solidarity" [19] (p. 22).

Notes

1   For a detailed discussion of the term settler see Barker, 2009.

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Alaska Native Subsistence Rights: Taking an Anti-Racist Decolonizing Approach to Land Management and Ownership for Our Children and Generations to Come

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Abstract: The colonization of Indigenous Peoples in Alaska was based on racism and founded the current systemic racism, discrimination, and marginalization they experience today. Land stewardship was in the hands of Indigenous Peoples, and through colonization their land and rights to steward that land were taken away. This paper is based on a participatory research project conducted in partnership with the Ninilchik Village Tribe (NVT) in Alaska utilizing ethnographic futures research scenario storytelling through Indigenous methodologies. Scenario interviews with community members explored land-based understandings of Indigenous sustainability and the roles that subsistence, food security, and food sovereignty have in maintaining sustainability and cultural continuity for children in the future. Due to state and federal land and water management practices, Alaska Natives are limited in their abilities to practice subsistence and steward their lands. An anti-racist approach to decolonizing land management and ownership is key to Alaska Natives regaining control of their subsistence rights for food security and cultural continuity for future generations. This paper speaks to policy makers, explaining the current racist and colonial situation and suggests an antiracist and decolonizing path forward through respecting Tribal sovereignty, prioritizing Indigenous-led stewardship, and giving land back to the Alaska Native Tribal Nations.

Keywords: subsistence; food security; food sovereignty; Indigenous; Alaska Native; anti-racist practice; decolonization; land management; land stewardship; futures; land back

1. Introduction

The Indigenous Peoples[1] of what is now called Alaska are comprised of 231 federally recognized Tribes and, at a minimum, speak 20 different languages [2,3]. Alaska Natives[2] were colonized first by the Russians and then by the United States. This colonization was based on racism and founded the current systemic racism, discrimination, and marginalization Alaska Natives experience today [4–7]. Colonization of Alaska Natives through slavery, war, boarding schools, land grabbing, and diseases were just some of the atrocities which led to lasting historical trauma, as well as land, culture, and language loss in Indigenous communities [8–11]. Although colonization is practiced in new ways, not currently through slavery and war in Alaska, it is an ongoing process [12]. Alaska Natives were colonized and continue to live under colonization due to there never being a decolonization process, their colonizers never leaving and maintaining control of the government, and ongoing settler colonialism [13].

Land stewardship (now management and ownership[3]) was in the hands of Indigenous people for thousands of years, and through colonization their land was taken as was their rights to steward that land [15,16]. Efforts to rectify this are few and far between and in Alaska most traditional Indigenous lands and subsistence rights are now under state and federal jurisdiction [17,18]. Land management changed from the Indigenous relational perspective of stewardship to one of development and economic profit [4,5,14]. These racist colonial practices have led to the mismanagement of the land, water, fish, and wildlife

populations, unequal co-management policies, and lawsuits as Alaska Natives assert their rights [19,20]. Co-management and the Federal Subsistence Board [21] offer some space for Alaska Natives to have a voice in management, but this paper seeks to take an anti-racist approach [22], decolonizing land management practices and exploring Indigenous understandings of land and subsistence stewardship and recognition of subsistence rights.

This paper seeks to address the current racist and ongoing colonization practices involved in land ownership and management in Alaska, and how that affects Indigenous subsistence rights and their ability to pass on their culture to their children, grandchildren, and future generations. In this paper, I address the racialization of Alaska Natives and the colonization and racism they experienced and continue to experience. I next explain the current land ownership and management practices in Alaska. I detail the problems resulting from a lack of recognition of Tribal sovereignty and no government-to-government relationship with the state, as Alaska does not recognize the 231 Indigenous Tribal Nations[4] even though they are federally recognized Tribes [23,24]. My case study highlights perspectives of Ninilchik community members on current land ownership and management practices and how that affects subsistence and Ninilchik Village Tribal members being able to live sustainably and pass on their culture to their children, grandchildren, and future generations. It brings forth the Indigenous Knowledge they have around sustainable land stewardship practices based on a relational understanding of the world and thinking of the survival of future generations, and the central roles the Tribes can be playing in this regard. Finally, this paper speaks to legislators and policy makers on how they can take anti-racism decolonial approaches to land to protect Indigenous subsistence rights through, (a) acknowledging Tribal sovereignty and recognizing Tribes, (b) respecting Indigenous Knowledge and prioritizing Indigenous stewardship of the land and waters, and (c) engaging in the land back movement as Indigenous Peoples had their land stolen.

2. Situating the Researcher

As I am both Indigenous, and work with Indigenous people, I make sure to situate myself in my work. I address power relationships, introduce myself, demonstrate my respect to all those who participate, engage in reflexivity to understand my positionality and relationality, and understand the colonial history that brought us to where we are today [25,26]. My name is Heather Sauyaq Jean Gordon. My Iñupiaq name is Sauyaq. I was named after my paternal grand aunt, who upon her passing, my grandmother gifted me her name. Sauyaq means drum, and through my work I seek to continue the heartbeat of the Indigenous drum, making sound to advocate for Indigenous rights. I am Iñupiaq and Euro-American; however, I was raised outside Homer, Alaska on a reindeer ranch, growing up learning Iñupiat Ilitqusiat (Iñupiaq values). I am an enrolled member of the Nome Eskimo Community, a federally recognized Tribe in the U.S. I grew up learning how the Iñupiaq side of my family experienced and continue to experience colonization through such practices as forced boarding school, assimilation education, and Jim Crow racism. These atrocities directly happened to my family, and my being here demonstrates their great resilience and ability to survive. I seek to honor my ancestors through my work and provide this explanation of my background to the reader so that they understand that I approach research in a respectful way and will advocate for Indigenous rights.

3. Racialization and Racism: The Colonization of Indigenous Peoples in Alaska

Alaska Natives have been seen as a separate race by their Russian and American colonizers since first contact. They had a darker skin color and appeared physically different from colonizers which colonizers believed made Natives intellectually, culturally, socially, and physically inferior, justifying different and unequal treatment and oppression of the Natives [6,7]. Racism was first inflicted by the Russians as they colonized Alaska in 1741. They exploited the land and resources, waring and enslaving the Indigenous populations they encountered, seeking to acculturate and assimilate the Natives through education, religious conversion, and marriage [9,10,27].

The U.S. purchase of Alaska from Russian in 1867 [28] led to continued slavery and mistreatment [29]. In 1884, Christian missionaries and the U.S. federal government took over education from Russian Orthodox missionaries [30] and set out to "civilize" the Alaska Native populations by getting rid of their cultures, languages, and traditions [9]. Richard Henry Pratt, who founded the Carlisle Indian boarding school, is famous for saying, "Kill the Indian in him, and save the man." Indigenous students at U.S. boarding schools were beaten, punished, underfed, and sexually abused; many children died from this while still others died of diseases [8,11].

The U.S. continued the racialization of Native people through blood quantum which they used to justify racist policies such as school segregation and land ownership [31]. The history of blood quantum goes back to treaties made with Native people in the 1800s where Native people were described as "half-bloods" and was continued during the Allotment Period, 1887–1934, where "full-bloods" were considered incompetent to conduct business [32]. In 1905, when the *Nelson Act* was passed [33], Alaska youth were required to attend public schools. This was when the Alaskan Jim Crow era took hold and "white children and children of mixed blood who lead a civilized life" were able to go to one school and Natives of pure blood had schooling separately [34]. Being civilized often meant they spoke English. The second *Organic Act* in 1912 [35] codified the racially segregated school system which remained segregated until Alaska became a state in 1959 [9]. When the *Indian Reorganization Act* (IRA) came to Alaska in 1936 [36], the Bureau of Indian Affairs built lasting systemic racism into Alaskan Tribes, guiding them through creating their governing documents and making Tribal enrollment based on blood quantum [31].

The *Alaska Native Claims Settlement Act* (ANCSA) of 1971 continued systemic racism in Alaska, allowing only people of $\frac{1}{4}$ Native blood to sign up as shareholders in the new regional corporations [15]. The *Marine Mammal Protection Act* (MMPA) of 1972 created additional systemic racism as Alaska Natives had to be $\frac{1}{4}$ Native blood to harvest marine mammals and work with the marine mammal products [37]. When marriages result in a child under $\frac{1}{4}$ blood quantum, the child is unable to hunt for subsistence or work with animal skins or ivory [38]. This restricts Alaska Native families from passing on their culture to children that are "not Native enough" and raises issues of food insecurity and food sovereignty. Today, no Indigenous person in the U.S. can escape blood quantum as it is required to get a Certificate of Degree of Indian Blood card if Natives want to be eligible for a variety of types of assistance required from the U.S. due to treaties [39]. Blood quantum describes who is considered "Indian," separating them from Whites and further promoting a White dominated racial order in the U.S.

While blood quantum continues to systemically racialize Natives, identifying Native people solely as a racial group ignores their inherent sovereignty as self-determining Tribal Nations and communities that are separate governments from U.S. state and federal governments [40]. For Alaska Natives to have a government-to-government relationship with the federal government, they need to be federally recognized, and listed as Tribes on the Department of Interior's *Federally Recognized Tribes List Act of 1994* to qualify for aid required from the U.S. under existing treaties [2,18]. All Native Peoples in Alaska were not traditionally Tribes but instead many consisted of bands and families, and this formation of Tribal governments according to the IRA is yet another method of colonization that Native peoples had to adhere to if they wanted to have the government-to-government relationship with the federal government to get their rightful benefits from treaties. In Alaska, this is further complicated due to Alaska Supreme Court decisions and Governors of Alaska not recognizing the existence of Tribes and Tribal sovereignty [18].

Racism in Alaska has been recently explored in a study by the Alaska Advisory Committee to the U.S. Commission on Civil Rights [41]. The study was prompted by an atrocity in which three youth in 2001 videotaped themselves shooting Alaska Natives in Anchorage with frozen paintballs. In the study, the director of the Anchorage Equal Rights Commission noted the systemic racism issues and Alaska Native people provided testimony about racism in Alaska. Patten of the Copper River Tlingit stated that "Apartheid

is a very real thing here in Alaska." Panelist Savland of the Alaska Native Coalition for Employee Training explained how the State neglects Alaska Natives, "In light of such wide disparities between the wellbeing of Natives and the wellbeing of other Alaskans, one might expect the state of Alaska to be sufficiently concerned . . . state policy, controlled by the urban non-Native majority, turn against Natives with a vengeance . . . the state is making political war on the poorest and most vulnerable of its citizens defined by race."

This background explains how racism was built into colonization practices from the start. Racist policies sought to destroy Indigenous cultures and assimilate Indigenous children. This racism was codified into legislation that is still in practice today. ANCSA and the MMPA both utilize blood quantum and the MMPA prevents Native families from passing on their culture to their children if they are not Native enough [15,37]. This racism and colonization are embedded into land ownership and management which further limits Indigenous subsistence rights that will be explained in the next section.

4. Alaska Land Ownership and Management

As explained in the section above, Indigenous Peoples had their lands taken through colonization. Colonial settlers looking at the land believed it to be untouched and in a natural state [4]. However, Indigenous Peoples did not just hunt and gather on their land, they stewarded it for thousands of years before it was taken from them [42]. Colonial settlers considered Indigenous Peoples incapable of managing land as they were not using it for profit generation and resources extraction [4,5]. Indigenous stewardship approaches to the land are relationship-based through seeing all life as sacred and seeking sustainability through connection with the natural world [14]. This stewardship has been found to be a more successful than Western management with less species and ecosystem decline [43]. Regardless, colonizers took over land management, using Western scientific models and ignoring Indigenous Peoples' Knowledge and sovereignty, leading to a lack of sustainability of the fish, wildlife, and plants and concern for the survival of future generations resulting in issues of food insecurity for Indigenous people relying on the land and water for food.

In Alaska, the federal government had been claiming land without compensating the Alaska Natives who lived on the land since the U.S. purchase from the Russians [28], and with statehood in 1959 [44], the State of Alaska started claiming land as well [45]. Both state and federal land claims overlapped Native traditional lands which became problematic when oil was found in Alaska. At the urging of Alaska Natives, U.S. Secretary of the Interior Udall, instituted a land freeze so that the land claims could be settled [18]. Alaska Native leaders, the state, and the federal government worked to craft ANCSA in 1971 [15]. Due to the pressure to quickly pass the legislation, to develop oil and additional disagreements about subsistence, there were no subsistence protections in ANCSA, and it removed all subsistence rights. Alaska Natives ended up with only 10 percent of Alaskan land, a loss of 90 percent that they had held since time immemorial. The land Alaska Natives received was held in fee simple private ownership through the formation of twelve regional for-profit corporations and additional village corporations with no land given to the Tribal Nations.

While some Alaska Natives saw the corporate model as a way to transition Natives into "modern economic society," other Natives found the corporate structure to be another form of assimilation and colonization [46]. ANCSA extinguished all prior reservations in Alaska except for Metlakatla [15]. In addition to receiving 10 percent of Alaska land in checkerboard fashion, the regional corporations were paid a settlement of $962.5 million USD which Congress said was to meet the "economic and social needs" of the Natives in Alaska; not basing the money on the value of the land the government was taking [47]. Unlike land in the contiguous U.S. being held by Tribes, Tribes were not included in ANCSA, and there was no mention of Tribal sovereignty [46].

Due to ANCSA removing subsistence rights, Alaska Natives lobbied to regain these rights, and in 1980 Congress passed the Alaska National Interest Lands Conservation Act (ANILCA) [15,17]. Multiple non-Native lobbies in Alaska pushed for a lack of ethnic or racial preference, resulting in ANILCA Title VIII which did not give Alaska Natives

specifically subsistence rights but gave subsistence rights to all rural residents in Alaska [17]. Urban residents could still practice subsistence on federal lands unless there were shortages in species populations. ANILCA was challenged by the state of Alaska in 1989 [18]. The Alaska Supreme Court ruled in *McDowell v. State of Alaska* that giving a rural preference was unconstitutional under the Alaska constitution [48]. With this decision, Alaska was not complying with a federal act, so the federal government took over the management of fish and wildlife on federal land in Alaska in 1990 which over the years expanded to include fisheries on federal lands and waters as well under use by federally qualified subsistence users [18]. Federal public lands are approximately 60 percent of Alaska. The state regulates residents and nonresidents on state land (30 percent of the state). The remaining 10 percent is privately owned which includes 40 million acres of land owned by Native regional corporations and villages which is oddly not under the federal rural subsistence priority.

With federal and state jurisdiction covering approximately 90 percent of the land in Alaska, Alaska Natives organized a variety of subsistence organizations around whales, seals, walruses, polar bears, birds, and other subsistence animals so that Alaska Natives could sit at the table in discussions over harvest and protection since their survival depends so heavily on subsistence [18]. However, co-management is problematic and often pits Indigenous cultural interests and food security against economic land use interests of the federal or state government [4]. There is also often a lack of meaningful engagement and inclusion of Indigenous Knowledge and stewardship perspectives [49].

Adopting an Indigenous-led stewardship approach moves away from any exploitation and truly puts the land, water, plants, fish, and animals first, as we/they view them as nonhuman relations [50]. Approaching geese, for example, as nonhuman persons instead of manageable wildlife changes the approach to one of respect, co-existence, and personhood instead of one where humans are dominant and managing other populations. This is Indigenous Knowledge, and it takes a very different approach from Western science. For example, the approach to hunting is not one of taking the animal by force, glorifying the hunter as they hold up the animal's head to display its large antlers, demonstrating the mastery of the animal by the hunter. No, the Indigenous approach to hunting is again relational and is a reciprocal exchange between the human and the animal who has personhood, with the animal choosing to give themselves to the hunter and the hunter then honoring that sacrifice and taking the animal [51]. If non-Indigenous people would accept this approach as factual and acknowledge Indigenous Knowledge, this would greatly change how land is "managed."

The Alaska specific, Federal Subsistence Board (Board) is a space in which Alaska Natives are supposed to have an opportunity to participate in managing their subsistence rights. Prior to 2012, Alaskan rural subsistence users were not on the Board and there was not a Tribal consultation policy. Now rural subsistence users, not necessarily Alaska Native, sit on the Board, and the Board also holds Tribal consultations [21]. In addition to two public members, Alaska directors of the U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, Bureau of Indian Affairs, U.S. Forest Service, and a chair make up the Board. While Alaska Natives are often on the Board, they are the minority and easily outvoted by those without Alaska Native community ties.

The Board regulates species not already regulated through co-management and determines which communities qualify as rural with rights to harvest on federal lands. The definition of rural the Board has determined as of 2015 leaves out some communities with Alaska Native residents that depend heavily on subsistence as both their cultural practices and heritage as well as for food security, such as those in Juneau and Ketchikan [52]. Additionally, if a rural preference is in effect, then the many Alaska Natives who have moved from their rural communities to urban cities and travel to their rural home areas to do fish camp in the summer or hunt or gather are actually not always allowed to legally. In addition to the Board, ANILCA created ten Regional Advisory Councils which are composed of subsistence, commercial, and sport users who can make recommendations and proposals to the Board to help serve their populations' needs [17].

The State of Alaska has just recently taken an additional racist approach to land management as they sued the Board in 2020 based on special action decisions made during the COVID-19 pandemic that privileged rural subsistence communities with food insecurity, in this case, Alaska Native communities [53]. The lawsuit sets out to remove the rights of the Board to work with rural communities to make sure they have the food they need. A statement made with the support of multiple Alaska Natives said, "Though we carry thousands of years of highly evolved, data-driven and intact Indigenous Knowledge ... we have faced tremendous obstacles. These obstacles sanctioned through structural racism and perpetuated by the institutions have prevented us from managing the land in a way we know best supports holistic and systemic health as demonstrated by the abundance present in Alaska prior to colonization" [54]. The Organized Village of Kake, one of the communities the Board gave emergency subsistence rights outside of normal seasons also joined the suit on behalf of the Board. They interpret the State's actions as directly attacking the rights of a sovereign Tribe to provide food for their community.

5. Case Study: An Anti-Racist Decolonizing Approach to Land Management and Ownership for Our Children and Future Generations

5.1. Research Site

This case study is part of my PhD dissertation research in partnership with the Ninilchik Village Tribe (NVT) in Ninilchik, Alaska, a federally recognized Tribe and Board designated rural community. NVT has over 900 members worldwide with approximately 15 to 20 percent living in the Ninilchik area (personal communication with NVT Executive Director Ivan Encelewski, 21 August 2018). NVT is a diverse Tribe due to the intermarriage policies Russians practiced during the fur trade, the waterways Ninilchik is on, and liberal enrollment policies. NVT is comprised of Dena'ina people who originally lived in the area as well as Ahtna, Yup'ik, Alutiiq/Sugpiaq, people from Native American Tribes from the contiguous U.S., and Native Hawaiians who have moved to the area [55]. Ninilchik had a population of 749 as of 2018 when I started this project [56]. They are on the Alaskan road system, and the Board considers them a rural community. NVT and I set out to conduct a project to understand the role self-determination played in sustainability[5] and wellbeing in the community. During this project, I conducted ethnographic futures research story-telling scenarios with 30 people chosen by NVT, please see Table 1 for the demographics of the participants.

Table 1. Demographics of participants.

Category	Project Participants	
	Number	**Percentage**
Participant Population	30	100%
Age (participants were 26 to 79 years old)		
25–34	7	23%
35–44	4	13%
45–54	6	20%
55–64	8	27%
65–74	3	10%
75+	2	7%
Sex		
Male	11	37%
Female	19	63%
Tribal Affiliation		
Ninilchik Village Tribal Member	21	70%
Not a Ninilchik Village Tribal Member	9	30%

Table 1. *Cont*.

Category	Project Participants	
	Number	Percentage
Employment		
Work for the Tribe	17	57%
Work Elsewhere	9	30%
Retired	4	13%
Where Raised		
Ninilchik	16	54%
Alaska-not Ninilchik	7	23%
Contiguous U.S.	7	23%
Education		
Some High School	1	3%
GED	2	7%
High School Diploma	4	13%
Certified Nursing Assistant	2	7%
Trade School	3	10%
Some College	7	23%
Associate's Degree	2	7%
Bachelor's Degree	5	17%
Master's Degree	4	13%
Ethnicity (self-identified)		
Russian-Alaska Native-European/white (Alaska Native included Dena'ina Athabaskan, Aleut, Alutiiq/Sugpiaq)	12	40%
Russian-Alaska Native (Alaska Native included Dena'ina and Aleut)	4	13%
Alaska Native (Alaska Native included Athabaskan and Alaska Native in general)	2	7%
European/white	7	24%
European/white-Native American (tribes from the contiguous U.S.)	4	13%
European/white-other	1	3%

5.2. Theoretical Framework and Methods

It was very important to me to take an Indigenous approach to this project, something that would not carry on any racist or colonial legacies. In this regard, I did not design the study prior to approaching the community, but instead reached out to the NVT and asked if they would be interested in working with me. Over the next 12 months, we built a relationship with one another, and they assigned me a Tribal employee to work with to develop the project to explore Indigenous self-determination and the role it played in achieving sustainability and wellbeing [57]. We settled on the method of ethnographic futures research (EFR) [58] which was used through an Indigenous relational theoretical framework [59] to be in alliance with Indigenous methodologies by being participatory [57], reflexive, asset-based [60,61], engaging in co-production [62], engaged with free, prior, and informed consent as outlined in the United Nations Declaration on the Rights of Indigenous Peoples, and a space for storytelling and trust building [57,63].

The method, EFR, is a scenario methodology that goes over three possible futures, with each interview participant, the optimistic, pessimistic, and most likely futures. These futures were set in 2038, 20 years from the time of the interviews in 2018. The participant is put in the future and then they 'backcast' through looking back over the last 20 years to see how they got to the future they were in, 2038. Backcasting is important in working with Indigenous communities as making projections about the future through forecasting

is often something Indigenous cultures are not comfortable with [64]. In the final part of the interview, participants identify their role in helping their community to achieve the optimistic future they had outline. For a full explanation of the methods, please see Gordon, 2021 [57]. The participants described futures that addressed subsistence, land stewardship, regulations, and sustainability [57]. Looking at how they described this in the optimistic versus pessimistic or most likely futures helps identify what the community needs and wants, what they fear and are trying to avoid from the pessimistic future, and how to surpass the most likely future to reach the optimistic future for their community.

Indigenous methodologies emphasize that engagement with the community does not only happen prior to the project or during the project. Engagement also happens through dissemination and in this project along with academic products I produced a 20-year roadmap for Ninilchik outlining what the participants explained in the scenarios as what they wanted for the future of their community. This was part of the Indigenous relational theoretical framework which was developed through my master's research on how to build mutually beneficial trusting relationships in research between Indigenous communities and researcher [65] and was part of my part of maintaining a reciprocal relationship with the community [66]. I used this framework to build my relationship with NVT and also used it to adapt EFR to be in alliance with Indigenous methodologies. This framework emphasized:

> Knowing extensive community history, developing strong local contacts, communicating openly about the project, treating the community members as equals, displaying [culturally appropriate] manners and etiquette through honesty and reciprocity, acting ethically in [I]ndigenous cultures . . . exchanging knowledge to build . . . capital, and giving project results to the community so they can be put to practical use. ([65], p. 237)

EFR is an antiracist and decolonizing approach to research due to it being used through an Indigenous relational theoretical framework which allowed me to address power imbalances, privilege Indigenous Knowledge, built trust, and engage in a reciprocal relationship [57].

5.3. Storytelling Scenario Results

The first question in the project was to ask participants to describe what sustainability in the community of Ninilchik meant to them. This definition was extensively explored in Gordon, 2021, but I will briefly summarize it here [57]. A sustainable Ninilchik was described as a place that will "carry on through generations and be here . . . for those to come . . . for my kids, and my future grandchildren" (personal communication, interview 6, 26 February 2018). Participants emphasized they did not want their present actions to jeopardize the future of coming generations. They identified social, ecological, and economic aspects of sustainability and included the importance of transmitting Indigenous Knowledge, culture, and subsistence practices. Participants wanted the community to be able to have enough employment and small businesses for people to provide for their families. They described a thriving social community with a large population at the school and engaged youth staying away from drugs and alcohol. In regard to ecology, they see a sustainable Ninilchik having flourishing fish, animal, berry, and tree populations. They identified the Tribe playing an important role in a sustainable and well future for their community as they not only provide jobs but arrange social gatherings and run the subsistence fishing net. This description of a sustainable Ninilchik was more grounded in the optimistic future than the present, and to achieve it, participants identified the role of self-determination which is explored in Gordon and Datta, 2021 [67]. Ecological sustainability was closely linked to subsistence practices.

Previous studies on the population in Ninilchik demonstrate extensive involvement and reliance on subsistence for food which was further confirmed by this case study. For example, a 1998 study by the Alaska Department of Fish and Game (ADF&G) identified 96 percent of Ninilchik households involved in subsistence harvesting which included

berry picking, fishing, gathering plants, bird hunting, and moose hunting with an average harvest by household of 439.5 pounds and a per person fish harvest of 81 pounds [68]. A survey conducted in 2002 by ADF&G interviewed 100 Ninilchik households and found that 96 percent harvested fish at approximately 82 pounds per person [69]. The Ninilchik Village Tribe hired a survey company to conduct a subsistence survey in 2014 and this survey found that of the 44 people surveyed through a simple random sample, 30 people hunted, 36 people fished, 7 people trapped, and 30 people gathered [70].

Participants in the EFR storytelling scenarios confirmed this extensive reliance on subsistence. One person explained how sustainability and subsistence are tied together in Ninilchik, "There's the sustainability of keeping the subsistence lifestyle that I think is prevalent, and should be, a cornerstone of who we are" (personal communication, interview 15, 6 March 2018). Subsistence is a cultural practice that has been handed down to each new generation and is a central part of being a member of the Ninilchik Tribe and community. Participants in Ninilchik detailed the food they hunted and gathered from the land to include multiple types of fish, moose, razor clams, and multiple types of berries. A large percentage of community members use subsistence to supplement their food purchased at grocery stores. Participants explained that without subsistence they would not get enough to eat and would either go hungry or would have to move away from the community to a larger city that had cheaper groceries. They emphasized that food security was not the only reason they valued subsistence, it was important to their wellbeing and spiritual fulfillment to be able to subsist from the land and to live sustainably and pass on cultural practices to their children and grandchildren. This is consistent with a definition of subsistence specific to Alaska Natives which identifies that it is not only about gathering food; it is an integral part of individual and community identity and culture through sharing food, storytelling, song, dance, and eating together [71].

Youth not only learn subsistence from their families but through the Tribe as well. The Tribe runs the youth education leadership program (YELP) through a Substance Abuse and Mental Health Services Administration (SAMHSA) grant to reduce suicide and substance abuse. Through utilizing culture as a protective factor from these adverse issues, youth are taken out on the land by the Elder Outreach Program Coordinator to learn subsistence activities such as fishing salmon with a set net and digging razor clams across the Cook Inlet from Ninilchik, as the Ninilchik beach is closed to clamming. Youth learn how to clean and process the fish and clams through canning as well as learning to smoke the salmon. They provide the processed subsistence food to Elders in the community that are no longer able to practice subsistence themselves. This sharing of food and youth providing to Elders is an important part of Tribal culture.

Having sustainable use of resources is of vital importance to interviewees as living off the land through subsistence practices to provide for their families brings a sense of self-worth. Subsistence is a central part of the Ninilchik Village Tribal culture. As one interviewee explained, "Our culture . . . what I was taught and how I was brought up was what you need to do to survive in this environment. And, you know, we don't have songs necessarily or a language other than Russian. We don't have a bunch of dances, regalia, things like that that other Tribes have" (personal communication, interview 9, 27 February 2018). Sadly, colonization resulted in a lot of cultural loss in the community and subsistence is a central aspect of culture Tribal members hold dear. One Tribal member summed up just how important subsistence is, "I can't live without a king salmon. I can't live without a moose. I can't live without a clam. Okay, that's me. That's my DNA" (personal communication, interview 12, 1 March 2018). As many Tribal members have their identity tied to subsistence, this is one reason the Tribe has fought so hard for subsistence rights.

Participants that worked for the Tribe provided extensive information on how NVT struggled and fought legal battles, just like other Alaska Native Tribes, to maintain their sovereignty, self-determination, and subsistence rights. NVT worked for years, from 2006 to 2016, to be able to practice their subsistence rights granted to them as

rural residents though ANILCA to fish on the federal parts of the Kasilof and Kenai Rivers [17]. As explained above, this right to subsistence was not based on the fact that NVT is an Alaska Native Tribe with subsistence practices since time immemorial, but is instead based on rural preference. NVT sought to fish for Ninilchik residents (Native and non-Native) who were not able to do it themselves, only catching the number of fish allowed by the number of permits a year which depended on the number of people who signed up. At the time of my research, it was 25 fish per head of household with five additional for each family member for an approximate total of 2000 sockeye salmon total for a year to be harvested by the NVT net.

The Ninilchik Traditional Council (NTC), the governing body of the Tribe, took a proposal to the Southcentral Regional Advisory Council of the Board in early 2014 to fish on the rivers which was recommended to the Board and followed by NTC submitting operational plans for their gillnets in both rivers. The Kasilof River plan was approved for 2015, but the Kenai River plan was not [20]. NTC argued they had a right to fish; however, they were not allowed to fish in the Kenai River, and in October 2015 they sued the federal government in *Ninilchik Traditional Council v. Towarak* et al. [20]. In 2016, with their court case still ongoing, the Board allowed NTC to put a gillnet in the Kenai River on an experimental permit which was then allowed in subsequent years.

Arguments cited against the Kenai gillnet included biologists saying that it would lower fish counts, preventing fish species from swimming up the rivers to spawn [72]. While the river waters that Ninilchik sought to fish on were federal land, commercial and sport fishermen fishing at the mouth of the Kenai River in the Cook Inlet are on state managed marine waters. These same biologists were not arguing against commercial and sport fishing at the mouth of these rivers which take approximately 98 percent of the yearly fish catch with subsistence taking less than 1 percent [72]. As one participant explained, "fishing became a way to get money to buy food instead of a way to just get food and everybody got really excited about that . . . subsistence is basically outlawed on the Kenai Peninsula which is bizarre" (personal communication, interview 17, 7 March 2018). While ANILCA [17] says it prioritizes subsistence users, the State of Alaska says gives subsistence users "reasonable opportunity" and if there are only sufficient populations for subsistence use, regulations will be adopted "that eliminate other consumptive uses to provide a reasonable opportunity for subsistence uses" [73]. One participant explains their absolute frustrations:

> "Sue the shit out of the state and the feds and tell them to shut it all down. If subsistence can't happen and the subsistence users cannot go out there, *they're causing such a burden on the fish* [emphasis mine], then shut it down. Shut sports fishing down. Shut commercial fishing down. And shut the guides down . . . I'm pretty sure, probably within 2 weeks, the state would go, hmmm, we really need to figure this out because there's a lot of people that are pissed. And then they'd figure it out. But the problem we have is we can't hold them [the state of Alaska] accountable (personal communication, interview 1, 21 February 2018)

The commercial and sports fishing lobbies have much more money and sway with the political appointees managing State waters than subsistence users; subsistence is not prioritized by the State and has not been for a long time [74,75].

Participants explained that there are problems in the current way fish and wildlife are managed in the Ninilchik area, managed in an unsustainable way. With colonial management decisions threatening their culture, the Tribal members were very concerned. One interviewee spoke about subsistence management not including Indigenous Knowledge and how that made them feel, "No one wants to listen to the people that actually are out here . . . They don't listen. They're not listening to me. I mean, I don't have a college education, so, that goes right out the window right away, anything I say. I'm too dumb for them to listen" (personal communication, interview 1, 21 February 2018). This participant was emphasizing that perspectives actually listened to in management decisions were only those of scientists,

so even though this person was a holder of Indigenous Knowledge, they were made to feel dumb and without a college education their Knowledge was not of value.

Participants felt that management decisions are being made by officials in offices far from the community, not considering what local populations observe in their regular use of resources. The decisions are in fact made by the state or the Board, depending on what land is in question. Multiple participants shared with me a very recent example of local and Indigenous knowledge being ignored in Ninilchik around the razor clam population. NVT notified the state repeatedly over the years that the size of clams and their numbers were diminishing on the local beach. Regardless, the state kept the per person limits high, allowing not only the approximately 800 rural residents from Ninilchik to dig clams but allowing urban residents from the Kenai, Soldotna, and Anchorage areas as well, totaling over half a million people.

When the clams were finally less than half their usual size, the beaches were closed to clamming to let the populations regrow [16]. As one participant said, "Put the state in charge of the mosquito population and it'll be gone. If you want to kill something off, put the state in charge of managing it. They managed to kill off our clams" (personal communication, interview 7, 26 February 2018). This was very hard for Ninilchik residents as clamming was a part of their culture. They had harvested clams for generations and had recipes and fond memories of family gatherings around clamming. By excluding local and Indigenous Knowledge from management decisions and not taking an Indigenous approach to stewardship, the food security of Ninilchik residents as well as their cultural traditions and subsistence practices were harmed, taking away a resource they depended upon for their food security and culture. Since beaches were closed in 2014, children from babies to 8-year-old have now not been able to participate in clamming on the beaches outside their homes and this cultural practice has not been passed down. Beaches across the Cook Inlet are available for residents with access to a boat.

Ninilchik locals believe in sustainable harvesting so that future generations will be able to still live in the area and not only gather food but be able to practice their culture of subsistence. One non-Native participant I talked to described how they see NVT participating in fish and wildlife stewardship:

> The state and the federal government need to step out and let the Tribe do what the Tribe does. They've managed that resource since the beginning of time. They understand it. They understand the reproductive cycles. They understand the lifespan. They understand the climates that are going to be involved. They have history, and they can look back and they can see those cycles ... The Tribe recognized the problem [low counts of clams, fish, and/or animals] a long time ago, 90 percent of the time. They don't get surprised. They see it coming. You hear the Elders whispering about it and talking about it and nobody listening to them. You've got to listen to the Elders. They're the memory in the room. (personal communication, interview 15, 6 March 2018)

When looking at the data from the 20-year optimistic future, participants were excited to talk about Tribal sustainable management practices based on Indigenous Knowledge resulting in fish and animal populations returning to levels that could be harvested. Many older participants reflected back on how populations were in their youth and how they were optimistic things could be like that again with proper management through Indigenous Knowledge. One participant explained, "We would hunt and fish and fill our freezer and not have to buy meat. That would be ideal" (personal communication, interview 11, 1 March 2018). Participants identified the return of crab, shrimp, and abalone populations for harvest from the ocean with strong salmon and halibut populations in their optimistic future scenarios. They also talked about increased abundance of berries.

At the time of the study from 2018 to 2019 and as of 2022, R. Greg Encelewski is on the Southcentral Regional Advisory Council. He is also NTC's President of the board of directors. Yet, participant after participant I talked to explained that the current management systems run by both the state and federal governments are not considering local and

Indigenous Knowledge. Participants explained that they get laughed at when trying to provide information on animal counts that have been passed down through oral history and that, unlike biologists, they are never listened to. Indigenous Knowledge is vital to sustainable resource stewardship due to the observations people living in the areas make about how things are changing. Participants explained that the decisions the Board and state make are based on biologist input more than local observations, and biologists do not have the day-to-day observation of the fish and wildlife populations which is one thing that makes Indigenous Knowledge so powerful and valuable.

Ultimately, participants see management decisions as being politically-based and not based on the actual fish and wildlife counts. One participant explained, 'Somehow you're going to have to get away from political management... If we want a resource to thrive, we have to have good nonpolitical management and the state is just 100 percent political. So, when they're managing, they're managing by, "What does the sport fishing industry want?" . . . They'll get a call from the commissioner, from the governor, and say, "No we want this, sportfisherman are saying close this down." So, politics unfortunately plays too much in state management' (personal communication, interview 7, 26 February 2018). Over half of those I talked to explained that the Tribe needed to be involved in this management on a larger scale than they are currently allowed so that they can provide the generations of Indigenous Knowledge they possess on the local fish and animal populations to not only manage them sustainably but to also have subsistence rights.

6. Discussion and Conclusions

Alaska Natives have been racialized, experienced and continue to experience horrific acts of colonization and racism, and are still not included in the land management over lands they depend on for their food security and cultural survival through subsistence in meaningful ways. This all continues even though research has shown that Native people are more successful at stewarding land sustainably [43]. Ninilchik community members understand sustainability as an integrated part of their lifestyle that allows for future generations to flourish and continue the same cultural subsistence practices as have been practiced in the area for millennia. Ecological sustainability is one of three areas of sustainability that was important to the participants; this also includes social and economic aspects. Participants identified the Tribe as playing an important role in stewarding the land and water and fish and wildlife populations to maintain sustainable use for generations of children and grandchildren to continue cultural subsistence practices in years to come. As explained by participants in Ninilchik, the role of local and Indigenous Knowledge in land management is critical and without it, fish and wildlife populations will continue to be harvested unsustainably and lost to users as the razor clam population was [19]. With the state choosing not to regulate salmon populations in ways participants deem sustainable, Ninilchik residents fear a loss of the king salmon population and emphasize the need for the Tribe to be leading stewardship for food security and cultural continuity. This form of stewardship worked for millennia as salmon were sustainably harvested by Indigenous Peoples prior to colonization [76].

Currently, commercial and sport fishing lobbies have a lot of sway on the way things are managed, and the state of Alaska has a history of promoting commercial and sport fishing and ignoring Indigenous rights, including not recognizing the Indigenous Tribal Nations in Alaska as sovereign entities. Examples of court cases include the Katie John series of cases over Alaska Native subsistence rights which began in 1984 when Katie John and Doris Charles requested the Alaska State Board of Fisheries to open Batzulnetas for subsistence fishing and were denied even though downstream sport and commercial uses were taking hundreds of thousands of salmon [77]. *Kenaitze Indian Tribe v. State of Alaska* in 1988 is another example of a subsistence fishing case where the U.S. District Court for the District of Alaska Judge Kozinski wrote in their opinion that:

"This is a case involving a clash of lifestyles and a dispute over who gets to fish. Congress, using clear language [through passing ANILCA in 19080], has resolved this dispute in favor of the Kenaitze who choose to pursue the traditional subsistence way of life by giving them priority in federal waters. The state has attempted to take away what Congress has given, adopting a creative redefinition of the word rural, a redefinition whose transparent purpose is to protect commercial and sport fishing interests" [78].

With the State government having a history of not recognizing Tribal sovereignty with a government-to-government relationship, this limits the role NVT can have in practicing their subsistence rights and stewarding their traditional lands [18]. Without the rights to steward the land or at least being meaningfully included in management, Alaska Native communities will continue to struggle with food sovereignty issues leading to not only food insecurity but loss of culture as well due to the relational aspect and utilization of the natural world [14]. As is explained above, ongoing racism by the state of Alaska, majority non-Native state legislature, and state and federal land and water management bodies continue to hurt Alaska Native Peoples. The Alaska legislative majority enacts policies that ignore the importance of subsistence to Alaska Natives and have the effect of forcing Alaska Natives to assimilate, continuing colonial practices [79]. Racism is systemic in Alaska through past and ongoing colonization, land claims, and present land and water management practices.

Anti-racism seeks to actively oppose racism and change not only behaviors and beliefs but racist policies. Even though race has been proven to not be a biological difference, in Alaska, racism and colonization are prevalent in both state and federal management practices as explained above. Decolonization of land management practices, to create a space for Indigenous Peoples in Alaska to steward the land and build resilience around subsistence, is the main avenue through which this paper explores anti-racism. This includes Indigenous-led stewardship and acknowledging the problems of co-management in Alaska [80]. This addresses issues of food security and culture being lost as subsistence rights are taken away following a history of land being taken away. Giving the land back to the Indigenous Peoples is an even greater form of decolonization that would lead to Indigenous stewardship of the land and water they use and practice subsistence on.

In a very recent article in Indian Country Today titled "Can Indigenous subsistence rights still be protected in Alaska?", decolonization of both land management and land ownership is recommended by Alaska Natives as a way forward for subsistence rights [80]. These include (1) amending ANCSA to reinstate Aboriginal fishing and hunting rights; (2) amend ANILCA to give Alaska Natives subsistence priority in addition to rural residents; (3) implement co-management that is more successful than current models and provides greater Alaska Native influence over federal and state subsistence laws. I would provide a fourth option which would be to return federal and state claimed land to the Tribes in regard to both ownership and stewardship as is being proposed about federal national parks land [81,82].

All four of these options are not easily accomplished as the racism they are working against is systemically imbedded into federal and state laws which remove Indigenous control of subsistence. An estimated $20 million USD has been spent thus far by Alaska Natives to protect their subsistence rights which would mean that any of these four options would likely be expensive legal battles that the many small Tribes lack funding to fight, requiring the involvement of the regional for-profit Native corporations [80]. These options all seek to truly create sustainable stewardship practices that maintain food security and food sovereignty through drawing on local and Indigenous Knowledge. Legal scholar Robert Anderson explained that under both the Indian and general commerce clauses, Congress has the power to create a Native subsistence priority on all lands and waters in Alaska, including Alaska Native corporation, state, and federal lands which is seen in the MMPA which has a Native exemption [82]. Yet nothing in this regard is being done to amend ANCSA or ANILCA.

Alaska Natives have been racialized since first colonization which colonizers used as justification for their actions, including forced boarding schools, taking land, creating blood quantum, and controlling land management, impacting Alaska Native subsistence. Through this paper, I have sought to demonstrate the current systemic racism extending through both federal and Alaska state legislation that has removed land ownership and stewardship from Alaska Natives. Racist approaches to Indigenous land stewardship claim that Indigenous Peoples cannot manage land. Without rights to land management, Alaska Natives do not have priority to practice subsistence on federally or state managed land that allows them to maintain their cultures and food security. Rural preference puts at risk the rights of the large number of Natives who have moved to urban Anchorage to travel home to practice and sustain their cultures.

NVT provides an example of subsistence loss due to lack of Indigenous exclusion in management, the razor clam population, as well as examples of having to fight through the courts for their rights to fish salmon through a rural subsistence priority. Interviewees explained how they feel left out of management and explained the key role local and Indigenous Knowledge should play in management decisions. This paper is a call for an anti-racist response, a call to decolonize the history of land taking and land management in Alaska so that Indigenous children and future generations can still have food security and practice their cultures. This paper implies that by the state and federal governments engaging in antiracism and decolonization as a multistep process, Alaska Native's can steward their lands more successfully than they are currently being managed and have subsistence rights. This can be done through the state and federal governments: (1) acknowledging and respecting Tribal sovereignty and self-determination; (2), respecting Indigenous Knowledge and creating space for Indigenous-led stewardship of the land, waters, plants, and animals; and (3), giving the land back to the Alaska Native Tribal Nations through respecting their sovereignty and letting them steward it themselves to have their subsistence rights.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of the University of Alaska Fairbanks (protocol 1090657, approved 5 September 2017).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study. Consent was obtained from the Ninilchik Village Tribe to utilize the project we partnered on as the case study in this paper from the Executive Director of the Tribe Ivan Z. Encelewski.

Data Availability Statement: Not applicable.

Conflicts of Interest: The author declares no conflict of interest.

Notes

[1] Indigenous communities, Peoples, Tribes, and Nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop, and transmit to future generations their ancestral territories, and their identities, as the basis of their continued existence as Peoples, in accordance with their own cultural patterns, social institutions, and legal system [1].

[2] The term Alaska Native and Indigenous will be used interchangeably in this document as Alaska Natives are the Indigenous Peoples of Alaska which are comprised of 231 federally recognized Tribes [2].

[3] The concepts of land management and ownership are Western as in an Indigenous relational perspective no one owned the land but instead people cared for and stewarded the land in relationship with the earth, not in dominion over it [14].

4   The term Tribe is used by the federal government to identify Indignous Nations on the list of Fedreeally Recognized Tribes that the U.S. has formally recognized as sovereign Nations and has a government-to-government relationship with. Tribe is not a term all Alaska Native Nations use and some use community or village instead of Tribe. This paper utilizes the word Tribe to help the reader understand the government-to-government relationship between Alaska Native Nations and the U.S. federal government [23].

5   One aspect of the original project with the Ninilchik Village Tribe and the author's dissertation was to define what sustainability meant to the participants. This is thoroughly explained in the publication Gordon, H.S.J. Ethnographic Futures Research as a Method for Working with Indigenous Communities to Develop Sustainability Indicators. *Polar Geography* 2021, 44, 233–254 [57].

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Concept Paper

Decolonizing Digital Citizen Science: Applying the Bridge Framework for Climate Change Preparedness and Adaptation

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Abstract: Research has historically exploited Indigenous communities, particularly in the medical and health sciences, due to the dominance of discriminatory colonial systems. In many regions across Canada and worldwide, historical and continued injustices have worsened health among Indigenous Peoples. Global health crises such as climate change are most adversely impacting Indigenous communities, as their strong connection to the land means that even subtle changes in the environment can disproportionately affect local food and health systems. As we explore strategies for climate change preparedness and adaptation, Indigenous Peoples have a wealth of Traditional Knowledge to tackle specific climate and related health issues. If combined with digital citizen science, data collection by citizens within a community could provide relevant and timely information about specific jurisdictions. Digital devices such as smartphones, which have widespread ownership, can enable equitable participation in citizen science projects to obtain big data for mitigating and managing climate change impacts. Informed by a Two-Eyed Seeing approach, a decolonized lens to digital citizen science can advance climate change adaptation and preparedness efforts. This paper describes the 'Bridge Framework' for decolonizing digital citizen science using a case study with a subarctic Indigenous community in Saskatchewan, Canada.

Keywords: decolonizing research; citizen science; digital health; health equity; data sovereignty; self-governance; indigenous health; two-eyed seeing; climate change; food security

1. Introduction

Climate change is a global health crisis and one of the most pressing issues of our time [1–3]. Research has well established the myriad impacts of climate change, including the direct and indirect risks that extreme heat, poor air quality, and adverse weather events pose for human health in particular [3–7]. As identified in the 2021 Intergovernmental Panel on Climate Change (IPCC) Report, rapid and swift action is required to mitigate the devastating effects of climate change [7]. This urgency was reiterated by nations across the world at the 2021 United Nations Climate Change Conference, where key goals were set to minimize the impacts of climate change [8]. Apart from limiting the rise of global temperature to 1.5 degrees Celsius, one of the key goals is to protect communities and natural habitats by implementing adaptation strategies including building defences, warning systems, and resilient infrastructure. Another key goal is to accelerate action through collaboration between governments, business, and civil society [8]. Citizen science can play a significant role in achieving these goals, as it can be used to not only leverage big data that can inform rapid responses [9,10], but also to bring decision-makers and civil society together to co-create solutions [11,12].

Citizen science refers to active citizen participation in research, from data collection to the knowledge dissemination stage [11,13–15]. Digital citizen science is an emerging area whereby digital tools, such as smartphones, are used to capture data and engage with citizens in real time [11,16]. Digital tools have immense potential to advance citizen

science research, as rapid-response interventions and knowledge sharing can be administered in near real time [9,10,17]. Combined with artificial intelligence, there is increasing sophistication that can be built into digital platforms to enable time-, user-, event- or location-triggered prompts for citizens' feedback [9,10,16,17]. Digital technology has an even greater role to play in time-sensitive crises such as climate change preparedness and adaptation.

While there is an immense global effort to mobilize against rapid climate change, the communities most negatively impacted are often not well represented in these critical conversations, if at all. In many regions across Canada and worldwide, Indigenous and racialized communities live in the most severely impacted areas, and as a result experience worse health outcomes [18–23]. On the collective territories or land we call 'Canada', Indigenous Peoples include First Nations, Inuit, and Métis communities, with each group representing unique cultures, languages, beliefs and histories [24]. Indigenous communities are one of the most adversely affected by climate change because their strong connection to the land means that even subtle changes in the environment can have a disproportionately greater impact on their food systems, economy, and livelihoods [21,22,25,26]. In 2022, a new report released by the IPCC, "Climate Change 2022: Impacts, Adaptation, and Vulnerability", importantly acknowledged the role of colonization in perpetuating the climate change problem, as well as the lack of representation from the most vulnerable population groups in determining solutions [27]. If the goals of the IPCC and United Nations Climate Change Conference are to be achieved, consistent and equitable engagement with Indigenous communities is critical to managing climate change [28–31].

Given the disproportionate impact of climate change on Indigenous Peoples, the voices and knowledge of communities who have been experiencing the closest and most frequent effects must be amplified [27]. In exploring opportunities for climate change preparedness and adaptation, integrating Traditional Knowledge (this term is capitalized out of respect for the cumulative body of knowledge, practices, and beliefs that Indigenous Peoples have developed and maintained over time) with Western research methods such as citizen science could provide unique and timely solutions to mitigate climate and related health issues [32,33]. However, traditional citizen science approaches stem from Western ideology, with many projects placing the focus on individual participation and data collection rather than the community as a whole [12,34]. Nevertheless, digital citizen science, in particular, has great potential to aid meaningful climate change preparedness efforts in Indigenous communities, if decolonized and viewed as a collective community effort working towards common goals [10,33].

Researchers, scientists, and thought leaders in this space have paved the way for decolonizing research methods [35–39], and it is important that we apply these principles if we are to address the climate crisis equitably. Decolonizing research methods involves unlearning the hierarchy attributed to Western research methods and respecting Traditional Indigenous Knowledges as valid climate change solutions. Decolonizing digital citizen science has great potential to improve research on climate change preparedness and adaptation.

This paper describes a framework for decolonizing digital citizen science for climate change preparedness and adaptation. Applying three core theoretical approaches (decolonizing research methods, citizen science, Two-Eyed Seeing), the 'Bridge Framework' can contribute to decolonizing citizen science projects. A case example is provided of a subarctic Métis community in Canada to illustrate the application of decolonizing citizen science for a project focused on climate change impacts on food systems—the Food Equity and Environmental Data Sovereignty (FEEDS) Project [40]—where Indigenous self-governance and data sovereignty are prioritized.

2. Theoretical Approach

A framework for decolonizing digital citizen science was informed by three key theoretical approaches: decolonizing research methods, citizen science, and Two-Eyed

Seeing. Decolonizing research is the first step, and when combined with a Two-Eyed Seeing approach, allows researchers to apply citizen science to any project with the mindset of collaboration, determining a collective vision, and eliminating or reversing power imbalances between researchers and citizens or communities.

2.1. Decolonizing Research

Decolonizing research de-centres the focus from the aims of non-Indigenous researchers to the needs of Indigenous Peoples [35]. It is a process that requires unlearning Western-centric research practices, from data collection and analysis to participant engagement and knowledge sharing, in order to dissociate research from its colonial roots [34,37,38]. While community-based participatory research is commonly applied to community-focused research [41], this does not necessarily mean that projects are community-driven or take a "decolonizing" lens. Decolonizing research requires an active stance—it is an iterative process whereby each aspect of research and engagement is unpacked to understand the potential colonial underpinnings, and reassessed with a decolonized lens. Engaging in this process warrants dedicated time and reflection, and while I describe my experience in the FEEDS Project as a case study below, the topic cannot be done justice in a single paper. Decolonizing methods can be explored in depth through the works of scholars including Dr. Linda Tuhiwai Smith [35].

2.2. Citizen Science

Citizen science refers to public participation in data collection and knowledge dissemination for research [11,13,42]. Traditionally, citizen science research is conducted voluntarily (i.e., unpaid), and scientists lead projects with input from citizens. This approach enables citizens to contribute or collaborate on all aspects of the research process and promotes open participation which enables citizens to be active collaborators on research projects [11,15,17]. With the expansion of smartphone ownership, information is increasingly being shared through digital and social media. Citizen science has great potential to contribute to climate change adaptation and mitigation strategies, as citizens can report on and respond to the effects of climate change in real time with the help of digital tools. A current deficit of this approach, however, has been the lack of representation of Indigenous, racialized and low-income groups [15,43,44]—many of whom experience the adverse effects of climate change most frequently and severely [2,28]. The individualistic approach of citizen science limits its application for community-driven initiatives if not adapted using a decolonized and Two-Eyed Seeing approach, whereby citizens are viewed as members of a larger community for project participation.

2.3. Two-Eyed Seeing

Two-Eyed Seeing is a term coined by M'ikmaw Elder, Albert Marshall, which refers to learning to see from one eye with the strengths of Indigenous Knowledges, and the other eye with the strengths of Western knowledges [45–47]. This approach is based on the principle that neither type of knowledge is superior to the other, and instead, learning to see with both eyes encourages creativity and inclusivity in how problems and solutions are oriented. A Two-Eyed Seeing approach, when combined with decolonizing citizen science, can promote self-governance by allowing researchers and communities to find local solutions to global problems [11]. For example, the FEEDS Project aims to develop a digital platform for real-time decision-making to mitigate adverse climate change-related impacts on human health in the communities most affected. This project highlights Traditional Indigenous Knowledge about the environment and food systems, Indigenous research methods, and Western digital citizen science methods to promote culturally relevant approaches for climate change preparedness and adaptation [40].

3. A Framework for Decolonizing Digital Citizen Science

Decolonizing digital citizen science is a process that requires understanding and identifying the various ways in which citizen science has stemmed from a colonial perspective, and reimagining how the strengths of this method can be applied with a Two-Eyed Seeing approach [45–47]. Figure 1 describes a framework for decolonizing citizen science whereby a self-decolonizing journey, community engagement and capacity building, integrated knowledge translation, and co-creating solutions with communities are key pillars that can lead to Indigenous self-governance—a process that has particular benefits for climate change preparedness and adaptation. The ultimate goal of engaging in decolonizing citizen science is to facilitate healing, self-determination, and self-governance [35].
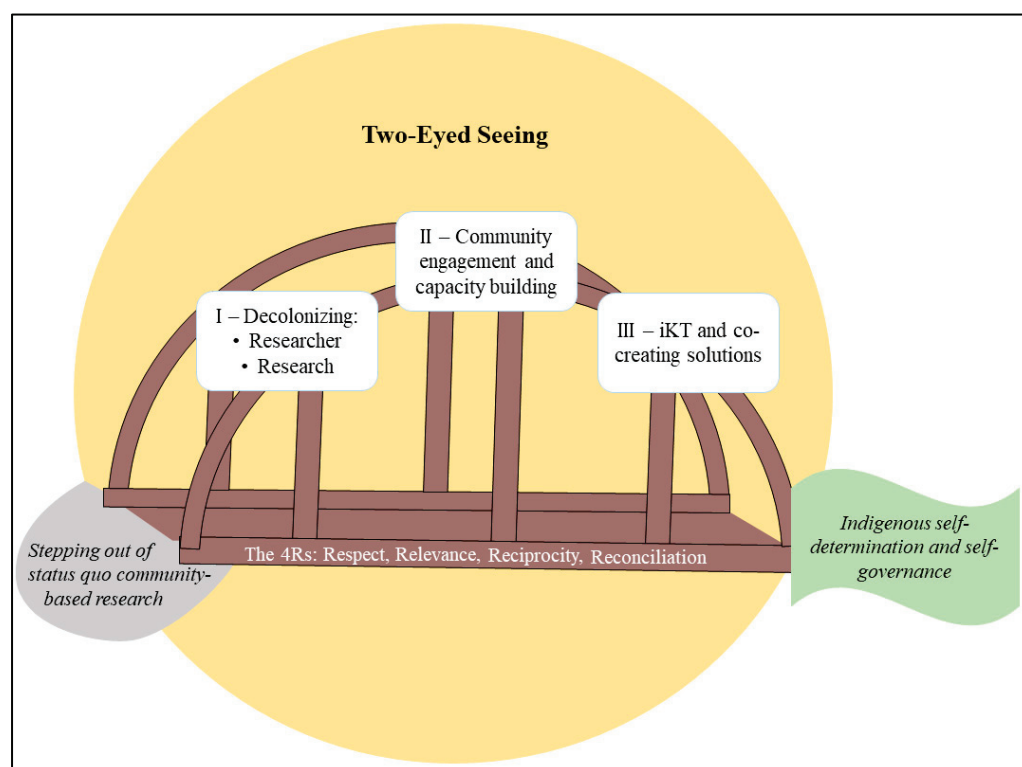

Figure 1. The Bridge Framework for decolonizing digital citizen science.

3.1. Self-Decolonization

As a settler scholar and daughter of immigrants with Indian ancestry—a country formerly colonized by the British—witnessing the intergenerational impacts of colonization stemmed my interest in understanding the long-term impacts of these systems on health. My undergraduate education introduced me to the concepts of social and ecological determinants of health, where Indigenous Peoples in Canada were consistently noted as experiencing disproportionate health and social disadvantages. While the connection between these issues and colonization was not immediately clear to me, I worked closely with off-reserve Indigenous communities during my graduate studies which elucidated the myriad of impacts that colonization continued to have on holistic health. Over the past 10 years, I have partnered with First Nations and Métis communities in Ontario and Saskatchewan, Canada on a range of projects focused on food security and mental health, and have had the great privilege of learning from Knowledge Keepers and Elders in these communities. These experiences emphasized the importance of acknowledging the extent to which our systems—and therefore our ways of thinking and doing—are colonized, so that we may begin to reimagine how our approach to health research and community engagement could shift if we took a decolonized approach.

Decolonizing research is a complex process, as most research endeavours are embedded in colonial systems or institutions. However, if we are to make meaningful progress in improving health outcomes among (formerly) colonized communities—particularly those who have suffered unspeakable injustice as a result—decolonization is a necessary first step.

We cannot let the history of harmful colonial impacts be water under the proverbial bridge. In partnering with Indigenous communities, relationships must be built based on respect, collaboration, and common goals [48,49]. On my decolonizing journey over the past decade, I learned that engaging in decolonizing citizen science research is a process that begins with decolonizing as a self-reflective practice for researchers. Decolonizing involves non-Indigenous researchers listening and learning from the colonial history and experiences of Indigenous Peoples. This practice requires identifying and deconstructing Western-centric research training, which can be initiated through grounding in self-awareness andreflection; listening to stories of lived experience; and engaging with scholars championing these areas..

3.2. Community Engagement and Capacity Building

Consistent and meaningful community engagement and capacity building is an important next step for not only decolonizing research but also for self-determination to take place as described in Tuhiwai Smith's Indigenous Research Agenda [35]. This agenda provides a set of approaches that can be incorporated into research methods or practices to facilitate self-determination. Self-determination is described not only as a goal, but also as a process that requires transformation, decolonization, healing, and mobilization of Indigenous Peoples [35]. As part of this process, researchers must appreciate how each community is unique and has different histories, experiences, understandings of the world, and teachings. Community engagement is an important part of this learning and can take place in various forms. However, a critical aspect of this engagement is identifying where and how capacity can be built to ensure long-term project sustainability and longevity. Ultimately, self-determination and governance rely on community capacity.

3.3. Integrated Knowledge Translation and Co-Creating Solutions

Integrated knowledge translation (iKT) refers to collaboration between researchers and knowledge users to address a research issue [50,51]. Taking principles from community-based participatory research, iKT involves the co-production of knowledge as knowledge users work with researchers throughout the research process [51]. This approach not only provides the necessary context for designing and implementing a research project, but also ensures that the knowledge generated and shared throughout a research project is continually disseminated to all relevant stakeholders [51]. For community-based initiatives, the consultation also ensures that the project plan, implementation, and knowledge dissemination are both culturally appropriate and relevant given the specific context, resources, and infrastructure available to a given project or community.

Throughout a project, co-creating solutions to identified problems is an essential component of designing policies, programs, and strategies that will succeed. Emphasizing co-creation ensures that solutions do not come from the 'top' down [41,43,47]. Communities are the experts and beneficiaries of a given research project, and thus must lead in guiding solutions. The process of iKT should take place before, during, and after co-creating solutions, as this encourages timely idea sharing, dissemination, and implementation of solutions. Activities may include organizing community events, use of social media, or sharing knowledge via KT symposia [52].

3.4. The 4Rs

Decolonizing digital citizen science cannot take place without respect for Indigenous Knowledges and cultures, and between researchers and community members [35,39,43]. The foundation for the bridge to decolonizing citizen science for Indigenous self-governance

therefore must be the 4Rs—Respect, Relevance, Reciprocity, and Reconciliation [53,54]. This includes respect for Indigenous cultures and Peoples, reciprocity in relationships between non-Indigenous settlers and Indigenous Peoples, a reconciliatory approach to building partnerships, capacity, understanding, and healing and ensuring the relevance of our approaches to engagement, iKT, and co-creating solutions.

In conducting digital citizen science projects, the First Nations OCAP principles [55] are also critical to acknowledge and apply. These include ownership of knowledge and data, control over all aspects of research, access to information about one's own community, and possession or control of data [55]. These principles ensure First Nations and other Indigenous Peoples the right to their own information and respect the fact that they are stewards of their information, in the same way that they are stewards over their own lands. They also reflect commitments to use and share information in a way that maximizes the benefit to a community, while minimizing harm.

Both the 4Rs and OCAP principles are critical to decolonizing research. As described in Darder's (2019) principles of decolonizing Indigenous education framework, decolonization requires centring Indigenous voices and naming coloniality [56]. Removal of hierarchical structures is also a key component, as Western research norms for funding structures, rigid timelines, and research participation can limit the application of decolonized citizen science and a Two-Eyed Seeing approach. Collaboration at every stage of research, from project conceptualization to knowledge dissemination, is necessary for self-determination and self-governance.

3.5. The Bridge

The Bridge Framework is enabled by Two-Eyed Seeing, which is symbolized by a circle that encompasses the bridge that facilitates the change from status quo in community-based research to Indigenous self-governance—a pathway that is particularly important in leveraging the strengths of both Indigenous and Western Ways of Knowing in addressing a specific problem such as climate change [31,40]. From a digital citizen science perspective, self-governance cannot be feasible without data sovereignty as big data generated by citizens playing a central role in informing decision-making [11]. Thus, the framework ultimately leads to both self-governance and data sovereignty.

Collaborations between non-Indigenous or settler scientists and Indigenous communities, which are particularly critical for climate change preparedness and adaptation, may benefit from a Two-Eyed Seeing approach to leverage tools, expertise, and technology [45,47]. Decolonizing digital citizen science is an essential step in achieving the goals of the IPCC and the 2021 United Nations Climate Change Conference [8,27]. The Bridge Framework is currently being used to implement climate change preparedness and adaptation strategies in partnership with Indigenous communities [40].

4. A Bridge Framework Project—Food Equity and Environmental Data Sovereignty (FEEDS)

Guided by the decolonizing citizen science Bridge Framework, the FEEDS Project was conceptualized in collaboration with the Métis jurisdiction of Île-à-la-Crosse, Saskatchewan, Canada. The Northern Village of Île-à-la-Crosse, also referred to as Sakitawak—the Cree name translating to "the place where the river flows out" [57]—is a subarctic community with road access in northwest Saskatchewan. Given its location on the lake of Île-à-la-Crosse, Sakitawak was a strategic location for the fur trade. It is the second-oldest community in Saskatchewan, established in 1778, with a population of 1300 [57]. The community is predominantly Métis (77%), and Northern Michif is the traditional language [58]. In Île-à-la-Crosse, commercial fishing, forestry, wild rice harvesting, schools, and the hospital are key sources of employment. With respect to digital access and connectivity, the majority of citizens aged 13 years and older own smartphones and have mobile or WiFi data plans. The presence of a cellular tower in Île-à-la-Crosse provides reliable and easy access to mobile data. FEEDS is a sustainable digital platform that enables early detection and warning of

climate change impacts on food sovereignty, food security, and solastalgia [40]. Ultimately, the digital platform will provide access to real-time data to facilitate timely decision-making and knowledge dissemination for climate change preparedness and mitigation in the community.

4.1. Applying Citizen Science to the FEEDS Project

In applying the Bridge Framework, FEEDS incorporates the Smart Framework's principles of integrating citizen science, community-based participatory research, and systems science for population health research [11]. Citizen science, in particular, has played an important role in the ecological sciences to collect data on a range of issues including wildlife movement patterns and climate change-related environmental hazards [13,14]. Citizen science, when combined with digital tools, has great potential to generate big data to address complex public health crises if citizens' data can be anonymized and applied by communities [11,40]. In addition to capturing environmental and health-related data (e.g., weather, permafrost degradation, fire hazards, human movement, etc.), the FEEDS Project uses a custom-built app to engage and enable citizens to report on environmental hazards, changes in biodiversity or wildlife, and related food and mental health issues in their communities [40]. Big data is relayed in real time to a digital dashboard, where citizens and decision-makers have access to valuable information which can be used to mitigate health-related risks of climate change [40].

4.2. Decolonizing Citizen Science for the FEEDS Project

A series of steps were followed from the Bridge Framework for the FEEDS Project. First, all lead researchers have a strong history of working with Indigenous communities and applying a decolonizing lens to their research approaches. The lead researchers have facilitated consistent engagement between the researcher team and community to ensure that the whole team (researchers, decision-makers, Elders) work together in applying a Two-Eyed Seeing approach for addressing community health issues. This process has involved researchers actively learning from Indigenous community leaders. Many thought leaders in the space of decolonizing research methods [35,38,39] describe the importance of decolonization as a process that is not 'complete' at any given point but continues to evolve over time.

For instance, as the Principal Investigator of the FEEDS Project, my personal journey of decolonizing myself as a researcher has involved formal training workshops led by Indigenous scholars, conversations with Elders and community members, reading and learning about Indigenous histories in Canada, and unpacking my family's own complicated history with colonization as a second-generation immigrant with Indian ancestry—an ongoing process that started 10 years ago when I began collaborating with Indigenous partners [59,60].

Decolonization is an especially critical consideration for research related to climate change impacts on health and food systems, as issues of land and food sovereignty, as well as holistic wellness (i.e., the connectedness between environmental and human health, which includes social, physical, mental, spiritual, and emotional wellbeing) [61]. As global conversations are taking place on climate change preparedness, colonial power dynamics are clearly on display. The lack of attention to decolonization may hinder our collective efforts to curb climate change while we can.

4.3. Community Engagement and Capacity Building

Understanding the distinct community of Île-à-la-Crosse started with building a relationship with several community members and leaders more than a year before the project was conceptualized. This community engagement was informed by the 4Rs and OCAP [53,55], where based on guidance from community leaders, community members were approached with respect and ceremony (i.e., gifting of tobacco). Common values and goals were discussed as part of building a relationship based on reciprocity, reconciliation,

and relevant project planning. The OCAP principles strongly informed conversations about data ownership and control, hence centring data privacy and sovereignty as part of the digital platform design. These conversations over the course of several months elucidated various priority areas for the community, including climate change impacts on food systems and mental health [62].

FEEDS was then established, and in order to facilitate focused discussions about these topics, a Citizen Scientist Advisory Council was created comprising Elders, Traditional Knowledge Keepers, key community decision-makers, youth, and FEEDS researchers [40]. The Council governs the FEEDS Project, and importantly, represents community members' interests to guide the governance of project development, implementation, and evaluation. All Council members are provided with CAD 150 as honoraria for each meeting to respect their time and guidance. The Council also leads the citizen recruitment strategy whereby citizen scientists can be actively engaged in the research process from data collection to knowledge translation [40].

The emphasis of these engagements is on listening to community needs and developing a long-term relationship that would not only ensure cultural safety, but also facilitate community capacity building. The Citizen Scientist Advisory Council is leading capacity-building efforts to ensure long-term project sustainability. One example of a distinct initiative that stemmed from the focus on sustainable project capacity is the development of a digital literacy program where youth learn research and data skills and teach adults and Elders in the community. Improvements to digital literacy were identified as critical for the success of not only the FEEDS Project but also for improving digital connectivity and independence in decision-making for community members.

4.4. Integrated Knowledge Translation and Co-Creating Solutions

It is a common misconception that knowledge translation happens after the project starts. Using the Bridge Framework, we ensured that knowledge transfer between Indigenous Knowledge Keepers, Elders, decision-makers, and researchers happened during the community engagement, which eventually led to the conceptualization of FEEDS, i.e., integrated knowledge translation and co-creation of solutions.

Given the complex history between researchers and communities and the exploitation of Indigenous Peoples and their data [23,63], self-governance and data sovereignty are of utmost importance for the FEEDS Project. Citizen scientists in the community co-create the project objectives, and these objectives evolve as community needs may change. Citizens are stewards of their own data and can engage with researchers and decision-makers in real time to shape solutions for the community [40]. For example, citizens can anonymously engage with researchers or decision-makers in the smartphone app via a user-triggered messaging system. This system provides greater flexibility and control for citizens to engage outside of traditional data collection periods and facilitates timely data access to relevant stakeholders. Equity is emphasized further in the researcher-community relationship, as Citizen Scientist Advisory Council members are co-authors on publications, and collaborate on other knowledge dissemination materials and events.

Meaningful community engagement requires awareness and management of hierarchies that inevitably enter a research or project dynamic. In order to facilitate this, capacity building is necessary to manage power dynamics, and ultimately ensure the sustainability of the project in the long term.

5. Discussion

The Bridge Framework was developed to facilitate decolonizing of digital citizen science. Self-decolonization, community engagement and capacity building, iKT, and co-creation of solutions form the pillars of the Bridge Framework, which lead towards Indigenous self-governance and data sovereignty when grounded by the 4Rs. A Two-Eyed Seeing approach encompasses the entire Bridge Framework as it enables researchers to

identify the strengths of both Western and Traditional Knowledges for addressing imminent issues such as climate change.

5.1. Two-Eyed Seeing as an Underlying Approach to Decolonizing Research

The application of a Two-Eyed Seeing approach is critical to decolonizing digital citizen science. This approach requires working closely with Indigenous communities to ensure alignment of research and community priorities, and culturally appropriate knowledge dissemination [35,38,43]. In collaboration with communities, learning where and how specific Western methods or technologies can complement Traditional Indigenous Knowledges and methods is important to advancing our efforts for climate change adaptation and mitigation. For instance, in the FEEDS Project, Traditional Knowledge about the history of climate and weather events, environmental hazards, and shifts in the land, wildlife, and plants serve as indicators of climate change. These shifts have impacted traditional food acquisition practices, food access, and mental and physical health in the communities most adversely impacted [28–31]. In some communities, climate change has led to "positive" effects on food systems, including longer growing seasons [64,65].

Many Indigenous communities, particularly those in rural and remote areas, bear the brunt of climate change impacts [18–22]; however, this also means that these communities have developed invaluable knowledge about climate change adaptation, preparedness, and management [28–30]. Geographic isolation poses a barrier to timely data collection and knowledge sharing in many communities, and digital tools—especially those most widely available, i.e., smartphones—can help with rapid data collection and response [9,11]. Île-à-la-Crosse is better situated than many Indigenous communities in terms of data and WiFi access, which makes the application of this technology more feasible than it may be in other communities. While the experiences of each community regarding climate change impacts on food sovereignty, food security, and mental health differ, the use of digital tools may help bridge some gaps in health equity that result from a lack of access to resources, technology, and support [9,11,16].

It is also important to recognize that the Two-Eyed Seeing approach is not essential to the success of a community project, as an Indigenous-focused lens brings sufficient breadth and depth of knowledge to tackle the complex social and health issues facing Indigenous communities globally. However, where appropriate, Two-Eyed Seeing can be applied to projects where the use of multiple research methods is beneficial. In this context, decolonization has been less commonly referenced as a critical step in applying Two-Eyed Seeing, but decolonization is required if we are to make meaningful change in our systems of research—particularly towards the goals of Indigenous self-governance and data sovereignty [35,39].

5.2. The Potential of Digital Citizen Science for Indigenous Self-Governance and Data Sovereignty

Digital citizen science has transformed citizen science by providing opportunities to collect big data in real time without geographic limitations. For projects using citizen-owned smartphones, widespread data and WiFi access have increased opportunities for citizens to participate in projects globally [9,14,16]. Citizen science projects have typically taken an individualistic approach, whereby citizens gather and share data on their perspectives and observations about a specific area. If we are to bring a decolonized and Indigenous-focused lens to citizen science, the focus must be on the community. Community-oriented data collection, analysis, and knowledge sharing will shift the application of research findings and promote greater participation from marginalized groups [28,43].

For Indigenous communities, in particular, self-determination and self-governance have been long-standing issues because traditional research methods have posed barriers to data access and ownership [35]. Community-based digital citizen science can give communities ownership of their own data so that they have the power to act on this information in the best interests of their community members.

Digital citizen science can be conducted in collaboration with researchers; however, it can also be entirely community-driven using external or self-developed digital platforms [10]. We must consider moving away from traditional models—as academics and researchers we cannot continue to centre our project agendas on academic goalposts. Communities should have the option to reach out for collaborations where this expertise is needed, but keep control over their data and their futures.

In addition to data ownership in research, data sovereignty has become a topic of increasing concern as our numerous digital devices collect data from our social media platforms and applications [66]. Data sovereignty refers to meaningful control or ownership of one's data [66]. Given that citizen science is typically voluntary, there are often unclear parameters around data ownership, privacy, and security [16,67]. A decolonized approach to digital citizen science requires dedicated conversations around data sovereignty, including the development of digital platforms that incorporate nuanced access to citizen and community data [9,11].

5.3. The Role of Digital Tools in Climate Change Adaptation and Preparedness

Digital tools and technology have an important role to play in rapid-response research, particularly climate change research focused in rural and remote areas. Digital devices, such as smartphones, can enhance citizens' access to specific resources or projects to connect with others about issues in their communities. These devices can serve as tools of equity [11], whereby all citizens with either a smartphone or digital connectivity can access essential information or engage on issues of interest. In the FEEDS Project, a custom-built smartphone app is being designed to capture information on specific priority areas, barriers, and opportunities for climate change preparedness and adaptation [40]. Qualitative data collection, which typically takes place in the form of key informant interviews and sharing circles, is also being adapted for digital storytelling following the lead of the Citizen Scientist Advisory Council.

In addition to amplifying citizen voices, digital data collection generates big data which can lead to collaborations across disciplines (i.e., environment, health, social justice) that are necessary for work on climate change adaptation and preparedness. In the FEEDS Project, big data collected by the community (quantitative and qualitative data from smartphones) will be linked to existing databases—including weather data (i.e., Environment and Climate Change Canada) and climate change trackers (i.e., Arctic observatories)—as the combination of historical and prospective data collection will enhance prediction models that can improve local climate preparedness strategies.

This cross-disciplinary collaboration with communities can lead to rapid-response interventions and the design of long-term strategies for climate change preparedness and adaptation. In order for our global efforts to succeed, local participation of multiple sectors is required to design and implement sustainable solutions. Digital tools can help with not only acquiring necessary data to inform this decision-making but also timely knowledge sharing both within and across communities that may be experiencing similar impacts of climate change.

5.4. Challenges and Opportunities in Decolonizing Citizen Science Research

Digital citizen science can aid in timely data collection, rapid-response interventions, and real-time engagement and knowledge dissemination. However, the lack of structured citizen recruitment and data management in most projects can lead to challenges with data quality, ownership, and security [15,67]. Study samples are especially important for research-driven projects; however, structured sampling strategies are not always possible in citizen science projects. Whether the project is community-based or focused on climate change impacts on health, randomized sampling strategies, for instance, may not be ethical or even logistically feasible [68]. In the FEEDS Project, key decision-makers and Knowledge Keepers in the community were first approached to identify appropriate modes of recruitment [39]. An effort is being made to enrol citizens from various sociodemographic (i.e.,

gender, age) and digital literacy categories. Based on the existing venues for communication in the community, the project is being promoted through social media, the Mayor's office, the school board email list, and the local radio station. The Advisory Council advised against randomizing citizen recruitment given the project's focus on climate change impacts on mental health, so that community participation in the project remained open.

Data quality is a challenge for digital citizen science projects as data collection may be less structured (i.e., user-triggered) for some components, and data analysis may need to be more flexible given intermittent data flow. A key consideration for projects focused on urgent, time-sensitive crises like climate change is that the focus cannot and should not be solely on research as a process. If the purpose of conducting this research is to aid in climate change preparedness and adaptation strategies, breaking conventional research protocols is often necessary to address issues in real time, or translate knowledge sooner than an anticipated wave of data collection is completed.

Data ownership is an important component of digital citizen science projects, as it relates to citizen and community data sovereignty. The FEEDS Project is building a system whereby citizen data are anonymous and encrypted to ensure that the OCAP principles of ownership, access, control, and possession over data are followed. The digital dashboard which displays community-level data is shared with decision-makers in real time, and the Mayor's office decides which stakeholders have access to different types of data [40]. The opportunity for real-time data access and communication increases the community's capacity to self-govern.

Of utmost importance for all digital data-based projects is data security and privacy. In order to protect citizens' identity and information, anonymizing data is an essential first step. Some projects, including FEEDS, rely on citizens identifying themselves to receive help; however, this must be made optional so that citizens have control over their information. To further ensure confidentiality, data encryption and limited access to personally identifiable information must be built into digital platform designs. The FEEDS Project also employs a pause feature whereby citizens can disable monitoring for a set duration of time. Secure server space, whether affiliated with a research institute or located locally within a community is part of the essential infrastructure for data security and privacy [9,17].

In addition to data-related concerns, research has identified lower participation of marginalized and lower socioeconomic status groups in citizen science projects [12,43]. Lower participation may be a result of deficits in study recruitment, a history of exploitation that discourages specific groups from engaging in research, and mistrust of research, among other reasons [23,35,43]. Given that these groups are also most likely to be adversely affected by issues like climate change, their participation is critical in digital citizen science projects. Promoting inclusivity and collaboration in this research relies heavily on processes like decolonizing and community-based partnerships, especially if we are to work together as a global society for climate change preparedness, adaptation, and mitigation.

6. Conclusions

Decolonizing citizen science has great potential to respond rapidly to global crises such as climate change. The FEEDS Project provides an example of how citizen science can not only be reimagined with a decolonized lens, but also how data sovereignty and self-governance can be promoted as part of community-driven research.

Decolonizing citizen science is critical to partnering with Indigenous communities in the digital age, and it can also facilitate equity among other marginalized populations and developing countries that have historically been impacted by colonization. The Bridge Framework is one small step in the decolonization of digital citizen science to conduct ethical research with Indigenous and marginalized communities in the 21st century. Digital citizen science, if decolonized, can play a significant role in protecting communities and natural habitats by accelerating action through collaboration between governments and civil society.

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Article

Unsettling the Settler: An Arts-Based Exploration

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Abstract: This article considers how meta-narratives can be created through arts-based educational research as a way to shift personal positions and values, using a monologue called *Unsettling the settler*, written by the author. The creation of meta-narratives that disrupt ideas of national identity, the safety and security of patriarchal and colonial regimes, and who gets to decide what knowledge is worth knowing are essential as antiracist solidarity processes that seek to create belongingness, care and responsibility. This article picks up a thread from a long-term research project in which the author learnt from her participants (actors, audience members and the production team) that performing anti-racist, decolonizing work necessarily begins with an examination of one's positionality (i.e., body/position/identity/race/cultural background, etc.). "Doing the work" means that one must be committed to sitting with discomfort and accept that there are no easy solutions as a part of the process of change.

Keywords: arts-based educational research; monologue; self-study; unsettling the settler

1. Introduction and Context

It is the strangeness of difference—the unfamiliar space of not knowing—that is so hard to tolerate for the colonizer, whose benevolent imperialism assumes both herself or himself as the centre of knowing and that everything can be known. For the colonizer–settler engaged in critical inquiry, there is an inevitable and disturbing moment when the Indigenous teacher or informant speaks. It is a moment of recognition—perhaps unconscious—that some things may be out of one's grasp [1].

How can we, as non-Indigenous people, unsettle ourselves to name and then transform the settler—the colonizer who lurks within—not just in words but by our actions, as we confront the history of colonization, violence, racism, and injustice that remains part of the IRS (Indian residential school) legacy today? [2].

We have to examine the system itself, because the systems were created to reflect the society that put them in place. This means that we put in place laws that reflected what we believe about Indigenous people. What I want people to understand is that even those who support doing away with racism are themselves caught up in a system that almost forces them to continue to adhere to policies and beliefs that come from a history of racism [3].

In *Smallest circles first: Exploring teacher reconciliatory praxis and agency through drama and theatre education in Canada* [4], the experiences of pre- and in-service teachers in Quebec, Canada are examined in order to understand what is possible when seeking to integrate the Truth and Reconciliation Commission's [5] (p. 7) Calls to Action for education (#62 i and #63 i, ii, iii and iv) into Canadian classrooms. The Truth and Reconciliation Commission (TRC) of Canada was officially launched in 2008 as a part of the Indian Residential Schools Agreement. Intended to be a process that would guide Canadians through the discovery of the facts behind the Residential School system. *Smallest circles first* uses posthuman autophenomenological underpinnings [4] and curricular understandings to consider the importance of teacher agency, creativity, and risk taking when centering collaboration with/in communities of belonging. *Sing the brave song: This isn't over!* (STBS) [6] was a play that was created by four volunteer actors as a part of the larger research project

written about in *Smallest circles first*; it articulates the importance of starting with the self when considering one's responsibilities for redress in the decolonizing project in settler societies [7]. In this devised theatre example, arts-based counter-narratives were a way to shift personal positions and values, and to disrupt ideas of national identity and colonial ideologies. Findings from this devised research play indicated that deconstructing one's positionality is an essential first step for understanding antiracist solidarity processes that create belongingness, care and responsibility. In *Smallest circles first*, participants (i.e., pre- and in-service teachers) in the various research projects discussed between 2015 and 2019 consider the privileges they hold as a result of the body/position/identity they inhabit, and how this may be re-inscribing difference in decolonizing/anti-racist work [8]. In this way, a deeper understanding of how systemic racism and oppression in Canada are a politics of positionality [2] become clearer for settler and newcomer participants who experience sitting with discomfort and accepting that there are no easy solutions [9] when they are committed to reconciliatory praxis.

The bounded nature of the play format for STBS provides a mechanism for participants to work within, and a purpose for grappling with the topics being considered. In this context, the participants had to come to some sort of consensus about what needed to be learned and how to present the explorations in a respectful way for an audience. Ultimately, the synthesis of these conversations and explorations is prompted and guided by the playwright/director from STBS, who offers a blueprint for the ways in which other educators who want to take up similar work in their own classrooms might do so. Based on the feedback from the participants that took part during the play creation process, the following steps were deemed to be important when using devised theatre for anti-racist work [4]:

1. start with a personal exploration of one's own positionality and privilege(s) or barriers;
2. be open to learning more about something you may only have a general knowledge of;
3. be prepared to individually and collectively explore the topic/issue through the available texts (through reading, conversation and embodied explorations such as books, news articles, and survivor testimonies), and to listen to these texts (and one another); and
4. actively work to co-create scenes/dialogues around the topics/issues that the individuals and the group need to learn about/explore, as a way to start dialogue and learning.

By researching the experiences of the actors, playwright, stage manager and audience members during the creation and production of *Sing the brave song: This isn't over!* my journey (blinded for peer-review) into understanding how colonization has affected me as a white, cis-gender, able-bodied woman of settler (Scottish-Presbyterian, Irish, Welsh) emerged, and I realized that it needed to be examined and deeply reflected on. In Sherry Bie's [10] PhD dissertation *Unsettling actor: Reading the 94 calls to action out loud*, Bie focuses on Paulette Regan's consternation that "non-Indigenous people (must) unsettle ourselves to name and then transform the settler-the colonizer who lurks within-not just in words but by our actions, as we confront the history of colonization, violence, racism, and injustice that remains part of the IRS legacy . . . " [2] (p. 11). Bie takes this direction to unsettle the settler within by creating a decolonizing space for Indigenous history, as told by Indigenous people themselves, by bringing together professional actors to read aloud the TRC's 94 calls to action (2015) using storywork as a methodology.

When thinking about the original intent of the STBS research-based play, to explore research data from phase one, which explored how drama education with pre-service teachers could explore the educational aims in the TRC, I did not expect to be challenged. However, while observing the participants make sense of their own experiences with white fragility and white tears [11], among other topics as a researcher, I was prompted to seek out more information around race and the triggers that white people experience that cause emotional reactions such as anger, fear or guilt. In order to understand what I was researching, I had to read more about how to (in this example) move reactions that can

reinstate racial equilibrium and maintain racial hierarchies to productive spaces [12–16], so that the audience talk-back session post-performances could lead to generative conversations. Simultaneously, as I learned more, I began teaching about these concerns in my graduate classes for the first time, despite not quite knowing exactly where or how to begin. Byrne [17] refers to this decolonization process of the "white" subject, as one that is different from other decolonizing projects, such as the one described by Smith [18] that focuses on social change. For the white subject, deformation/reformation needs to happen to the "I" or "autobiographical subject" (p. xvii), one that, for white women, addresses hegemony and colonization. The decolonization of the white subject is thus best seen as a subset of a larger project of decolonization: "If a field of 'white studies' exists at all, it is at most a subset of other concerns around 'race' and identity" [19] (p. 117).

As Allan Vicaire, Mi'kmaq from Listuguj and the former director of the First Peoples' House at McGill University, reminded me during our collaborative work using reader's theatre with pre-service teachers to explore Indigenous topics from pre-contact to the present day, we all need to "do the work". "Doing the work" meant (for me) committing, on a continual basis, to accept that actively listening, feeling challenged, uncomfortable, and struggling, is an essential part of engaging in anti-oppression work. Personally, this meant that I had to place myself in a continual state of (un)becoming, and to listen and dwell betwixt and between. I had to learn to unlearn, and be accepting of my own intersectional identities, which sometimes forced me to confront difficult lived experiences, i.e., to experience an "unsettling process", as Paulette Regan [2] describes in *Unsettling the settler within: Indian residential schools, truth telling, and reconciliation in Canada.* Following Regan's [2] example, I have drawn on autoethnographic writing [20,21] in the form of a monologue (which uses playwriting as a form of reflection) and scripted analysis to draw implications. This monologue unearths my own settler colonial heritage as a response to my process connecting to Chamberlin's provocation: If this is your land, where are your stories?

2. Arts-Based Educational Research

The monologue as a form for the exploration of my research and personal questions is a format that is familiar to me as an actor, director, stage manager and producer. I have used the monologue as a convention in several instances as an arts-based educational research (ABER) methodological underpinning that allows one to weave together qualitative approaches and arts-based inquiries and engagements into data collection and representation. ABER offers a way to connect with topics and content using arts-inspired forms. Furthermore, arts-based educational research offers a way to use art to create openings/ruptures for conversation, questioning, and reverberations that other forms of research do not value or prioritize. As I engaged with texts, people, ideas, and emotions during the six years of data collection that led to *Smallest circles first*, I turned to ABER to make visible some of the invisible fears, assumptions, limitations and emotions that I have been confronted with while engaging in decolonizing and anti-racist work. In this way, ABER provides a space for the use of drama and theatre to complicate and create counter-narratives that provoke, promote and provide productive, paradoxical spaces from which new understandings of being and becoming can emerge.

3. Arts-Based Exploration: Monologue

Unsettling the Settler

> *Actor stands in the center of the stage, hands by her side and looks directly at the audience. She is wearing a suit and her hair is pulled back tightly in a bun or low ponytail. She wears pearls.*

> Sometimes I feel stuck.

> *(She pantomimes her feet are glued to the floor and she is using all of her energy to try and get one of them to move off of the ground in order to take a step forward. Screaming,*

she finally collapses to the floor, but her feet are still planted in the same place. She begins to cry, but ends up laughing at the futility of the situation).

I mean, what is the point?

Here I am, trying to move . . . somewhere . . . But, I'm not quite sure where I need to go, or what exactly I need to do . . . and staying still kind of, well, sucks . . . and you know, I'm a runner. I don't generally like to walk places. I love the feeling of getting somewhere fast, and it's practical. It keeps me warm, because I'm always kind of cold. Except, well, you know, in the middle of summer when everyone else has the air conditioning on, and is sipping ice tea, or something stronger, and the ice melts in your glass before you can finish your drink . . . the kind of heat where most people don't want to move! *(She starts to fan herself).*

Well, then I'm ok.

Then, I'm finally warm and happy. It's like I can feel the sun permeating through all of the layers of my skin and muscle and bones, to somewhere deeper, some place inside where if I am warm enough I can find this place that will let me finally relax and feel like I'm . . . me . . . you know- not frozen. *(Carter loosens her hair and take off her suit jacket during this time).*

I'm also not such a bitch then.

Because, well obviously, I'm not frozen . . . or stuck.

(She looks down and tries once more to move her feet, but can't).

AAAArrghhhhhh.

(She looks up at the audience and realizes she has been screaming again and begins to apologize).

Oh, shit. I mean, sorry. This wasn't supposed to happen like this.

No, really.

Really. I'm not normally so . . . so . . . well, you know . . .

Frustrated, er, angry, ah . . . I don't know, you know?

Stuck!

Yes, stuck. This is really hard for me.

I, you know, get paid to know the right thing to say, the right thing to do. To teach other people about interpreting ideas and helping them to think about the ways that they live in relation to thoughts and the world and themselves.

You know? All of that "let's make the world a better place kind of stuff". You know what I'm talking about, right?

(She interacts with the audience until they begin to nod in agreement and launches into one of her lectures on social responsibility—or something impressive).

So phenomenology is when you go back to the thing itself-when you-ok, here- think about this pencil-imagine for a second that you had never seen a pencil before. You don't know what it is, what it does, what it's made of . . . and you get to discover that for the first time.

So . . . What do you do? Do you taste it, smell it? What does that moment of discovery feel like when you figure out its potential?

That subjective experience is emotional and intellectual and thrilling, right?

Then what?

Do you want to share this with someone else? What if it wasn't a pencil you were curious about? What if it was something like, a body, or a language or a feeling . . . like that first moment of falling in love? Amazing, right?

She looks at the audience. Great! Super. Well, exactly! That's me.

Ms. Happy-go-lucky, Ms. glass half full, Ms. "let's do this together". That's the kind of gal I am.

 . . . really . . .

Who am I kidding?

(She sits down on a chair someone brought out when she was talking about phenomenology).

Oh!
Oh.
Hey!
HEY!

(She "goes through the steps of "discovering" the chair as if for the first time, as she just described).

Hey, thanks.
Hhmpf. *(she sits on the chair)*
So, what now?
Do you want me to tell you a story?
About . . . *(she nods her head)* . . .
right.
The one I don't want to.
I know.
Me too. *(there is a long pause)*
Well.
I guess I'm tired. I have *tried* you know?
But now I am *tired* of being here in Québec as an Anglophone.

I don't even get to call myself English here, and I hate feeling like this. I really hate feeling like I never do anything right, that there is this unspoken sense that I don't belong. I feel like I am being treated poorly, and helpless, that there is this government taking away my rights and the opportunities of my children through legislation and those of others— through like what's happening with Bill 21 and the changes to the English schoolboards. But I'm just too tired to try when there is this paternalistic agenda that just keeps moving along no matter what.

But, you know? Even more than this, I hate feeling *like this* because I know I am this white, cis gendered, able bodied woman with so much to be thankful for. I am lucky. And I'm Miss. Glass half-full, Miss. Let's make the world a better place.

And, I know! You look at me and say, what does she have to complain about?

She has a great place to live, her health, a job she loves, a husband and kids and all the things.

And, you're right. Why the fuck should I be up here complaining about feeling stuck when I am privileged? When all the indicators should suggest "it's all good"? She's fine. I'm fine.

Sings:

Altogether now, Grey skies are going to clear up! Put on a happy face. Wipe off those tears and cheer up! Put on a happy face. Wipe off that face of tragedy, it's not your style, and put on a happy face . . . (the last note is drawn out for a long time, as Carter tap dances her way to a grand finale).

It's just that, you know? I'm not. There. I've said it. I don't feel ok . . . or privileged.

I've moved maybe 45 times or more, I can't even remember, in 41 years how many times, and I grew up primarily in NWO where my mom lived . . . my mom still lives in subsidized housing . . . and when I was younger she and my brother and I lived with her and she was on welfare—what else can a single mother with a high school diploma who delivers flyers to support her family do?

I just remember feeling so cold all of the time. Of being outside in the winter, alone in the snow, and my legs and fingers going numb and then warm and there was no one around to tell me not too because no one was there to take care of me. And I just wanted this home that I thought everyone else had. Not someone knocking on our crappy townhouse door delivering a Christmas hamper. My Christmas presents used to be labelled "Girl" 10–12 years old.

But now, I buy someone else's fucking Christmas turkey and deliver the hampers. Every year. Every year I wonder if it's because I am trying to erase that from happening to me or to do something kind for a family during the holidays.

Every year I wonder if I will finally be able to forget about having to use flour and water to make pasta for my brother and I for dinner for nights in a row, when we were left alone as children and the heat went out. I don't want that to be a part of my story. I don't want to be that little girl who was so scared to speak that the school nurse gave her a second round of immunizations because the adults in her life neglected her.

That's all, you know? Inside of me. And I have tried never to share that part of me *(Carter takes off her blouse and dress pants and puts on a comfortable flowing dress and lets her hair down. She stands barefoot).* I want to be me, but I am tired.

And so, when I start thinking about truth and reconciliation, or social justice and teacher agency, or seeing something for the first time . . . like me . . .

I'm broken. I miss this home I never even had. I miss knowing my extended family because we moved so much and then I went away to University which was following my heart but, also running away.

I feel stuck between these places that I don't know how to bring together, or accept.

I started my research to open up conversations about the things that need to change in Canada so that all people can find a way to be together.

But, the truth is, I can't help anyone because I am hurt. I need to forgive and I need to be forgiven.

The truth is, reconciliation is my story too and I am afraid that if I can't figure out how to heal me, and the trauma I experienced, I have no right doing this work. This research.

But I have struggled to forgive lots of people; and sometimes I think I have. But sometimes the person who I feel has done this significant "wrong" doesn't really understand the extent of pain they caused for what they did. And I wonder if that's what this means.

> *How can the people who inflict the pain ever really be forgiven, if they don't really truly understand how it feels?*

How can reconciliation take place if you never really believe you did something wrong because your truth needs something else to exist? You'll never understand the pain your decisions caused.

But, I do.

I do.

And sometimes, I know the politicians who talk about the TRC just don't comprehend what they are asking in the calls to action. Like, this book about "Reconciliation: The false truth of Trudeau's sunny ways" that talks about this notion that colonial states make for poor friends. You Know? "Colonialism is not a 'behaviour' that can be superficially changed by a prime minister professing 'sunny ways,'" or for us tearful Prime Minister who cries while saying all of the right things, but is fundamentally re-inscribing the status quo through the existing foundational system in Canada.

All I know, is that it hurts to open up the scars and to dig out the poison that lies inside. That hurt and painful experience that has been laying there for so long. *(She begins to pick at her arm trying to dig out the "poison").* I know it's there. I know its sitting just beneath the surface. But its pooled there in a spot and If you don't touch it it can't spread everywhere again. See? SEE? The scar? Its healed, as much as it can.

Why do you want to open it up? Why are you asking me to be brave?

Does it make you feel better? Does it look like it makes me feel better? I bet its easier than actually doing the real work.

That's the truth. That's what you're asking. You're asking people to open up their trauma, to rip out those emotions and memories and then to leave us standing here, stuck to figure out our own next steps. *(She throws the chair she was sitting on and again falls to the ground).*

***

I thought about it for a few months. I imagined moving away and teaching in a small town and living this simple life. But, I gave my heart to the work I'm doing, and I don't understand why,

So, I just can't. But, I'd love to be able to.

But, I can't because I have this feeling inside that things can be different. That something has to change and that it is happening and it's going to be better for more people and systems.

That we need the conversations where we stumble and try to understand something differently than before. That we, you know feel unsettled and stuck but then . . .

(the child who brought out the chair returns and smiles holding out a hand. She looks down at her arm).

My grandfather lost a leg in the second world war and lived with the phantom pain for the rest of his life. Those things-you know- those stories that make up a life, they give this narrative inheritance for going on.

Maybe we re-write this story together and the pain and the joy, and the being stuck and unstuck are all just parts of the larger narrative we learn to tell.

Maybe those stories I don't want to be mine, that I feel ashamed to tell, are trying to tell me something. And it's hard to listen to them, and to accept that they are mine. But, maybe my stories are trying to teach me that the journey of truth and reconciliation needs to start with me, and that's the only story I can tell.

What's yours?

4. Analysis: Unpacking the Monologue

This monologue was written during the COVID-19 pandemic lockdown in 2020, while I was simultaneously working on the data analysis and writing *Smallest circles first.* As I dug deeper into researching "truth" and "reconciliation", the theme of "forgiveness" continually came up. In parallel to the experiences of my participants in this work, I was simultaneously living through my own reckoning with childhood traumas and triggers, and finding way(s) to forgive. In order for me to focus on my research, I turned to writing about my own experiences—which were also related to being of settler descent—which emerged in the piece: *Unsettling the settler.* Jan Hare [20] contends that in order for the settler to move beyond reconciliation as a conceptual understanding that leads to absolution, one's active participation is needed. Writing a monologue exploring my experiences with the challenge of being "unsettled" while learning more about the TRC and how pre- and in-service teachers could take up this work in their classrooms was an active experience for me, which—as I have described—helped me to move from feeling "stuck" to "unstuck":

Maybe we re-write this story together and the pain and the joy, and the being stuck and unstuck are all just parts of the larger narrative we learn to tell.

Maybe those stories I don't want to be mine, that I feel ashamed to tell, are trying to tell me something. And it's hard to listen to them, and to accept that they are mine. But, maybe my stories are trying to teach me that the journey of truth and reconciliation needs to start with me, and that's the only story I can tell.

The reflections and understandings that emerged in the monologue require a confrontation of one's own experiences that inhibit engagement because of personal pain and hurt, and an acceptance of the self in order to engage with others.

Derrida talks about going beyond the feelings when thinking about reconciliation and forgiveness. He says that we need to move beyond those emotions in order to change the systems of oppression that Foucault describes being re-inscribed into institutional forms of oppression after struggles around issues take place.

We must all confront the truth of our shared his/her/their stories in order to

Open up the scars and to dig out the poison that lays inside. That hurt and painful experience that has been laying there for so long (She begins to pick at her arm trying to

dig out the "poison"). I know it's there. I know its sitting just beneath the surface. But its pooled there in a spot and If you don't touch it it can't spread everywhere again. See? SEE? The scar? Its healed, as much as it can.

The embodied and visceral description and experience, when putting this monologue on its feet (i.e., rehearsing it in an embodied way rather than just reading it aloud, in preparation for performance), of "digging out the poison" moved the ideas of reconciliation and forgiveness from conceptual understandings for me, to active engagements. Active engagement in reconciliatory praxis through a theoretical and arts-based lens offers a way in which to engage in the discussing topics with others and making connections between experiences. By exploring the actor's "not-me and not-not-me" [21] (p. 72) through *Unsettling the settler,* I was able to consider the four steps for engaging in ABER that participants I observed experienced when creating their devised theatre piece. Specifically:

1. I began with my personal exploration of my positionality, privilege(s) and barriers, as the character in this monologue literally and figuratively goes from a "stuck" person with pearls, hair tightly wound, and uncomfortable heels to someone who names their own fears and trauma in order to let their power go (i.e., being abandoned as a child and growing up in poverty).

2. I had to confront the fact that I had to learn and grow as a result of what I was researching (i.e., to be open to learning more about something I may only have a general knowledge of) because the research participants were going deeper into their engagement with the TRC, systemic racism in Canada, and anti-oppressive language. In order for me to honour and listen to the stories of my participants, I also had to learn and grow and listen (i.e., "do the work").

3. I had to individually read more books and texts on race, racism, anti-oppression and anti-oppressive language; then, I had to participate in reading groups and bring these conversations into my own classes.

5. Reflections

Unsettling is a work in progress. It is a making and a remaking. It is about learning to be vulnerable and to listen. For me, it has also been an acceptance of my own experiences and a journey into forgiveness. This is a process that has felt painful at times. It has also been a process of learning to listen to the voices and stories of others. I have had to find my own voice, and had to learn to speak when the time for truth is in season. As Patsy Rodenburg reminds us: "More and more today we are in danger of losing our voices for the simple reason that we are losing our connection to oracy. Perhaps we need to conserve the traditions of oracy like we would a precious rainforest. Both transform the air we breathe into a capacity for words" [22] (p. 23). Beyond writing *Unsettling the settler,* performing and speaking this monologue aloud is an unearthing process, in which I engage in an experience of bodily affect (bringing hope into action); as the body and mind relax, the breath is deepened, and encounters with text in my mouth dance between the silences that resonate in my body and in the spaces I occupy. Sharing a monologue with an audience is both a gift and an act of vulnerability, a waiting for a response that might never come, an offering that you alone can give and which might not be accepted. Engaging with the TRC's calls to action, learning more about anti-oppressive language, and reading texts with unfamiliar cultural contexts are movements, and without movement there can be no restitution or redress.

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"Now Is the Time to Start Reconciliation, and We Are the People to Do So", Walking the Path of an Anti-Racist White Ally

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Abstract: Media accounts of hundreds of unmarked graves of children at the sites of residential schools in Canada in 2021 is one more urgent call for all Canadians to start walking the path for reconciliation, decolonization, and anti-racism. In this exploratory reflection utilizing hermeneutical phenomenology, my journey to reconciliation is described. Through a review of Indigenous law and sovereignty, Canadian numbered treaties, and residential schools, this article explores justice, discovering the truth, and advancing reconciliation. In order to achieve justice, first ethnocentrism, or our evaluation of Indigenous cultures according to our preconceived preference for our own standards and customs, must be recognized, exposed, and set aside. Without our own ethnocentric attachment, and consequently with an open mind, we can hear the truth of Indigenous peoples and internalize it. Examples include the truth of the treaties and residential schools. The reconciliation path entails pursuing justice; this includes recognizing both Indigenous sovereignty and Indigenous law. This path doesn't 'restore' relations historically, but does build reconciliation for the future. However, the process will not be comfortable. The reward will be a more equitable and inclusive society.

Keywords: reconciliation; anti-racism; anti-racist ally

1. Introduction

All Canadians have a role in the process of reconciliation. Perhaps there are greater and lesser roles, but each of us have a part to play. It is my hope that advancing anti-racism and supporting equity and justice as a white woman in Canada contributes to reconciliation. This paper explores my personal, never-ending, decolonization story. It is an exploratory reflection utilizing hermeneutical phenomenology through which I create a framework of justice and truth for reconciliation. This conceptual paper briefly outlines my method, explores in the 'Results' section my conception of justice and truth in relation to Canadian Indigenous peoples, and describes what reconciliation is not, and what my envisioned pathway forward is.

My journey has been, and continues to be in learning, reflecting, hearing, and challenging colonization and racism, and being a supporter and ally, whenever and wherever possible. Joining together with Indigenous voices and actions, learning and practicing Indigenous customs and traditions with Indigenous people, and ensuring Indigenous voices are heard are fundamental ally activities. This paper is an exploratory reflection as a white settler on my privilege, by interrogating and considering justice and its practices, and walking the path advancing reconciliation.

As a policy scholar, my actions as an ally are also meant to support Canadian Indigenous policy objectives. One of the guiding principles of the Calls to Action of the Truth and Reconciliation Report (issued in 2015) is the requirement for constructive action to address the ongoing legacies of colonialism that have had destructive impacts on all aspects of Indigenous peoples' lives including their cultures, languages, education, health, justice, and economic opportunities and prosperity; reconciliation is defined as "an ongoing process of establishing and maintaining respectful relationships" [1], p. 16. This is followed by a call

to create a more equitable and inclusive society in order to close the gap in social, health, and economic outcomes between Indigenous and non-Indigenous peoples. While 80% of the 94 Calls to Action are now completed or well underway, many Indigenous people feel action has been too slow.

After the report of the Truth and Reconciliation Commission (TRC, Winnipeg, MB, Canada), I searched for the same understanding of my part in acknowledging and enhancing the change called for by the Commission: pursuing reconciliation. The TRC's report [1] is only one starting point. There is an evolving, diverse Indigenous conversation occurring in Canada, reflecting the dynamic process of reconciliation, healing, and justice between Indigenous peoples and Canada. It is not unitary, it is not static, and it is not for me, or Canada, to determine, but instead to only listen to and support Indigenous people. As advocates of justice and in order to be a white ally, hearing these voices and engaging in an ethical practice that includes truth and justice, will allow us to find where we fit into the interconnected web of reconciliation. This paper details my forty-year practice of justice (first as a lawyer and later as an academic). Through this reflection, and as a consequence of it, I build a conception of Canadian–Indigenous reconciliation.

2. Materials and Methods

This paper is an exploratory reflection utilizing hermeneutical phenomenology as well as textual decentering; with this method, I focus on my subjective lived experience and meaning making in regards to Indigenous people in Canada [2]. I specifically consider the texts of Canadian law, the Canadian number treaties, and documents surrounding residential schools. This method's strength is that it allows for deep introspection and reflection, unavailable in other methods. The limitation of this method is its bias; it is personal, and as such can only be replicated by another's choice.

In my journey to advance constructive actions addressing the legacies of colonialism and creating a more equitable and inclusive society, I attempt to set aside my ethno-centrism and pre-understanding of normative Canadian legal truth in relation to our legal and justice system, and problematize this system in a praxis of post-colonialism [3]. Ethnocentrism fuels our evaluation of Indigenous cultures according to our pre-conceived preference for our own standards and customs. As a result, in order to 'set ethnocentrism aside,' first it must be recognized and exposed. This act then allows us to hear Indigenous people's voices. After this, in order to walk the path as an ally, I explore conceptions of justice, truth, and reconciliation. I chose this order because it reflects my personal journey of reflection as a lawyer with pursuing what is and should be 'justice,' which then led to my struggle with the 'truth' (and specifically whose truth?), and lastly, what reconciliation is and what I can do to advance it.

A foundational journey is first pursuing justice reflexively, the meaning of justice, and then embracing truth, which can only occur through active listening. Although there are many substantive matters that require active listening to hear Indigenous truth, in this reflective journey I consider treaties and the residential school system. I choose these examples as they have had the most impact on me personally. The section ends with two observations concerning reconciliation: it is not simply 'restoring' relations to a previous time or place, nor is it necessarily comfortable.

3. Results

3.1. Justice

My path to reconciliation will be explored first through the active pursuit of justice. First, I recognize and explain the importance of ethnocentrism; this is a prerequisite to the following overview of Indigenous law and Indigenous sovereignty and is required for achieving justice.

For me, the study and advancement of justice has always started as an internal process. As a lawyer, this is my passion and was the starting point of my journey. First, recognizing and deeply questioning our own ethnocentrism on a continuing basis is required. For

example, I continuously reconsider my preference for a materialistic lifestyle, an urban living environment, and a Eurocentric educational system. Second, it is necessary to consider the many sides of issues and recognizing that majority opinions on issues may not be the same as 'justice.' For example, my practice in law taught me that when receiving a court's ultimate decision, people involved in court disputes rarely believe they have achieved justice. Criminal and civil legal disputes are premised on deep disagreements between parties that engender the expense of lawyers, the goal of legal redemption in court, and generally inflexible 'win-win' strategies. This legal mindset prevents compromise, restitution, or restoration of relationships [4]. After years in court, even favorable decisions are mired in delay and cost, and does not leave any participants feeling particularly victorious. For this reason, I reconsidered my career of justice, leaving 18 years of practicing law, and moved into academia in 2005. Free of the constraints of a Eurocentric court system determining 'justice', in academia I could write about, study, and explore justice.

3.1.1. Acknowledge Ethnocentrism and Practice De-Colonization

The first requirement of understanding and advancing 'justice' is recognizing our own ethnocentrism, or our preference for practices and values that reflect the dominant culture and our own culture, in that order. Recognizing the confines of our values, norms, experiences, and perspectives and understanding how normative our thinking is and the confines of our own values, norms, experiences, and perspectives are preconditions for pursuing and advancing justice [4]. Setting aside our ethnocentrism allows us to critique how inclusive, equitable, and accepting our Canadian institutions really are. With our pre-conceived favoritism towards all things which reflect our perceptions of Canadian culture, we can make space to listen to Indigenous people and learn about Indigenous sovereignty and Indigenous law.

As a practicing lawyer, one of my first encounters with my ethnocentrism was studying for my Masters of Constitutional Law, wherein I considered Indigenous claims of Sovereignty and the recognition of inherent Indigenous law. While my traditional law degree obtained in the 1980s and legal practice had always recognized the supremacy of Canadian law, steeped in British constitutional and common law, my thinking of what exactly was Canadian law expanded. For me, Canadian law now includes Indigenous sovereignty and inherent Indigenous law, which I explain below.

3.1.2. Justice Is Indigenous Sovereignty

Indigenous sovereignty is Indigenous identity as nations, communities, and individuals, and the inherent power or natural right to define, perpetuate, and sustain these identities is a political, legal, and human right [5]. The natural expression of sovereignty is self-determination, which in Canada is often expressed as self-government [5]. In Canada, self-government at the community level, as well as the power to generate Indigenous law, an inherent Indigenous right, is protected by section 35 of the Constitution Act, 1982 recognized in Tsilhqot'in Nation v. British Columbia [6]. It is also embedded in the Indian Act with election codes (s. 74 Indian Act). Although pre-existing, Indigenous rights were formally recognized in Canada's constitution in 1982 and subsequent court decisions (especially the Supreme Court of Canada) and legal scholarship have considerably advanced in the past few decades [7,8]. Although historically interpreted narrowly, increasingly case law has expanded Indigenous rights to include self-determination. The recognition of Indigenous peoplehood has been centered in the developing international law of self-determination; for Indigenous people self-determination has been choosing how they relate to the settler colonial state and economy. Linked to sovereignty, self-determination means Indigenous people are able to make their own decisions [9] and own governance.

Indigenous groups are rebuilding traditional systems of governance characterized by key roles for spirituality, community, and tradition which increase citizen participation and Nation building. The 1973 Calder court case recognized Indigenous titles and prompted the negotiation of modern treaties, including the Nisga'a Treaty of 2000 [10]. Currently

there are 25 self-government agreements that grant law-making powers in key policy areas, with another 50 in the process of negotiation [11]. Generally, these agreements grant self-government for a territory that jurisdictionally gains autonomy [12]. In the UNDRIP, self-determination focuses on collective rights, social security, and the political and economic rights of Indigenous people, not just in respect to territorial succession [13].

The path for transformation through sovereignty and self-determination is neither clear nor easy. For example, a current conflict over a natural gas pipeline, the Coastal Gaslink pipeline, in British Columbia (B.C.) in Wet'suwet'en unceded territory is illustrative. The Wet'suwet'en were parties in the Delgamuukw decision recognizing unceded territories and Indigenous titles, issues which still have not been resolved with the federal government. Proposed to run from Dawson Creek, B.C. through Wet'suwet'en territory to Kitimat on the coast of B.C., 20 elected First Nation councils (pursuant to the *Indian Act*, R.S.C., 1985, c. I-5.) have signed benefit agreements, but traditional hereditary Chiefs and Indigenous groups across Canada have protested in demonstrations and blockades [14]. Matrilineal traditional Chiefs have since been stripped of their title (although this is in dispute) [14].

3.1.3. Justice Recognizes Indigenous Law

For many Indigenous people in Canada, Indigenous laws and legal orders are the law and have been since time immemorial [15–17]. Some examples and specifics of these laws include the property and sovereignty laws discussed below. For jurisprudential scholars, and those for whom there is only one official version of the law, laws require recognition by courts and legislatures. However, for legal pluralists, a 'living law' or the set of rules that are actually followed by individuals in social life is recognized, which may be very different than the official version of the law [4]. For example, in reconciling water interests in times of drought in the prairie provinces, priority practices diverge from legal water rights [18]. This living law is important in conceptualizing the multiple levels of legal governance existing in a country like Canada, and also for advancing legal reform that recognizes and empowers Indigenous people, as well as their law and customs. In 2019 Miller wrote of experiencing 'shock' when attending law school and learning of the European 'doctrine of discovery' (which was at one time law in Canada), whereby the state owned all land legally vacant upon discovery (because in European law, Indigenous people were not recognized as occupants) [16]. Now the doctrine of discovery has long since been set aside and Indigenous laws recognized, through the advocacy of Indigenous peoples and lawyers [15,19,20].

Legal pluralism recognizes more than one legal system in the same social field [21], such as the concurrent recognition of the federal, state, or provincial and local or municipal law; while each has a separate jurisdiction (although local or municipal systems derive authority from the province) in matters of land, property, or water, each jurisdiction plays a role [22]. Similarly, formal state-run systems of courts and judges co-exist with normative orders established by social rules of groups and communities [21]. In Canada this is reflected by the Canadian civil and common law system whereby French civil and English common law co-exist in Quebec. This precedent exists and allows space for Indigenous culturally specific values, norms, and laws to also exist [15]. For Indigenous scholars, and for me personally, Indigenous laws move beyond pluralism to parallel expressions of self-determination, overlapping with often incommensurable claims to those of the Canadian State [23]. In the words of James Sakej Youngblood Henderson [24]:

The task of Indigenous peoples is to encourage diversity as the prime assumption of legal systems, and to resist any false universality, despite the consequences of existing legal theory (49).

In Australia, Indigenous law includes customary law, government law that specifically and only affects Indigenous people and the relationship between Indigenous people, and customary law and the general common and statue law of Australia [25] (University of Melbourne, 2021). However, in Canada, Indigenous law is defined narrowly as "a source of law apart from the common and civil legal traditions in Canada" [26] (White

2021) or Indigenous people's own legal systems. However, for the purpose of this paper, because Indigenous law and Indigenous onto-epistemologies are the foci for agency and reimagining law, this narrow definition of exclusion is not used, and one more akin to the Australian conception used in this paper. Instead of the narrow Canadian definition, a vision of Indigenous law that is 'braided' is my preference:

The braiding of Indigenous law with international and national law is thus a unique undertaking that helps us to reconceive the very idea of law. As suggested, Indigenous Peoples' law questions the claims of both international and national laws to universality and supremacy. Law can be multidirectional in sources and applications. It might be created by clans, flow from experiences with glaciers or rivers, or be sourced in custom and grassroots practices, as well as being created by legislatures, courts and executive authorities [27].

3.2. Truth

Special regard for the perspectives of the marginalized, poor, and Indigenous people are required as these are often not heard in the legal system and in other systems including education. Recognition of Indigenous peoples' perspectives on the Treaty is central. After an 18-year legal practice, moving from court-decreed and statute law to a living law has been a reflexive journey. After law school and legal practice, I continued to read and interpret numbered Canadian treaties based on traditional contract law and common law interpretations. The practice of law, and my providing a 'legal' opinion would require this, but listening to and hearing Indigenous peoples gives rise to a different 'truth'.

3.2.1. The Treaties

My treaty journey started several years ago, when the Saskatchewan Treaty Commissioner created an education package for Saskatchewan residents based on the understanding that "We are all Treaty People." This is true for all people living where treaties exist (which covers most of Canada with numbered treaties, B.C. with several modern treaties, and the North). For me, this phrase reconfirmed the part I play as a descendent of white European settlers in continuing the knowledge, traditions, respect, and relations of the treaties. However, my knowledge and understanding of the treaties changed over time by deep listening to Indigenous peoples' knowledge and understanding of the treaties.

While completing my Master's in Constitutional Law, I learned about treaties and about the special relation of Indigenous peoples within Canada because of the Royal Proclamation of 1763. However, my learning was overshadowed by my other learning of law and the power of the written word and rules of contract law (laws of agreement between people). Even after law school, my legal training and work as a lawyer required that my legal 'opinions' be grounded in the written word and analysis including our Constitution, governments' statutes, and written court decisions of judges. My legal advice and personal thinking of any legal issue continuously existed within the logic of how a court of law would resolve the legal issue. In this realm, the written word and its plain meaning reigned supreme. As an example, the provision of a 'medicine bundle' in a treaty would be literally interpreted in Eurocentric law as a medicine bundle (perhaps a first aid kit) and not the Indigenous interpretation of access to the State health care system.

After leaving the practice of law, I learned that from an Indigenous perspective, a treaty evolves through continuous discussion, a process of verbal clarification, until a common understanding is arrived at [28]. Oral traditions of the spoken word and oral history is as important and binding as the written word [28]. The recollection of a treaty is a collective memory, not an 'individual' one [29]. All of these practices and traditions are different from the legal rules learned in law school. However, when considering the treaty's relation and historical agreement they cannot be dismissed.

Where I was born, in the lands of Treaty Six, the treaty document is in standard legalese, but the discussions centered on the elimination of the Buffalo, the starvation, disease, and poverty of Indigenous peoples, peace between nations, and the increasing numbers of

white people arriving [29]. There is no mention of land surrender in the recorded speeches at the time of treaty making and there are no words in Cree for the English terms of cede, surrender, or release [28]. In fact, Pound Maker is recorded as stating that the land could not be cut off and taken [30]. This statement is consistent with Indigenous perspectives on kinship and land use (not ownership) [31].

3.2.2. Residential Schools

Destroying or permanently crippling a human group is considered genocide by law [32]. Specific acts of forcibly transferring children of one group to another group also qualifies in international law [33]. In Canada, residential schools were created in the late 19th Century, continuing until 1996 with the colonial purpose of 'preparing Indians for a life without Indian-ness' [29], p. 102. John A. MacDonald, then Prime Minister of Canada, made a speech in the House of Commons in 1883 outlining why Indigenous children had to leave their homes and enter a residential school, as the child would otherwise be surrounded by 'savages' and would simply be a savage who could read and write, and it was necessary to withdraw children from parental influence in central training industrial schools to acquire "the habits and modes of thought of white men" [34], p. 1108. These colonizing and hurtful statements leave no doubt as to the genocidal goals of residential school laws and policy.

While the discovery of 182 unmarked graves at a former residential school in British Columbia and 751 unmarked graves in Cowesses First Nation in Saskatchewan [35] brought global attention to the atrocities committed in residential schools in Canada, Indigenous peoples have always known these circumstances. The Principal Sinclair of the Regina Indian Industrial School (Regina, Saskatchewan) believed that parents were reluctant to send their children to the school due to death and illness, and in fact between 1891 and 1910, 20% of RIIS student that were enrolled died [36]. Reverend W.S. Moore noted that when he served at Muscowpetung near Fort Qu'Appelle, 17 of 20 children that he sent to the RIIS died at the school or left in a dying condition, and also cited reports of children being abused [36], p. 79.

3.3. Reconciliation

Now, in the 21st century, it is impossible to restore Canada to a previous era. In order to achieve restoration, all people affected must participate in a healing process with an open mind and an open heart. Perhaps it is not so much restoring as it is creating balance and justice in Indigenous–Canadian relations? I spend a lot of time reflecting on what I can do to advance the truth, reconciliation, and healing. A good starting point is to do our utmost to listen and to really hear the experiences and legal thoughts of Indigenous peoples. Attending Indigenous events when invited, including cultural days, pow wows, ceremonies, and residential school memorials, are examples. Reading the TRC report is one starting point in the journey. Reviewing these truths and really hearing them involves invoking an ethical practice. Ethical practice requires, in large part, listening and setting aside judgement, pre-conceived biases and potential ethnocentrism. In order to do this, people continuously revisit the report's Calls to Action, formally incorporating this practice in their activities including board meetings, setting the educational curriculum and syllabi, and setting conference or workshop agendas.

3.3.1. Reconciliation Is Not Restorative Justice

Making sure I do not advance stereotypes and further misunderstanding is important. It is critical not to conflate Indigenous law and reconciliation with restorative justice. There are some restorative justice characteristics that reflect community justice, which will be discussed. However, reconciliation is much more than that.

Fundamentally, the practice of restorative justice is carried out within the community, by the community, and specifically by those people impacted by disagreements, conflicts, and harms. So, while people practicing restorative justice essentially take back the 'practice'

of justice from structures that have excluded them (the law profession, the police, the courts [37]), so too do Indigenous people practicing Indigenous justice practices (see Section 3.1). People practicing restorative justice are reclaiming conflict and its resolution, just as Indigenous people practicing Indigenous justice are reclaiming conflict from colonial state institutions and reclaiming Indigenous law and justice.

While restorative justice in mainstream Canadian institutions emerged as an appendix to the criminal justice system [38], it has evolved as a term that is interchangeable with community justice, peacemaking, or collaborative problem solving; restorative justice requires conflict to be embraced without delegating to professionals, the government, and the police; that social problems be recognized and interpersonal problems be situated within this broader context, that individuals participate actively in the resolution of conflict, and that no harm should be done to the most powerless and that the most powerless be protected [4]. Most importantly, restorative justice is about relationship building and collaborative problem solving [4].

Indigenous justice has been practiced well before Canadian restorative justice. Elder Phil Gatensby [39] describes transformational practices designed in the community that create the opportunity for participants to understand the world around them and themselves better. These practices seek to uncover resources that lie within each of us, to build an awareness of power and how to harness it to address imbalances that challenge human beings every day. In Hollow Water Manitoba, communities find their own solutions to problems, and through the process, community members recognize how they have drifted out of balance and are challenged to work towards balance that grows from their Indigenous traditions [40]. Through Gatensby's work, academic reconciliation work is enriched and Indigenous communities have been enriched.

3.3.2. Reconciliation Is Not Comfortable

Advancing reconciliation as an ally entails confronting colonialism, often re-learning Canada's history, and listening to and supporting Indigenous peoples. For many, confronting colonialism today is uncomfortable as it disrupts our patriotism and pride in being Canadian in order to recognize that our Canadian institutions are products of, and perpetuate, colonial structures. Critically assessing and acknowledging current racist practices is difficult because it involves rethinking practices that we have taken part in and are part of, that we believe are just.

Re-learning Canada's history is also difficult. Most recently, in many communities across Canada, statutes of John A. McDonald have been removed, but not without discussion. For some, the reigning Prime Minister when Canada formed as a nation garners recognition and respect, and they find it difficult to reject this figure totally given his role in creating residential schools (see Section 3.1). However, for residential school survivors and their descendants, seeing this figure elevated in status and commemorated in public places with a statute is re-traumatizing. Being an ally involves interrogating oneself and being true to one's own complicity in colonial and racialized structures, that as a white woman I benefit from, even though I do not intend to. Being an ally requires listening to, acknowledging, respecting, and supporting the wishes of Indigenous people. It also includes breaking the stereotypes and shattering the barriers that exist in our Canadian Institutions, and being open and accepting of Indigenous people. Removing a historical statute is a small gesture in our journey of reconciliation.

4. Walking the Path

I believe the path to reconciliation will entail significant transformative change. Indigenous peoples will need to be in the driving seat to determine what and where this path is leading—with support from allies where possible. This paper is a starting point in identifying how a white settler woman can reflect on reconciliation and what a white settler woman can do. I am a supporter, an ally, walking beside people on this path—not standing in front or hiding behind—I am a part of the cheering crowd on the sidelines.

One day, Canada may achieve formal justice. This will be a world without oppression and discrimination; a world where everyone has the same opportunities and life chances. In this world, Indigenous peoples and visible minorities will not be over-incarcerated and under-represented in our most rewarding occupations. Indigenous sovereignty and Indigenous law are part of this imaginary future.

Although my role and responsibility of being an ally for Indigenous reconciliation is not always clear (given that Indigenous People are the leaders), I do know that for me, reconciliation will not be 'restoring' a relationship and nor will it necessarily be 'comfortable.' The United Nations Declaration of the Rights of Indigenous Peoples (UNDRIP) [38] offers such a legal avenue (so I acknowledge that sometimes advancing rights through court processes are necessary to achieve reconciliation).

UNDRIP [41] is advancing international Indigenous law and rights. UNDRIP introduced the Right to Free, Prior, and Informed Consent (FPIC) for Indigenous Peoples, with Canada becoming a signatory in 2016. In UNDRIP, duties of 'consultation' are raised to requirements of 'consent.' Article 32.1 states that FPIC is to be obtained prior to the approval of any project affecting Indigenous lands or territories in connection with the development, utilization, or exploitation of minerals, water, or other resources [42–44]. UNDRIP moves beyond the conception of the State granting and distributing rights to people in a Rawlsian distributivist conception of justice (with the state as an arbitrator of conflict and protector of individual rights) and embraces recognition justice [45]. Recognition is key in engaging with the 'other' when two groups with fundamentally different ontological positions, aims, and goals exist [46]. Recognition, in accordance with Indigenous law, does not aim to overcome each other's position, but the recognition of and respect for difference, leading to more meaningful engagement and justice [47], applying the *Sui Generis* principles of parallelism. UNDRIP opens a window for advancing parallelism and honoring the traditions of Indigenous law in imagining a path forward for Earth system law.

5. Conclusions

The path to reconciliation entails significant justice. However, it is for Indigenous peoples to determine their part in this path for themselves—with support from allies where possible. This paper is a starting point in identifying what a white settler woman can do in the supporting role of ally. This paper is a conceptual paper based on my forty-year legal and academic practice of justice. Through exploratory reflection utilizing hermeneutical phenomenology, I set the foundation of truth in relation to numbered Canadian treaties and residential schools in Canada. By hearing the truth, the path for achieving Indigenous law and sovereignty is advanced towards finally achieving reconciliation, although it may not be comfortable or a restoration to prior times.

Acting as an ally, I support Indigenous people and their journey. One day, Canada may achieve reconciliation and formal justice. This will be a world without oppression and discrimination; a world where everyone has the same opportunities and life chances. In this world, Indigenous peoples will not be over-incarcerated and under-represented in our most rewarding occupations. This path will not be based on restoring a previous relationship, and it will not necessarily be comfortable. It will involve hearing Indigenous peoples' truth and recognizing Indigenous sovereignty and Indigenous law.

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