

“What is language for us?”

The role of relational technology, strength-based language education, and community-led language planning and policy research to support Indigenous language revitalization and cultural reclamation processes

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Abstract in English

This manuscript-based thesis explores the role and impact of relational technology, strength-based language education, and community-led language planning and policy research in a pilot project to support Indigenous language revitalization and reclamation processes. Following an Indigenous research paradigm and decolonizing methodologies, this thesis introduces an immersive, community-led Indigenous language acquisition approach—*TEK-nology* (Traditional Ecological Knowledge (TEK) and technology)—to support Anishinaabemowin language revitalization and reclamation in the Canadian context. The purpose of the *TEK-nology* pilot project is to explore the practical application of a self-determined, technology-enabled language and knowledge acquisition approach rooted in Indigenous worldviews. This thesis offers three primary original contributions to the field of language education and language planning and policy at three interconnected and interdisciplinary levels of analysis and praxis: (1) *TEK-nology* as a language acquisition and knowledge transmission approach; (2) *Dùthchas*, a Scottish Gaelic kincentric methodology for community-led research in-relation praxis; and (3) *TEK-nology* as online community-based language planning. The research demonstrates: (1) the potential and impact of grounding language acquisition and knowledge transmission in Indigenous worldviews, relational technology use, and strength-based language acquisition indicators; (2) ways in which researchers who are not Indigenous to the lands on which they work can collaborate in a more ethical and mutually beneficial manner with Indigenous Peoples and communities; and (3) ways in which federal and provincial language education planning and policy could be improved to address inequities and marginalization of Indigenous Peoples in the educational system. The community-led *TEK-nology* pilot project has implications for more equitable and self-determined language education, language planning and policy research, and

community-led methods and methodologies. The *TEK-nology* approach and pilot project demonstrates that community-led, relational technology and immersive, strength-based Indigenous language acquisition can support Anishinaabemowin language revitalization and reclamation and foster more equitable multicultural and multilingual education practice and policy in the Canadian context. The research also illustrates how *TEK-nology*, as an online self-determined site of praxis and community-based language planning model, can inform more community-led, technology-enabled Indigenous language revitalization and reclamation initiatives worldwide and more equitable language policies and legislation at a territorial, provincial, and federal level. Finally, the implications of Dùthchas as in-relation methodology and kincentric praxis can inform ways in which researchers can foster, improve, and uphold enplaced ethical and mutually respectful Indigenous—non-Indigenous to Turtle Island (research) relations.

Abstract in French

Cette thèse basée sur des articles explore le rôle et l'impact de la technologie relationnelle, de l'éducation linguistique basée sur les forces, et des recherches sur la planification et la politique linguistiques dirigées par la communauté dans un projet pilote visant à soutenir les processus de revitalisation et de récupération des langues autochtones. Suivant un paradigme de recherche autochtone et des méthodologies de décolonisation, cette thèse présente une approche d'acquisition de la langue autochtone immersive et dirigée par la communauté—*TEK-nology* (Traditional Ecological Knowledge (TEK) and technology)—pour soutenir la revitalisation et la récupération de la langue Anishinaabemowin dans le contexte canadien. L'objectif du projet pilote *TEK-nology* est d'explorer l'application pratique d'une approche autodéterminée d'apprentissage du langage et de l'acquisition des connaissances basée sur la technologie et ancrée dans les visions du monde autochtones. Cette thèse propose trois contributions originales principales dans le domaine de l'enseignement des langues et de la planification et des politiques linguistiques à trois niveaux d'analyse et de pratique interconnectés et interdisciplinaires: (1) la *TEK-nologie* en tant qu'approche d'acquisition de la langue et de la transmission des connaissances; (2) Dùthchas, une méthodologie kincentrique de gaélique écossais pour la pratique des recherches relationnelles dirigées par la communauté; et (3) la *TEK-nologie* en tant que planification linguistique communautaire en ligne. La recherche démontre: (1) le potentiel et l'impact de l'ancrage de l'acquisition de la langue et de la transmission des connaissances dans les visions du monde autochtones, l'utilisation de la technologie relationnelle, et les indicateurs d'acquisition de la langue basés sur les forces; (2) les moyens par lesquels les chercheurs qui ne sont pas autochtones sur les terres sur lesquelles ils travaillent peuvent collaborer de manière plus éthique et mutuellement bénéfique avec les peuples et les communautés autochtones; et (3)

des façons d'améliorer la planification et les politiques fédérales et provinciales en matière d'éducation linguistique afin de remédier aux inégalités et à la marginalisation des peuples autochtones dans le système éducatif. Le projet pilote *TEK-nology* a des implications plus équitables et autodéterminés pour l'éducation linguistique, les recherches sur la planification et la politique linguistiques, ainsi que les méthodes et méthodologies dirigées par la communauté. L'approche et le projet pilote *TEK-nology* démontrent que la technologie relationnelle dirigée par la communauté et l'acquisition d'une langue autochtone immersive et basée sur les forces peuvent soutenir la revitalisation et la récupération de la langue Anishinaabemowin et favoriser des pratiques et des politiques d'éducation multiculturelles et multilingues plus équitables dans le contexte canadien. La recherche illustre également comment *TEK-nology*—en tant que site de pratique en ligne autodéterminé et modèle de planification linguistique communautaire—peut façonner les initiatives de revitalisation et de récupération des langues autochtones dirigées par la communauté et basées sur la technologie dans le monde entier et des politiques et législations linguistiques plus équitables aux niveaux territorial, provincial, et fédéral. Enfin, les implications de Dùthchas en tant que méthodologie relationnelle et pratique kincentrique peuvent façonner les moyens par lesquels les chercheurs peuvent favoriser, améliorer, et maintenir des relations éthiques et mutuellement respectueuses entre les Autochtones et les non-Autochtones de Turtle Island.

Dedication

I love and miss you, Mum. Thank you for everything.

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I would like to begin by acknowledging several people who have supported me throughout the doctoral process. I would like to extend my sincere appreciation and gratitude to my co-supervisors, Dr. Blane Harvey and Dr. Mela Sarkar. Thank you for all your guidance, support, and encouragement since that first very first email I sent to you both inquiring about the PhD back in October 2018. You have given such detailed and helpful feedback on an extensive series of drafts, reviews, applications for awards, jobs, and more! I am beyond grateful to you both for everything. Thank you both for being the advisors and supervisors who believed in me from the very beginning. I am also grateful for my committee members, Dr. Deborah McGregor and Dr. Wesley Leonard. Thank you, Dr. McGregor, for being a part of the committee and sharing your knowledge and expertise on Indigenous research and more with me. Thank you, Dr. Leonard, for agreeing to join the committee and for supporting me in the complex process of Indigenous language reclamation and revitalization, both on personal and academic level. Everyone on the committee has shared such depth of expertise and knowledge and encouraged me in so many ways on this doctoral journey. I am profoundly appreciative and thankful. I would like to thank my thesis internal and external examiners, Dr. Caroline Riches and Dr. Belinda kakiyosēw Daniels. I would like to also thank Dr. Jrene Rahm, who served as the external member at the oral defence. I am very grateful to you all for sharing your expertise, feedback, time, and questions during the examination process and beyond.

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List of Abbreviations

ALRR	Anishinaabemowin language revitalization and reclamation
FPIC	Free, prior and informed consent
ILA	Indigenous language acquisition
ILR	Indigenous language revitalization
ILRR	Indigenous language revitalization and reclamation
LHR	Linguistic human right
LPP	Language planning and policy
LRC	Language revitalization committee
OCAP®	Ownership, control, access, and possession
RO	Research objective
TEK	Traditional ecological knowledge
TEK-nology	Traditional ecological knowledge and technology
UN	United Nations
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples

Contribution to Original Knowledge

This manuscript-based thesis explores the role of relational technology, strength-based language education, and community-led language planning and policy research for Indigenous language revitalization and cultural reclamation. In this thesis, I propose and introduce the *TEK-nology* (Traditional Ecological Knowledge and technology) approach to support community-led Indigenous language revitalization and cultural reclamation processes. This thesis offers three primary original contributions to the field of language education and language planning and policy at three interconnected and interdisciplinary levels of analysis.

In Chapter 3, I introduce and operationalize Dùthchas as kincentric methodology for community-led research in-relation praxis. I explore how Dùthchas as kincentric praxis guided my self-decolonization processes and informed a relational methodological approach to the community-led research.

In Chapter 4, I introduce *TEK-nology* as a language acquisition and knowledge transmission approach. I explore the implications of concept-based pedagogies and strength-based language indicators for Indigenous language acquisition and demonstrate how they informed the community-led research co-creation of immersive *TEK-nology* language acquisition videos.

In Chapter 5, I introduce *TEK-nology* as online community-based language planning. I explore the implications of online self-determined sites of praxis and demonstrate how they enable more community-led ideological and implementational spaces and can inform more equitable language education policy, legislation, and research.

As process and praxis, the *TEK-nology* pilot project has introduced and been implemented as (1) a language acquisition *approach*; (2) a research co-creation and in-relation

methodology; and (3) a *method* for an online self-determined ideological and implementational language planning space.

Publication and Presentation of Research

Parts of this thesis published or submitted in peer-reviewed journals and books

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- Belew, A., Ackermann-Böstrom, C., Rangel, J., Meighan, P. J., Belmar Viernes, G. (2022, Mar 15). *Grounded connectivity: Exploring digital capacity building with Indigenous and minoritized communities*. Minority Language Media (MLM) 2022 Conference. Multi-platform and connecting communities: Contemporary challenges for minority language media. Flensburg, Germany.
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Meighan, P. J. (2019, Oct 27). *Addressing colonial threats to linguistic heritage: A framework for Indigenous language revitalization using TEK-nology*. 51st Algonquian Conference. McGill University, Montreal, Canada.

Contribution of Author

This thesis follows a manuscript-based format comprised of four manuscript chapters of which I am the sole and primary author. As the sole author of each manuscript chapter, I have conceptualized and carried out all aspects of the presented research. I have also written the current dissertation in its entirety.

Dr. Blane Harvey and Dr. Mela Sarkar, as my doctoral co-supervisors in the Department of Integrated Studies in Education (DISE) at McGill University, have served in an advisory capacity during the conceptualization of this research and writing of this dissertation. They have reviewed all the dissertation chapters and has provided guidance, feedback, and critique throughout. Additional guidance, feedback, critique, and review of my dissertation chapters was provided by my supervisory committee members, Dr. Deborah McGregor in the Osgoode Hall Law School at York University and Dr. Wesley Y. Leonard in the Department of Ethnic Studies at University of California, Riverside.

Remarks on Style

This doctoral thesis follows a manuscript-based format. Chapter 1 provides a general introduction and conceptual framework to the research topic. Chapter 2 serves as a literature review on the role of technology. Chapters 2, 3, 4, and 5 appear here in the format in which they were published in peer-reviewed journals. More information on the manuscripts is given in Section 1.9. Chapter 6 serves as a comprehensive scholarly discussion of the four manuscript chapters. Bridging chapters introduce and help to link together the four manuscript chapters. A comprehensive reference list is provided following Chapter 6, which includes all the references cited throughout the document.

Chapter 1: General Introduction and Conceptual Framework

1.1 Introduction

Languages do not exist within a vacuum, and languages do not simply disappear. Two-thirds of the world's 7000-7500 languages are Indigenous languages, and “as many as 90% are predicted to fall silent by the end of the century” (McCarty, 2018a, p. 23). The majority of those threatened will be Indigenous languages (McCarty, Skutnabb-Kangas, & Magga, 2008). Studies estimate that one language is “lost” every 1-3 months (Belew & Simpson 2018; Bromham, Dinnage, Skirgård, et al., 2022). These threats to Indigenous languages are a direct consequence of colonialism, imperialism, and colonial practices, such as genocide, linguicide, assimilation policies, land dispossession, and discriminatory laws and actions (Battiste, 2013; Skutnabb-Kangas & Dunbar, 2010; Truth and Reconciliation Commission, 2015; United Nations Permanent Forum on Indigenous Issues, 2018). One shared and common goal for Indigenous language revitalization (ILR) initiatives to address ongoing threats and injustices is to support, strengthen, and reinvigorate intergenerational language transmission processes in the home, the community, and beyond in as many ways possible (Daniels, Sterzuk, Turner, et al., 2021; Hinton, 2013; Leonard, 2017; Littlebear, 2007).

This manuscript-based thesis will explore the role and impact of relational technology, strength-based language education, and community-led language planning and policy research in a pilot project for ILR. Following an Indigenous research paradigm and decolonizing methodologies, this thesis introduces and explores an immersive, community-led Indigenous language acquisition approach—*TEK-nology* (Traditional Ecological Knowledge [TEK] and technology)—to support Anishinaabemowin language revitalization and reclamation processes in

the Canadian context. In this introductory chapter to the manuscript-based thesis, I will position myself and give a rationale for the research that draws on interdisciplinary work and literature relating to colonialism and Indigenous languages to conceptualize culturally, environmentally, and emotionally responsive ILR. I will first discuss the characteristics of the dominant western¹ worldview and its incompatibility with Indigenous worldviews. I will exemplify the detrimental impact of the dominant western worldview on Indigenous Peoples, languages, and knowledges before illustrating the implications of self-determined ILR initiatives. I will then introduce the research context of our community-led pilot project and the research objectives that underpin and tie together the four-manuscript thesis. I will conclude this introductory chapter with an overview of the remaining thesis chapters.

1.2 Researcher positionality and self-location

“They [those who lose their language to an imperial language] will have been colonised completely at the centre of the spirit, they will be dead, exiles, not abroad but in their own land, which will not reflect back the names they have given it...They will be superfluous, talking without alternative in a language that is not their own”

—Scottish Gaelic author, Iain Crichton Smith, *Towards the Human*.

Indigenous scholarship stresses the necessity of researcher positionality, or “self-location” before embarking on collaboration, work, or research with Indigenous Peoples (Absolon, 2011; Kovach, 2021; McGregor, Restoule, & Johnston, 2018). Positionality and self-location make transparent a person’s worldview and enables an “engaged approach” (Phyak, 2021) to research, builds trust

¹ I do not capitalize the terms western, eurocentric, or eurocentrism throughout this thesis. I do not capitalize these terms to challenge colonial reference points and the inequitable dominance of the dominant western, eurocentric worldview (see also Campbell, 2020; Government of British Columbia, 2021).

with those whom you collaborate and work, and fosters relational accountability (Wilson, 2001). Absolon (2011) underscores, “location does matter. People want to know who you are, what you are doing, and why” (p. 73). Self-location identifies power differentials in mainstream (colonial) educational contexts and beyond and “prompts awareness of the extractive tendencies of (western) research” (Kovach, 2021, p. 112). Acknowledging subjectivity through researcher positionality and self-location is fundamental for future critical work in language education, planning, and policy that seeks to be beneficial and transformative, both in Indigenous and non-Indigenous educational contexts (Lin, 2015). The acknowledgment of researcher subjectivity, that no research or education is neutral, is crucial for exploring matters of epistemic (in)justice and colonial imbalances, incompatibilities, and inequities which will be explored in this thesis. A researcher’s awareness of subjectivity—or lack thereof—influences which knowledge system is extended, which stories are told, which pedagogies are employed, which questions are asked, and how the “data” are analyzed and interpreted (Chiblow, 2021; Smith, 2021). I will now position and self-locate myself in relation to my research and work.

Is mise Pòl Miadhachàin-Chiblow. Pòl Mac Angusina Doileig Aonghais ’ill Easbaig. ’S e Gàidheal a th’ annam. Rugadh agus thogadh mi ann an Glaschu, Alba. My name is Paul Meighan-Chiblow. Paul, son of Angusina, daughter of Dolina, daughter of Angus, son of Archiebald. I’m a Scottish Gael. I was born and raised in Glasgow, Scotland.

My research focuses on multilingual and multicultural education, Indigenous language revitalization, culturally responsive pedagogies, and language policy. My experiences as a Gàidheal (Scottish Gael) growing up in Glaschu (Glasgow) inform my work. I was raised by my

mother who is from Dalabrog (Daliburgh), in the north-western island of Uibhist a Deas² (South Uist) in na h-Eileanan Siar (Western Isles). I remember hearing Gàidhlig (Scottish Gaelic) all the time around my fluent speaking grandmother, who was a core of our family. However, Gàidhlig, an endangered Indigenous language in Alba (Scotland) with approximately 57,000 speakers^{3,4}, was not available to me in the educational system. Members of my family and older generations recall being beaten for speaking it in school, and Gàidhlig, spoken for more than 1500 years in Alba, is still not recognized as an official language in the United Kingdom. I do not speak my language fluently yet. I am currently on a language reclamation journey as an adult learner since I refuse to be, as the Scottish Gaelic writer Crichton Smith (1986) writes in the opening quote, “colonised completely at the centre of the spirit” (p. 70). I introduce myself in Gàidhlig with my sloinneadh⁵ and four generations of family in Dalabrog, Uibhist a Deas. I use my matronymic line for two generations to honour my mother, who raised me, and to acknowledge my grandmother. These Uibhistich (Uist women) are and were instrumental figures in my life, and without the strength, trust, and support of my mother I would not be who I am today.

² Uibhist a Deas is one of the strongholds of the endangered Gaelic language and includes some of the strongest Gaelic-speaking communities in the world, ranging from 62% to 79% of the respective community population (Crouse, 2018).

³ According to the latest Scottish Census in 2011, 57,600 people could speak Gàidhlig (National Records of Scotland, 2015).

⁴ Gàidhlig and Gaelic culture were almost eradicated due to many factors, such as the forced eviction of the Gàidheil (Gael) from their traditional homes and lands during the Highland Clearances in the mid-18th to -19th centuries and the destruction of centuries-old Gaelic clan-based society after the Battle of Culloden in 1746 by British government forces (e.g., Hunter, 2014; MacKinnon, 2011, 2017, 2018). In more recent times, older generations remember being beaten for speaking the language in classrooms. An example is the maide crochaidh (the “hanging” or “punishment” stick) that children passed along to those who were caught speaking Gàidhlig (McKinnon, 2019). The multi-generational and psychological impacts of the trauma associated with the repression of Gàidhlig and Gaelic culture linger to this day and have been driving factors for language shift, “loss”, socioeconomic and sociopolitical inequities, and the destruction of family and community intergenerational language transmission in Scotland (e.g., Crichton Smith, 1982; McIntosh, 2020; Ó Broin & Chakour, 2022; Ó Giollagáin, 2020; Whittet, 1963).

⁵ A sloinneadh is a Gaelic way of naming from whom you are descended so people in the local speaker community know who you are and to whom you are related. A sloinneadh can be patronymic or matronymic, depending on the context and circumstances.

My motivation for more equitable multicultural education, policy, and language revitalization has continued to grow since meeting my Anishinaabe Ojibwe husband in Glaschu in late 2015 and after relocating with him to Turtle Island (or what is also known as North and Central America) in late 2016. I have learned more about the devastating impacts of colonialism on the Indigenous Peoples and languages of Turtle Island from him and from extensive discussions with my Anishinaabe family, Elders, and knowledge keepers. We talk frequently about the importance of reclaiming and speaking our languages, languages which have been oppressed and pushed to the verge of extinction by centuries of colonial governments and inequitable educational policy. We want to speak our languages, Anishinaabemowin and Gàidhlig, in our home and beyond and with our future kin.

These experiences have led to this research and thesis where I explored the *TEK-nology* (Traditional Ecological Knowledge [TEK] and technology) Indigenous language acquisition approach in a community-led pilot project with participants from my Anishinaabe family's community in Ketegaunseebee⁶ (Garden River First Nation) in the Great Lakes Region of Turtle Island, also known as North and Central America. I consider my role as a (re)searcher as one where I am an active participant, learner, family member, and responsible and accountable to multiple entities: my ancestors, my past, present, and future relations, my family, the Gàidheil (Scottish Gael) and Anishinaabeg communities, and the lands of Turtle Island where I currently live. As a (re)searcher who is not Indigenous to Turtle Island nor from Ketegaunseebee, I respectfully followed Anishinaabe protocols and an Anishinaabe research paradigm on this research pilot project. Tapadh leibh (thank you in Gàidhlig) and Miigwetch (thank you in

⁶ The spelling Ketegaunseebee reflects that on Garden River First Nation's website and logo (see <https://www.gardenriver.org/site/>).

Anishinaabemowin) to everyone who has supported and will support me on this lifelong learning journey.

I will now continue with the research rationale which draws on interdisciplinary literature and work across the globe in relation to Indigenous language revitalization before elaborating on the research context and objectives.

1.3 Coloniallingualism

Indigenous languages and cultures across the globe have been forcefully stripped away, appropriated, or destroyed by colonialism, imperialism, and colonial practices (Battiste, 2013; Heugh, 2009, 2016; Kalan, 2016; Mohanty, 2019; Olthuis, Kivelä, & Skutnabb-Kangas, 2013; Phyak, 2021; Phillipson, 1992; Skutnabb-Kangas & Dunbar, 2010; Truth & Reconciliation Commission, 2015; United Nations Permanent Forum on Indigenous Issues, 2018). Two-thirds of the world's 7000-7500 languages are Indigenous languages; one-third of those are experiencing language loss (Lewis & Simons, 2016), and “as many as 90% are predicted to fall silent by the end of the century” (McCarty, 2018a, p. 23). Studies estimate one language is “lost” every 1-3 months (Bromham, Dinnage, Skirgård, et al., 2022). These threats are a direct consequence of colonialism and colonial practices (United Nations Permanent Forum on Indigenous Issues, 2018). In the Canadian context, examples include the genocidal impact of Christian church-run residential schools where the “aim of education is to destroy the Indian” (Davin, 1879) and the “sixties scoop”, which refers the mass seizure of Indigenous children from families without consent and their placement into the colonial nation-state welfare system (Reclaiming Power and Place: Executive Summary, 2019; Truth and Reconciliation Commission

Report, 2015). The Truth and Reconciliation Commission (2015) elaborates on the long-standing and unaddressed impacts of colonialism,

For over a century, the central goals of Canada’s Aboriginal policy were to eliminate Aboriginal governments; ignore Aboriginal rights; terminate the Treaties; and, through a process of assimilation, cause Aboriginal peoples to cease to exist as distinct legal, social, cultural, religious, and racial entities in Canada. (pg. 1)

Colonial forces have deprived Indigenous Peoples of fundamental human, linguistic, and educational rights (Skutnabb-Kangas, 2000; Skutnabb-Kangas & Dunbar, 2010). ILR⁷ is, therefore, of vital importance for many Indigenous Peoples across the globe and involves complex mental, emotional, spiritual, and physical intergenerational responses to colonial acts of genocide, historicide, and linguicide. In addition to overt colonial policy and practice, Indigenous communities in Canada and worldwide continue to face threats to their epistemic and linguistic heritage due to the global advance of dominant colonial languages—in particular, English—and ethnocentric, nation-state monocultures (Macedo, 2019; Meighan, 2022b). I have argued that the ongoing privileging of dominant colonial knowledges and colonial languages in mainstream language education and policy is coloniallingualism (Meighan, 2022b). Coloniallingualism, covertly or overtly, upholds colonial legacies, imperial mindsets, and inequitable practices

⁷ According to McIvor (2020), ILR is an emerging, interdisciplinary academic field of study. ILR does not encompass only one single academic discipline. ILR underscores that the “study and recovery of Indigenous languages are necessarily *self-determined* and *self-governing*...[and] the study and recovery of Indigenous languages is necessarily *interdisciplinary*; it borrows from, leans on, and contributes to various fields of study” (emphasis added, p. 78).

(Meighan, 2022b). I posit that the hegemonic use of the English language carries a colonial legacy and a eurocentric, anthropocentric⁸ (human-centred) worldview characterized by:

- (1) linguistic imperialism (Phillipson, 1992) and cognitive imperialism (Battiste, 2013);
- (2) the view that humans are superior to nature (or “hegemonic anthropocentrism”⁹ [Rose, 2005] and “human exceptionalism”¹⁰ [Haraway, 2008]); and
- (3) white (epistemological) supremacy (Gerald, 2020; Minde, 2003).

Coloniallingual English speakers, especially decision-making elites, who enact this worldview of linguistic, cultural, and cognitive superiority have subjugated Indigenous, heritage and nondominant cultures and languages and legitimized the destruction of ecosystems (Meighan, 2022b; Steffensen & Fill, 2014; Tom, Huaman & McCarty, 2019; Van Lier, 2004). The destruction of ecosystems, habitats and our biosphere and the western motif of “liberal economic growth and progress” continues to (1) threaten the ecological heritage, or the harmony of local Indigenous value, belief, and governance systems (Henderson, 2000; Houde, 2007), and (2) jeopardize the generative capacity of appropriate, place-based responses to the human-caused climate and sustainability crises.

Coloniallingualism and the dominant western human-centered worldview is incompatible with Indigenous worldviews and lifeways rooted in the principles of reciprocity and good relationships between communities, humans, more than humans, and the local environment

⁸ According to Padwe (2013), “Anthropocentrism refers to a human-centered, or “anthropocentric,” point of view. In philosophy, anthropocentrism can refer to the point of view that humans are the only, or primary, holders of moral standing. Anthropocentric value systems thus see nature in terms of its value to humans” (para. 1).

⁹ Rose (2005) states that hegemonic anthropocentrism is “a philosophical ecology that separates humans from the natural world in the most extreme ways” (p. 302).

¹⁰ Human exceptionalism “is the idea that humankind is radically different and apart from the rest of nature and from other animals...[which] has allowed us to exploit nature and people more ruthlessly” (Plumwood, 2007, para. 1).

(Blaser, Feit & McRae, 2004; Hermes, Bang & Marin, 2012; Styres, 2019). I will elaborate on the features of this incompatibility in the sections that follow.

1.4 The importance of Indigenous languages

For Indigenous Peoples worldwide, language and culture are viewed as one and the same and as inseparable from the land (Chiblow & Meighan, 2021; Ferguson & Weaselboy, 2020; Hermes, 2005; McGregor, 2004). Although Indigenous Nations and communities across the globe and on Turtle Island have very diverse cultures, languages, and traditions, they share in some common values, such as stewardship of the land and a respect for the Earth and all its inhabitants (Toulouse, 2018). Anishinaabe Ojibwe storyteller, educator, and scholar Basil Johnston (2003) remarks, “Creation was conducted in a certain order: plants, insects, animals, and human beings. In the order of necessity, humans were the last and the least; they would not last long without the other forms of beings” (p. vii).

Indigenous ways of knowing and being stem from a holistic, relational worldview which emphasizes ecocentric and ecological principles¹¹, such as kinship, reciprocity, and relationships with the land, animals, spirits, and fellow humans (Alfred, 2014; Hermes, 2005; Plumwood, 2018; Rose, 2005; Task Force on Aboriginal Languages and Cultures, 2005, Wilson & Restoule, 2010; Wilson, 2001). While Indigenous Peoples are not the only ones who actively care about the environment, Indigenous Peoples are continually reminded of their responsibilities to the land and to their kincentric relationships by remaining intricately linked, both physically and spiritually, to their communities, their way of life, and the way they view the world (Mankiller,

¹¹ Ecocentric and ecological principles are only a part of holistic Indigenous ways of knowing and being. These terms, although not wholly encompassing, have been used to express ideas through the English language and in the context of a western reductionist worldview that has been influenced by an academy of binary disciplines and constructs.

2009). Mankiller (2009) remarks, “protecting the environment is not an intellectual exercise; it is a sacred duty”, and when Indigenous Peoples “speak of preserving the land for future generations, they are not just talking about ... humans. They are talking about future generations of plants, animals, water, and all living things” (para. 4).

Indigenous languages are fundamental to Indigenous Peoples. Indigenous languages transmit a way of life to future Indigenous inheritors and practitioners that enables a relational stewardship of the local environment and an understanding of one’s own heritage, responsibilities, and identity (Johnston, 2011). They transmit Indigenous knowledges, such as Traditional Ecological Knowledge (TEK)¹²¹³ about the local land and ecosystem (Absolon, 2011; Alfred, 2014; Geniusz, 2009; McGregor, 2004) and linguistically unique medicinal knowledge (Cámara-Leret & Bascompte, 2021). Cámara Leret and Bascompte’s (2021) study “indicates that threatened [Indigenous] languages support 86% and 100% of all unique [medicinal] knowledge in North America and northwest Amazonia, respectively” (p. 1). Indigenous languages and knowledges are therefore vital for all humanity, sustainability, and for maintaining ecological balance. Further examples of the Indigenous knowledge embedded in linguistic structure about

¹² Traditional Ecological Knowledge (TEK) is not an Indigenous term and has been used here to denote Indigenous knowledges that transmit ecological insights about the local land. It is important to note that “terms like traditional knowledge don’t encompass the complex and nuanced web of spiritual, cultural, scientific, and abstract understandings found in Indigenous worldviews. There’s no word or phrase in the English language that can give these concepts of relational knowledge the justice they deserve, and each Peoples have their own ways of knowing that would need to be labelled via their respective languages” (Animikii Indigenous Technology, 2020, para. 2).

¹³ There are several definitions for TEK. According to Nakushima et al. (2012), “Indigenous or traditional knowledge refers to the knowledge and know-how accumulated across generations, and renewed by each new generation, which guide human societies in their innumerable interactions with their surrounding environment” (p. 8). McGregor (2008) views TEK as responsibilities and relationships between “knowledge, people, and all Creation (the ‘natural’ world as well as the spiritual) ... TEK is viewed as the process of participating (a verb) fully and responsibly in such relationships, rather than specifically as the knowledge gained from such experiences. For Aboriginal people, TEK is not just about understanding relationships, it is the relationship with Creation. TEK is something one does” (p. 145). Whyte (2013) stresses TEK as a collaborative concept where, “TEK systems, then, are systems of responsibilities that arise from particular cosmological beliefs about the relationships between living beings and non-living things or humans and the natural world” (p. 5). All these definitions centre *long-term relationships and responsibilities to the land* and environment. In other words, *knowledge is not just “data”*.

the ecological landscape include the Comcaac (Seri people) of Sonora, Mexico who use the term Moosni Oofia to describe “what the green sea turtles encircle”, or Tosni Iti Ihiiquet, the place “where the pelicans have their offspring” (Wilder, O’Meara, Monti, et al., 2016, p. 505). Tiohtiá:ke (Montréal) in Kanien’kéha (Mohawk) loosely translates as “where the group divided/parted ways” to describe a natural meeting and parting point for Indigenous Peoples (Concordia University, 2020). Ryan DeCaire, a fluent Kanien’kéha speaker and scholar who learned through immersion school states, “We describe a lot of the world around us in terms of what it does. So, a chair is not just a chair, it is the thing that holds up your bottom” (University of Toronto News, 2017). This action-oriented view of the world “in terms of what it does” emphasizes the *relationship* between the speaker, human, and more than human entities and the knowledge of the land or territory encoded in Indigenous languages. Indigenous knowledges transmitted through language are therefore “not [only] a description of reality but an understanding of the processes of ecological change and ever-changing insights about diverse patterns or styles of flux” (Youngblood Henderson, 2000, p. 265).

As highlighted above, Indigenous languages are important to non-Indigenous peoples and humanity more broadly. The more Indigenous languages and Indigenous Peoples’ rights are threatened, such as self-determined land governance and treaty rights, the more our collective local ecosystems and abilities to respond to the climate crisis are endangered (Fa et al., 2020; Forest Stewardship Council, 2016; Garnett et al., 2018; Grenier, 1998; Harrison, 2007; Tom, Huaman, & McCarthy, 2019; Whyte, 2017, 2018). The highly specialized and place-specific local environmental knowledge with vital phenological and historical “data” embedded in and transmitted through Indigenous languages is jeopardized or “lost” when an Indigenous language

community shifts—by force, coercive policy, or necessity—to using another language, such as English.

Despite the importance of maintaining, revitalizing, and reclaiming Indigenous languages, worldviews, and ways of knowing and being, Indigenous lifeways continue to be viewed, to a lesser or greater degree, through an inequitable colonial western lens of assumed superiority and advanced civilization.

1.5 The foundations and ideology of the western worldview

The foundations of the western or eurocentric worldview date back to the early pre-Socratic and Classical Greek philosophers (6th – 3rd centuries B.C.) who predominantly sought universal principles or rational “truths” to explain nature and the universe. This anthropocentric approach rejected naturalistic ways of knowing and being and elevated human beings above nature—the land, animals, plants, waters, and features of the Earth—and the irrational “Other” on the basis of the “exceptional” human capacity, or Aristotelian potentiality, for reason and perfection.

The distinction, or dichotomy, between human reason and uncontrollable nature, was consolidated during the Middle Ages and legitimized through the Christian faith. With the Black Death in the 14th century, the deadliest pandemic recorded in human history, and the influence of Christianity, nature on Earth—as opposed to Christian ideals of heaven or the Garden of Eden—was viewed as something transitory or hostile that can be “subdued” and brought under “dominion” of mankind (Genesis, 1:28). As Sardar, Nandy & Davies (1993) remark, “nature was not a power with which one could establish a celebratory, reverential relationship” (p. 25). These assumptions or “regimes of truth” were seen as natural or “God-given” (Semali & Kincheloe, 2002, p. 31), and it was through this lens that Christopher Columbus viewed the “New World”: a

terra nullius (nobody's land) with "demonic, Earth-worshipping inhabitants" (Sardar, Nandy, & Davies, 1993, pp. 40-51).

During the Scientific Revolution, or the Age of Reason (Enlightenment), in the 16th and 17th centuries, nature was further controlled, or "bound into service and made a slave" (Capra, 1982, p. 56). Rene Descartes cemented the dualistic and binary separation of the human mind and reason from a mechanistic body, from animals with no "reason" or "language", and from a material, "soulless" environment. Sir Francis Bacon, credited as being the "father of empiricism" and the scientific method, was driven by the idea that *scientia potestas est* (knowledge is power) and was determined to understand the laws of nature to tame it and render it useful to Europeans (Merchant, 2008). Sir Isaac Newton, after discovering the laws that govern planetary motions with mathematical equations, underscored the western anthropocentric belief that, with reason and reduction, humans can gain absolute knowledge from nature and the universe to improve their own condition (Semali & Kincheloe, 2009).

Influential, powerful white men have contributed to a modern-day western anthropocentric worldview which pursues knowledge to the detriment of nature and the non-western "Other". That is not to say that worldviews are monolithic, or that all "westerners" have thought the same since antiquity. Western ecofeminist writers, such as Carolyn Merchant, Val Plumwood, or Deborah Rose have critiqued the west for its "hegemonic anthropocentrism" (Rose, 2005), "human exceptionalism" (Plumwood, 2007), and highlighted the need for a "re-situating of the human" on more ethical and ecological terms (Plumwood, 2002). However, the current hegemonic western worldview, here synthesized in short due to the scope of this chapter, emphasizes the motif of "growth" and "scientific progress" at all costs, perpetuates a dichotomy

between the “civilized westerner” and the “uncivilized Other”, and prevents nature from being perceived as a living entity.

1.5.1 Colonial policies and practices

Indigenous worldviews—rooted in relationships, obligations and responsibilities to nature and all entities, such as the human, non-human, more than human, spirit, and land at all times—are in stark contrast to the dominant mainstream, anthropocentric western worldview¹⁴ which has spearheaded colonial governmental and educational policy so far (Battiste, 2002; Battiste & Henderson, 2000; Borrows, 2010; Cajete, 2018; Craft, 2013; Macedo, 2019; Toulouse, 2018).

Eurocentric, binary beliefs, such as human vs. nature, mind vs. body, expert vs. non-expert, civilized vs. uncivilized, have been a contributing factor to the polarization which currently exists between Indigenous and non-Indigenous knowledge systems (Deloria, 2003; Toulouse, 2018). These dichotomizing, “divide-and-conquer” beliefs have enabled colonial settlers who enact a western worldview—for example, everyday citizens, politicians, educators, policymakers—to categorize Indigenous knowledge systems, languages, and, by extension, Indigenous Peoples as “uncivilized” or even “nonhuman” (Deloria, 2003; Sardar, Nandy & Davies, 1993) and on the deficit side of a polarized epistemic culture spectrum (Knorr Cetina, 2009) constructed on false “assumptions of superiority” (Battiste, 2013, p. 186). In Canada, eurocentric beliefs and superiority complexes have influenced the actions of colonizers and future iterations of colonialism, as exemplified in Ryerson’s (1847) statement in the Report for Indian Affairs, “their education must consist of not merely training of the mind, but of a weaning from the habits and feelings of their ancestors, and the acquirements of the language, art and

¹⁴ Worldview has been mentioned in the singular form to highlight the pervasive dominance of eurocentrism and its emphasis on the search for categorical universals and homogenizing generalizations.

customs of civilized life” and in the Nicholas Flood David Report (1879), “Indian culture is a contradiction in terms ... they are uncivilized ... the aim of education is to destroy the Indian” (CBC News, 2015).

In this Canadian context, the “loss” of so-called “inferior” or “uncivilized” Indigenous languages and cultural practices and the promotion of “superior” colonial, “official” languages in education—English and French—has perpetuated racist practices and negatively impacted Indigenous Peoples’ socioeconomic status, health, and overall wellbeing, such as mental health, suicide rates, and school drop-out rates (First Nations Education Steering Committee & First Nations Schools Association, 2015; Kirmayer, Sheiner & Geoffroy, 2016; Statistics Canada, 2019). Eurocentric beliefs legitimized the above-mentioned reports and yielded a series of genocidal actions and colonial policies that have shaped Indigenous relations with Canada’s colonial government for well over a century. The Indian Act of 1876 led to the outlawing of traditions; ceremonies and languages; creation of reserve lands; enforced enfranchisement (giving up status or rights); and provided the basis for the founding of Christian church-run residential schools. These same beliefs are reflected in the formulation of the White Paper of 1969 nearly one hundred years later and continue to have a traumatizing legacy on entire generations of Indigenous Peoples in colonial Canadian society (Toulouse, 2018; Truth and Reconciliation Commission, 2015).

With the advance of eurocentric notions of “progress” and “civilization”, Indigenous Peoples have been forcefully relegated to the category of the “uncivilized Other”. Consequently, Indigenous languages and holistic ways of knowing and being, despite critical “post-colonial” or “post-modern” epistemological movements, continue to be viewed as “inferior” within a dominant western knowledge paradigm that does not value the concept of *relationality*, or the

interrelatedness of all things (Crazy Bull & White Hat, 2019). The literature and examples demonstrate that Indigenous languages must be maintained and revitalized to address destructive western assumptions and colonial imbalances; maintain ecological balance; reclaim positive cultural and identity association; confront marginalization, systemic barriers and educational disparities; and uphold basic human and environmental rights. As Hallett, Chandler and Lalonde (2007) find in their case study in British Columbia on high youth suicide rates in Indigenous communities:

Bands in which a majority of members reported a *conversational knowledge* of an Aboriginal language ... *experienced low to absent youth suicide rates*. By contrast, those bands in which less than half of the members reported conversational knowledge suicide rates were six times greater. (emphasis added, p. 398)

Ball, Moselle and Moselle (2013) also summarize empirical evidence linking language, culture, and health. Their syntheses of data between 2002–2010 in Regional Health Surveys of First Nations Communities report the impact of Indigenous language acquisition on suicidality: “First Nations adults who claimed to have intermediate or fluent knowledge of an Indigenous language had a lower rate of suicidal ideation and/or attempts compared to First Nations adults who possessed little to no knowledge of an Indigenous language” (Ball, Moselle, & Moselle, 2013, p. 3).

These studies harrowingly illustrate that Indigenous language revitalization can be understood as an issue of life or death.

1.6 Self-determined Indigenous language revitalization

Beginning in the 1960s, the social and political struggles of Indigenous and minoritized communities in colonial contexts across the globe have become increasingly recognized. Language and cultural activism have intensified in response to racisms, language discrimination, inequitable educational policy, and systemic barriers to public services (Leeman & King, 2015). On Turtle Island, Indigenous-focused initiatives began to take shape with Native Education programs in universities (Battiste & Barman, 1995; Brant Castellano, Davis, & Lahache, 2000; Stonechild, 2006) and the creation of Aboriginal student support services (Pidgeon & Hardy Cox, 2005). A fundamental and pivotal moment for Indigenous visions for education came from the 1972 policy paper Indian Control over Indian Education written by the National Indian Brotherhood (now known as the Assembly of First Nations) in response to the White Paper of 1969 which sought to abolish the Indian Act, eliminate Indian status, and gradually terminate existing treaties and Aboriginal rights (National Indian Brotherhood [now Assembly of First Nations] 1972; Pigeon, 2015). The Indian Control over Indian Education (1972) policy paper remarks:

Unless a child learns about the forces which shape him [sic]: the history of his people, their values and customs, their language, he will never really know himself or his potential as a human being. Indian culture and values have a unique place in the history of mankind. The Indian child who learns about his heritage will be proud of it. (p. 9)

1.6.1 Key developments and insights from initiatives

The activism of the 1960s and 1970s inspired various examples of self-determined education and ILR initiatives on Turtle Island and across the globe aimed at revitalizing, reclaiming, or maintaining Indigenous languages and cultures (e.g., little doe baird 2013; May 2005; McCarty 2011, 2014, 2018a; Olthuis, Kivelä & Skutnabb-Kangas, 2013; Wilson, 2014; Yaunches, 2004). These revitalization initiatives have undergone changes and significant improvements over time from more traditional behavioral (western-conceptualized), decontextualized approaches to learning languages—such as ahistorical or acultural translations and audiolingual methods (e.g., rote drills)—to *immersive* teaching of language, content, and culture in combination without the use of the learner’s first language (Reyhner, 2006). McCarty (2021) remarks, “it is generally agreed that ILI [Indigenous-language immersion] provides *50–100% of instruction* in the *Indigenous language* (typically learners’ second language) and a *strong culture-based curriculum*” (emphasis added, p. 929). Some illustrative examples of ILR immersion initiatives¹⁵ from the literature can be found in Table 1.1 below.

¹⁵ Indigenous-language immersion (ILI; McCarty, 2018b; McCarty et al., 2021) is different from second language/L2 acquisition principles used, for example, in French Canadian immersion. ILI is not elite “one-way” immersion for learners from a dominant and linguistically homogenous background (e.g., English-speaking students immersed “one-way” in French), or “two-way” immersion that brings together non-dominant and dominant-language learners (e.g., Spanish-speaking and English-speaking students learning English and Spanish together) (Fortune & Tedick, 2008). McCarty (2018b) explains, “Indigenous-language immersion originates from a grassroots movement begun in the 1970s to reclaim and revitalize oppressed languages undergoing extreme language shift. These are contexts characterized by relatively small Indigenous populations in which learners represent nondominant, economically and socially marginalized communities for whom there is little out-of-school HMT [heritage mother tongue] support. They are also contexts characterized by profound and enduring education disparities” (p. 46).

Immersion type	Age range	Examples	Classroom or land-based
Pre-school language nests	~0-5 years	Māori Te Kohanga Reo (King, 2001; Kirkness, 1998; McClutchie Mita, 2007) Hawaiian Aha Pūnana Leo (Wilson, 1998; Wilson & Kamana, 2001)	Mainly classroom
Pre-school and K-8 schools	~0-14 years	Mohawk Kahnawà:ke Survival School (Chambers, 2015) Ojibwe Waadookodading immersion school (Hermes et al., 2012)	Mainly classroom
Adult immersion	~14+ years	Mohawk Ratiwennahni:rats immersion school (DeCaire, 2019) Mohawk Onkwawen:na Kentyohkwa immersion school (DeCaire, 2019)	Mainly classroom
Summer camps	All ages	Ojibwe Midewewin Lodge summer camp (Pitawanakat, 2018) Cree nêhiyawak Summer Language Program (Daniels, 2018)	Mainly land-based
Year-round camps	All ages	Ojibwe Nimkii Aazhibikong camp (Onaman Collective, 2020) Cree Kâniyâsihk Culture camp (Kâniyâsihk Culture Camps, 2017)	Mainly land-based
“Tribal” colleges and universities	~16+ years	Diné College , Arizona (Crazy Bull & White Hat, 2019) Sinte Gleska University , South Dakota (Crazy Bull & White Hat, 2019)	Mainly classroom

Table 1.1: Examples of ILR initiatives

These ILR immersion initiative examples have implications for future Indigenous language acquisition¹⁶ approaches, cultural reclamation, and the revitalization of intergenerational language transmission processes. I will elaborate on these implications below.

The inadequacy of a “one-size-fits-all” approach. The Hawaiian and Māori initiatives, established more than two decades ago, are examples of very successful and long-lasting revitalization initiatives where only one Indigenous language is spoken in the country and where it is easier to institute nation-wide policy reform (see Table 1.1). In addition, Hawaiian and Māori have official language status alongside English in their respective countries which gives their languages more prestige and “value” at a sociopolitical level. However, in the case of North America and, more specifically, within Canada, there are more than 70 Indigenous languages and even more “dialects” of the same (Statistics Canada, 2019). This means that a “one-size-fits-all” or a “copy-and-paste” initiative based on the successful initiatives of Hawaii and New Zealand, for example, cannot be rolled out across very diverse and distinct Indigenous communities. Moreover, the vast majority of Indigenous languages in Canada or the U. S. have no nationwide official language status¹⁷ and therefore lack in (inter)national protection or institutional prestige, despite recent legislation and calls to action to legitimize their use (Bill C-91 Indigenous Languages Act; Truth and Reconciliation Act, 2015).

The constraints of funding, time, and numbers of teacher-speakers. One shared and common goal for ILR initiatives is to reinvigorate intergenerational language transmission in the home, the community, and beyond in as many ways possible (Daniels, Sterzuk, Turner, et al.,

¹⁶ Indigenous language acquisition (ILA) is not the same as second language acquisition (SLA). Hammine (2020) elaborates, “the teaching and learning of endangered [Indigenous] languages comprise features and needs that are different from the teaching and learning of majority or foreign languages” (p. 304).

¹⁷ There is Canadian official provincial protection in Nunavut for the Inuit language and in the Northwest Territories for Chipewyan, Cree, English, French, Gwich'in, Inuinnaqtun, Inuktitut, Inuvialuktun, North Slavey, South Slavey and Tłı̄chǫ (FPCC, n. d.)

2021; Hinton, 2013; Leonard, 2017; Littlebear, 2007; Olthuis et al., 2021; Olthuis & Gerstenberger, 2019). Home-school initiatives, such as the Kahnawà:ke Survival School and summer camps, can vary dependent on family, community, and other governmental and nongovernmental supports which may or may not be available (McCarty & Nicholas, 2014). Many Indigenous language speakers, teachers, and organizations state that ILR programs are vastly under-funded (Corbiere, as cited in Pitawanakat, 2018; McCarty & Nicholas, 2014). We must also take into consideration that most speakers of Indigenous languages are over sixty years old (Littlebear, 2007).

There is therefore a need for a different approach which can (1) encourage more accessible interaction in the Indigenous language between fluent speakers over sixty years old and younger learners who cannot find or commit to full-time immersion, and (2) foster more new, proficient speakers who can teach and transmit Indigenous languages to future generations (Hermes, Bang & Marin, 2012). These are beginning to emerge through “master-apprentice” (Elder and learner) programs (Alfred, 2014; DeCaire, 2019; First Peoples’ Cultural Council, 2016; Hermes, 2012; Hinton & Ahlers, 1999). However, as mentioned above, becoming qualified and/or fluent or advanced speakers with the ability to teach an additional language takes considerable time (Hermes, Bang & Marin, 2012), as much as four years full-time in terms of acquiring the language (DeCaire, 2019) and, in the case of federal or state-mandated schools, successful navigation through colonial accreditation standards and bureaucracy to become qualified schoolteachers. With Indigenous languages threatened with further loss at an unprecedented rate due to colonialism and imperialism (Jany, 2018; Harrison, 2007; Lomawaima & McCarty, 2006; McCarty, 2018b), time is not something we can afford (Littlebear, 2007).

Trauma-based barriers to language learning. Reclaiming and revitalizing an Indigenous language which has been forcefully taken is a traumatic process for many (Barker, Goodman, & DeBeck, 2016; Cote-Meek, 2014; Kemper, 2015; Macedo, 2019; Pitawanakat, 2018). Support from Indigenous families and parents may not always be present due to many factors. Many Indigenous Peoples continue to go missing or have been murdered (Reclaiming Power and Place: Executive Summary, 2019), and many families continue to vividly live the legacy of the residential schools and the sixties scoop (Truth and Reconciliation Commission, 2015). For many families, there is a deep and complex trauma associated with speaking the ancestral language which can be highly triggering (Johnston, 2011; Lucchesi, 2019). Making learning the language a safe place in every sense of the word cannot be done without great sensitivity. This sensitivity includes understanding the complexities of trauma-based barriers to learning, or “Historic Trauma Transmission” (Wesley-Esquimaux & Smolewski, 2004), which can form part of reclaiming and restoring stolen pride in one’s own identity. In essence, an approach which incorporates emotionally responsive learning in ILR initiatives—in addition to culturally and environmentally responsive learning—could be pivotal for parents and families. This emotionally responsive approach could include teacher, learner, and community preparation courses and training on psychological trauma. This approach to ILR could help support the learners while they acquire the language and also support the capacity building and healing of the community as a whole (Assembly of First Nations, 2019; Battiste, 2002; Leonard, 2017; Wesley-Esquimaux & Smolewski, 2004).

Disconnect between western and Indigenous education. Many Indigenous Peoples view the western ideal of academic success based on universal, absolutist “truths” as synonymous with assimilation (Hermes, 2005). As highlighted throughout this chapter,

“traditional” as well as “modern” Indigenous education is holistic, focuses on education in many forms, such as relational and land-based learning from humans, spirits, the land, and animals. Indigenous education is not based on eurocentric, binary right vs. wrong answers and instead continually grows and changes. As Toulouse (2018) highlights, “it was okay not to have answers for everything” (p. 21). Indigenous learning is lifelong, and education is regarded as a communal responsibility which helps build the capacity of the community (Toulouse, 2018). For these reasons, colonial teaching practices, such as teacher-led decontextualized, disembodied grammar or vocabulary lessons and comprehension tests and exams solely aimed at developing written literacy that upholds the western print canon, could further disprivilege Indigenous languages and knowledge systems which are *also* experiential, embodied, and include oral tradition (Alfred, 2014; Battiste, 2002; Hermes, 2005).

Mainstream schools in Canada and the United States lack in giving “our [Indigenous] children the knowledge to understand and be proud of themselves and the knowledge to understand the world around them” (Indian Control of Indian Education, 1972). The epistemic culture (Knorr Cestina, 1999) embraced and validated in the everyday classroom is still very much based on non-Indigenous, eurocentric values, beliefs, and pedagogies (Meighan, 2022b). These pedagogies include standardized, high-stakes testing which can encourage cramming or regurgitation of information as opposed to lifelong learning; the binary idea of academic, non-holistic distinct “disciplines” or “subjects”; the stark dichotomy between “right” and “wrong” ways of being and knowing; and a disregard for the “Other” and the environment. This imbalance needs to be addressed to fully validate alternative ways of knowing and being—such as ecocentric and kincentric Indigenous worldviews—and foster more equitable multilingual and

multicultural education, which includes Indigenous and “non-official”, “non-colonial” languages.

Ongoing influence of the western worldview on classroom curricula and materials.

The worldview and educational philosophy which predominately characterizes and permeates classroom-based and externally-influenced community Indigenous revitalization efforts (immersion or non-) continues to privilege a colonial, anthropocentric perspective. For example, curricula and materials developed by educators with a western worldview, such as history books without mention of residential schools, or non-literal translations which lack in cultural or environmental significance. This eurocentric perspective retains aspects such as a disembodiment of language from the land and lived experiences of the community, literary “standards” and orthographic/lexicogrammatical conventions, and the primacy of the western, white “educated” human over all “others” (Absolon, 2011; Johnston, 2011; Leonard, 2017; Meissner, 2019; Pitawanakat, 2018). Of course, not all classroom-based or externally-influenced ILR initiatives are always delivered or developed with intentionally detrimental or colonial outcomes in mind (e.g., Hermes, 2005, and the case of the culture-based, “tribal” Ishpaming Ojibwe school in Minnesota). That said, there is the risk of Indigenous culture or the Indigenous language being essentialized and frozen as part of a “cultural tourism” or “cultural romance” (Erickson, 2000, p. 44). Hermes (2005) remarks,

The [addition] of Ojibwe language and culture to the curriculum ... did not necessarily produce any greater academic success than the counterpart public school, which did very little Ojibwe language and culture teaching ... No student gained Ojibwe language fluency. However, self-esteem, self-confidence, community empowerment, and dropout

prevention are all rightful successes the culture-based school does claim, and they were observed, although not quantified. (p. 46)

As we can glean from this quote, there are some very commendable merits to ILR classroom-based efforts. Nevertheless, the recurring issue with classroom-based and externally-influenced community ILR initiatives, whether led by Indigenous or non-Indigenous educators, is that there is still a disconnect between Indigenous and non-Indigenous ways of knowing and being. To return to the point highlighted in the previous sections, for Indigenous Peoples and communities, language and culture are inseparable from the land (Chiblow & Meighan, 2021; Ferguson & Weaselboy, 2020). In western contexts, language teaching is more likely to be decontextualized, built around the ideas and lexicogrammatical conventions of “superior” nation-state building languages (e.g., English and French), constructed around nation-state ideals of culture (e.g., “Canadian” or “white” culture), and taught separately as a subject or academic discipline without crucial cultural elements, such as the land and the local community (Engman & Hermes, 2021; Meighan, 2022b). The relational connection of language and place “is *not* a primary language objective in many English and world language classrooms” (emphasis added, Engman & Hermes, 2021, p. 104). Dominant, non-endangered colonial languages, such as English, can be decontextualized, disembodied from the wider environment, and commodified in the classroom to meet the needs of capitalism, transactional exchanges, and neoliberal “economic growth” (Heller, 2010; Kubota, 2020; Meighan, 2022b; Phillipson & Skutnabb-Kangas, 2018; Shin & Park, 2015). Hermes (2005) explains:

We are currently teaching Ojibwe language through English thought. We say ma'iingan is equal to wolf [in the zoo], but it is not. They [the students] think ma'iingan is just a misspelling of the word wolf ... I asked them [the Elders], "Is a ma'iingan in a zoo a ma'iingan?" They said, "No, it is a wolf." Because ma'iingan requires a context [culture]. I can't take it out of its context without changing the meaning. Everything in English is taken out of context. Everything taught about Indians taken out of context is really in English—or in that way of thought. (p. 50)

Hinton (1999) summarizes:

Despite the wonderful successes in such places, the classroom alone is insufficient for the goals of language revitalization and can in fact be detrimental in certain ways ... there is a culture of the classroom itself that differs fundamentally from any Indigenous community's traditional culture of learning. (p. 57)

1.7 Conceptualizing culturally, emotionally, and environmentally responsive Indigenous language revitalization

Immersion through mainstream western schools or external partnerships, which have also influenced grassroots operations, in North America has not stopped the overall decline in the number of Indigenous language speakers (Hermes, Bang & Marin, 2012; Hermes, 2005; Littlebear, 2007; Meissner, 2019; Pitawanakat, 2018). As cited in the Assembly of First Nation's (2019) Guide to An Act Respecting Indigenous Languages, "in Canada's 2016 Census of Population, only 20% of First Nations people could converse in an Indigenous language, down

almost 6 percentage points from 2006.” While the classroom can be a helpful place for ILR, there needs to be a shift from Indigenous languages being “taught” under a romanticized or touristic lens to being learned as part of a culturally, emotionally, and environmentally responsive action-based, relationship-building context where one learns by doing, being, and *thinking* Indigenous. This *epistemic* foundation and focus stresses the importance of full *immersion* in the Indigenous language and worldview, where culture, language, and teachings can be learned on the land and holistically to address colonialism and incompatibilities, imbalances, and injustices perpetuated by the hegemonic western, human-centred worldview (Chiblow & Meighan, 2021; Meissner, 2019; Pitawanakat, 2018; Stacey, 2016).

In recent years, proficient and fluent speakers are emerging from Indigenous *community-led* and *self-determined* immersion school initiatives. Many of these tend to be predominantly or completely immersive and have a strong culture- and land-based component to support intergenerational language transmission and address the dominant western worldview, its deficit colonial mentality¹⁸, and extreme language shift (McCarty, 2021; Phyak, 2021). For example, Ryan DeCaire attended the Onkwawen:na Kentyohkwa adult immersion school and became fluent, see www.youtube.com/watch?v=xMRCPeOWA9k. In the last five years, more new types of ILR initiatives have begun to take shape through land-based camp immersion programs (see Table 1.1) and, more recently, immersion classes or programs that have gone online due to COVID-19. Examples include the nêhiyawak Language Experience for Cree learners (Daniels, Morin, Cook, & Thunder, 2022), or Eshki-Nishnaabemjig for Anishinaabemowin learners (Anishinabek News, 2020). The long-term effects and impacts of these ILR initiatives, both land-

¹⁸ Phyak (2021) explains, “Colonial mentality refers to the psychology of inferiority constructed by oppressive language policies and unequal sociopolitical structures (David and Okazaki 2006). This mentality upholds a deficit ideology that justifies inequalities as the outcome of deficiencies (intellectual, economic, and political) of the marginalized groups” (p. 228).

based and online, have still to be fully felt or “researched”. Effects, impacts, and “success” marked by fluency or raw speaker numbers is not the *only* priority for many ILR initiatives. There is a need to move beyond the neoliberal, western worldview, which prioritizes and values products, numbers, and short-term “results”, to a process-based, relational approach which also places an importance on: (1) community language definitions and practices (Leonard, 2011, 2019); (2) elevating the prestige of Indigenous languages in the eyes of the communities and speakers themselves (Kroskrity & Field, 2009, May, 2014; Phyak, 2021); and (3) reclaiming cultural and linguistic pride (Meissner, 2019; Pitawanakat, 2018). This process-based, relational approach stresses the importance of Indigenous *cultural* reclamation in addition to Indigenous *language* revitalization, that is, Indigenous language reclamation *and* revitalization¹⁹.

The literature in this chapter demonstrates that Indigenous philosophies of education and knowledge systems must also be privileged to fully address the perpetration of inequitable colonial imbalances for Indigenous Peoples, cultures, languages, and knowledges. There is a need for a widespread paradigm shift and reframing of educational design to one equitably respects *and* implements Indigenous and ecocentric worldviews alongside western, colonial, and anthropocentric worldviews. Conceptual and theoretical frameworks currently and mainly used in mainstream western education continue to privilege eurocentric ways of knowing and being which are in stark contrast to Indigenous lifeways (Buendia, 2003). A holistic, ecological, and

¹⁹ I introduce the term *Indigenous language revitalization and reclamation* to emphasize the importance of two distinct, yet important processes. Language reclamation emphasizes the reclaiming of *cultures* and *knowledge systems* decimated or still threatened by colonization or colonialism (Meighan, 2022) while centering community definitions of language, histories, and needs (Leonard, 2011). Leonard (2019) further explains, “As a decolonial intervention, language reclamation goes beyond “language revitalization,” which tends to place focus on language itself, to instead identify and intervene in the social factors and power structures that instigate language shift. Rather than assuming or pre-assigning goals such as linguistic fluency, language reclamation begins with specific community histories and needs, as determined by community agents, and situates responses accordingly” (para. 6). ILR, which is also becoming an academic discipline in its own right (McIvor, 2020), stresses the revitalization of intergenerational *language* transmission processes in the family, home, community, school, and beyond (see Leonard [2011] for further discussion on language reclamation and revitalization).

ecocentric view of language as an embodied real-life experience inseparable from place, the local land, the community, and the greater ecosystem must be the basis of rethinking and decolonizing educational practices (Alfred, 2014, and his Mohawk land-based language revitalization initiative; Battiste & Henderson, 2000; Daniels, 2018, and sense of belonging to place; Daniels, Sterzuk, Turner, et al, 2021; Engman & Hermes, 2021; Hermes, 2005; Leonard, 2017; Martell, 2017, and Cree immersion summer camps as “medicine”; Meighan, 2022; Meissner, 2019; Neeganagwedgin, 2018; Pitawanakat, 2018, and Ojibwe summer immersion camps; Semali & Kincheloe, 1999; Smith, 2003, Steffensen & Fill, 2014). An easily accessible, Indigenous community-led and community-defined approach to Indigenous language revitalization and reclamation that places an emphasis on pride, wellness, healing, the land, natural daily conversational usage in the home, on Indigenous knowledge systems (such as TEK), and on Indigenous worldviews should be a primary focus and a means to supplement and bolster existing ILR initiatives (Fishman, 2001; Hinton, 2003, 2013; Langdon, 2009; Leonard, 2017; Littlebear, 2007). As Wesley-Esquimaux and Smolewski (2004) remark, healing “focuses on inter-connectedness between family, community, culture and nature” (p. 8).

1.8 Research context

The literature illustrates that a self-determined approach centring the local Indigenous community, land, and worldview is crucial to address colonial incompatibilities, inequities, imbalances, and injustices. A shared and common goal for ILR initiatives is to revitalize intergenerational language transmission processes in the home, the community, and beyond in as many ways possible. How could technology support this nuanced process and existing initiatives? To further explore this question and for this research, I introduce and propose an

immersive, community-led Indigenous language acquisition approach—*TEK-nology* (Traditional Ecological Knowledge [TEK] and technology)—to support Anishinaabemowin language revitalization and reclamation in the Canadian context. A detailed literature review of the role of digital and online technologies for Indigenous language revitalization will follow in Chapter 2.

I explored the *TEK-nology* approach in a pilot research co-creation project with participants from my Anishinaabe family’s community in Ketegaunseebee (Garden River First Nation) in the Great Lakes Region of Turtle Island (see Figure 1.1 below). Participants were family members or friends of my family, and we created a language revitalization committee²⁰ (see Table 1.2 below).

All participants, excluding myself, are from or resident in Ketegaunseebee. Ketegaunseebee has a population of 3,264 members registered under the Indian Act, according to latest statistics. 1,350 members are resident on the band’s reserve, while 1,914 members live off reserve (Crown-Indigenous Relations and Northern Affairs Canada, 2022). According to the latest Census data, 115 members—10.2%—of the on-reserve population report knowledge of an Indigenous language, which refers to “whether the person can conduct a conversation in the language” (Statistics Canada, 2016). In the latest Census, 97.3% of the on-reserve population report speaking English most often at home (Statistics Canada, 2016). More details on the *TEK-nology* approach, the participants, research context, and methodology will follow in Chapters 3, 4, and 5.

²⁰ Participant names are used with permission. All participants signed consent forms.

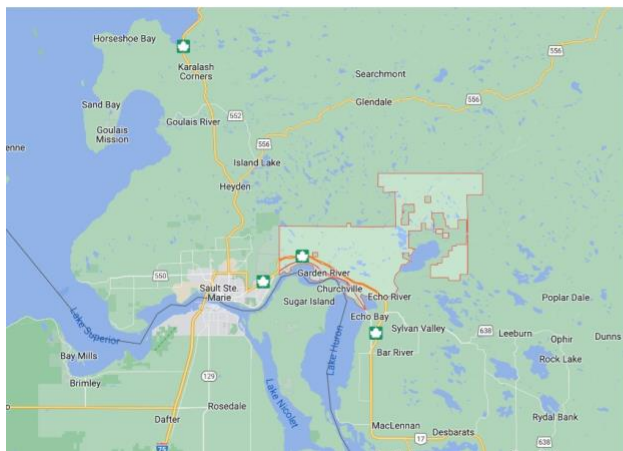


Figure 1.1: Map of Nayaano-nibiimaang Gichigamiin (Great Lakes Region) (Engel & Lippert, 2014; U.S. Army Corps of Engineers, Detroit District, n.d.) and Ketegaunseebee (Garden River First Nation) (Google, n. d).

Participant Name	Relationship to Researcher and Fellow Participants	Project Role
Karen Bell	Aunt-in-law; sister of Dr. Bell-Chiblow	Language Revitalization Committee
Phoenix Bell	Nephew; grandson of Dr. Bell-Chiblow	<i>TEK-nology</i> Video
Dr. Susan Bell-Chiblow	Mother-in-law; sister of Karen Bell, grandmother of Phoenix Bell, mother of Jayce Chiblow	Language Revitalization Committee; <i>TEK-nology</i> Video
Joseph Belleau	Family friend; recommended by researcher's husband	Language Revitalization Committee
Jayce Chiblow	Sister-in-law; daughter of Dr. Bell-Chiblow	Language Revitalization Committee
Paul Meighan-Chiblow	Researcher and family member	Language Revitalization Committee; <i>TEK-nology</i> Video editing
Elder Barbara Nolan	Taught researcher on Anishinaabemowin course; aunt of Debra Nolan, great-aunt of Sydney Nolan	Language Revitalization Committee; <i>TEK-nology</i> Video
Debra Nolan	Family friend; niece of Barbara Nolan	Language Revitalization Committee
Sydney Nolan	Family friend; daughter of Debra Nolan and great-niece of Barbara Nolan	Language Revitalization Committee

Table 1.2: *TEK-nology* project participants' names, relationships, and roles

1.8.1 Research objectives

This research investigates the following research objectives (ROs):

(RO1) the potential and impact of grounding language acquisition and knowledge transmission in:

- a. Indigenous (non-western nor colonial) and ecocentric worldviews;
- b. decolonial, culturally and environmentally responsive technology use; and
- c. strength-based language acquisition indicators²¹.

²¹ I introduce *strength-based language indicators*. A *strength-based language indicator* is a way to counteract reductive, modernist fluency scales or markers based on western, non-endangered language acquisition models. Measuring fluency in an Indigenous, endangered language based on western lexicogrammatical teaching methods and comprehension tests/assessments/exams does not account for the complexities of reclaiming and revitalizing a language which has been disprivileged or been subjected to linguistic (Skutnabb-Kangas & Phillipson, 1996) through western, eurocentric schools. *Strength-based language indicators* encompass the emotional (i.e., trauma-based barriers to Indigenous language acquisition), the environmental, the physical, and the cultural elements of

(RO2) ways in which researchers who are not Indigenous to the lands on which they work can collaborate in a more ethical and mutually beneficial manner with Indigenous Peoples and communities.

(RO3) ways in which federal and provincial language education planning and policy could be improved to address inequities and marginalization of Indigenous Peoples in the educational system.

This research addresses these three ROs through a four-manuscript thesis. The thesis is not viewed as an “end point” to the research, but rather the start of an ongoing conversation and a lifelong learning journey and relationship. For this research, intergenerational transmission is not only measured through raw speaker numbers nor neoliberal, essentialist understandings of language fluency that perpetuate “white hegemonic knowledge” (Kubota, 2020), but rather through a decolonizing approach to language (e.g., Leonard, 2017). In other words, this research explores the impact and implications of self-determined, community-led, and community-defined language *processes* and the role of technology in those contexts. The *TEK-nology* pilot project is collectively led by community participants and the researcher. The overarching goal is to support community-led language revitalization and cultural reclamation processes.

1.9 Overview of thesis chapters

In Chapter 2 of this thesis, I present a literature review of the role of digital and online technologies for Indigenous language revitalization over the past three decades since the creation

language reclamation and revitalization. Language proficiency is therefore viewed more holistically and emphasizes strength, pride, wellbeing, healing, community capacity, and the benefits of minimal (or conversational) language knowledge as opposed to raw fluent speaker numbers only.

of the World Wide Web by Tim Berners-Lee in 1989. In this chapter, I synthesize key insights and takeaways from the Web 1.0, Web 2.0, and Web 3.0 eras. The analysis highlights how Indigenous communities, content creators, scholars, and visionaries have contributed to an ongoing decolonization of the digital landscape and offers implications for the future role of technology-enabled ILR. This chapter addresses in part RO1.

In Chapter 3 of this thesis, I discuss the methodological approach undertaken for the *TEK-nology* pilot project as a researcher who is not Indigenous to Turtle Island nor from the community where the research takes place. I introduce and operationalize *Dùthchas*—a Scottish Gaelic concept and way of life—as a qualitative research methodology as part of a greater Anishinaabe research paradigm *Mino-Bimaadiziwin* (The Good Life). I position and self-locate myself in relation to the research before summarizing five key principles of *Dùthchas*. In this chapter, I exemplify how *Dùthchas* has served as a guide for ongoing self-decolonization processes and emplaced ethical relations on the *TEK-nology* pilot project. I illustrate how the *Dùthchas* principles assisted me in conceptualizing a kincentric and relational approach to Indigenous, community-led research. I conclude the chapter with *Dùthchas*' implications for Indigenous—non-Indigenous reconciliatory relations and future qualitative, kincentric research methodologies. This chapter addresses RO2.

In Chapter 4 of this thesis, I focus on the potential and the impact of the immersive, community-led Indigenous language acquisition approach, *TEK-nology* (Traditional Ecological Knowledge (TEK) and technology). In this chapter, I elaborate on the research context and on the research co-creation process as part of a pilot project steered by a community-led language revitalization committee. In this chapter, I identify (1) the impacts of centering Indigenous worldviews in technology, language learning, and teaching; (2) how we can develop and co-

create technology-enabled, culturally, emotionally, and environmentally responsive pedagogies; and (3) the important implications of decolonizing language education for Indigenous and majority languages. The analysis indicates how community-led, relational technology and immersive Indigenous language acquisition can support Anishinaabemowin language reclamation and revitalization and foster more equitable multicultural and multilingual education practice and policy. This chapter addresses in part ROs 1 and 3.

In Chapter 5 of this thesis, I review the impact of language planning and policy (LPP) for Indigenous language revitalization and language education. I argue that, to prevent further erasure and marginalization of Indigenous Peoples and languages, work is required at multiple levels and that top-down, government-led LPP *must* occur alongside community-led, bottom-up LPP. I exemplify how Indigenous community members on the *TEK-nology* pilot project are the language-related decision-makers as part of bottom-up, community-based language planning. The analysis in this chapter indicates that Indigenous-led, praxis-driven community-based language planning, using *TEK-nology*, can support (1) Anishinaabemowin language revitalization and reclamation and (2) more equitable, self-determined LPP to address inequities and the marginalization of Indigenous Peoples and their languages in education. The analysis demonstrates the important implications of the community-based language planning *TEK-nology* project for status and acquisition language planning; culturally responsive LPP methodologies; and federal, provincial, territorial, and family language policy. This chapter addresses RO3.

In Chapter 6 of this thesis, I conclude the study by discussing in greater detail the main implications of the *TEK-nology* pilot project and research co-creation as a whole. The empirical research analysis demonstrates that *TEK-nology*, as an immersive, technology-enabled, and community-led Indigenous language acquisition approach, can support intergenerational

language transmission of Anishinaabemowin. The research analysis illustrates that *TEK-nology* also serves as a community-based language planning model and online site of praxis that can inform more self-determined ILR initiatives worldwide and more equitable language policies to address educational inequities. Furthermore, I discuss how the implications of Dùthchas as a kincentric methodology for emplaced ethical relations can inform ways in which we can foster, improve, and uphold emplaced ethical and mutually respectful Indigenous—non-Indigenous to Turtle Island (research) relations.

Preface to Chapter 2

Chapter 2 builds on the interdisciplinary literature reviewed in the general introduction. A shared and common goal for Indigenous language revitalization initiatives is to revitalize intergenerational language transmission processes in the home, the community, and beyond, in as many ways possible. How could technology support this nuanced process and existing initiatives? And what would be its role? To further explore this question, Chapter 2 serves as a literature review of the role of digital and online technologies²² for Indigenous language revitalization since the creation of the World Wide Web in 1989.

Chapter 2 is specific in its focus and investigates to what extent digital and online technologies can support community-led and self-determined Indigenous language reclamation and revitalization processes. It seeks to respond to policy calls in the Canadian context for technology to be rooted in Indigenous worldviews (Government of Canada, 2018). In this chapter, I explore how technology has been employed for Indigenous language revitalization in the past three decades since 1989. I synthesize key takeaways and implications of technology's use for future initiatives. Chapter 2 informed the conceptualization and design of the *TEK-nology* (Traditional Ecological Knowledge and technology) pilot project that I will discuss further in the remaining chapters of this thesis.

Evaluating the role of technology for Indigenous language revitalization is crucial. Technology cannot simply be “copy-pasted” into existing or future initiatives without first locating its epistemic foundation and orientation. Many online and digital technologies have been developed by western, capitalistic multi-billion-dollar companies or individuals. For

²² An example of digital technologies is the cellphone. An example of online technologies is the Internet.

example, the World Wide Web was created by an American, Tim Berners-Lee, and was envisaged primarily to be monolingual, monocultural, and in English (Kelly-Holmes, 2019). As demonstrated in Chapter 1, the dominant western worldview is incompatible with Indigenous worldviews and can transmit a colonial, human-centred, imperialistic worldview. In Chapter 2, therefore, I illustrate how *technology is not neutral* and that it can have positive or negative impacts, depending on which worldview or knowledge system is extended, who is using it, how it is implemented, and for what purpose. I focus on how digital and online technologies are created, adapted, or used by Indigenous Peoples and their communities.

In Chapter 2, I consulted a variety of academic and grey literature, such as reports, policy literature and government documents, from the past three decades. I included additional sources, such as websites and online newspapers, to inform the discussion and complement the academic and grey literature. I took a decolonizing approach, informed by Indigenous research methodologies and epistemological frameworks (Battiste, 2002; Smith, 2021), for the review and analysis. I took this approach to decenter search results determined by (colonial) western library knowledge organization systems alone, such as algorithms or metadata that classify or dismiss Indigenous knowledge as “folklore” (White, 2018). To do this, I used citation and reference list snowballing to consult and synthesize additional, relevant peer-reviewed, grey, and online literature from Indigenous scholars, writers, and creators across the globe.

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It is included here as printed, following journal style.

Chapter 2: Decolonizing the digital landscape: the role of technology in Indigenous language revitalization

Abstract

Due to colonization and imperialism, Indigenous languages continue to be threatened and endangered. Resources to learn Indigenous languages are often severely limited, such as a lack of trained or proficient teachers. Materials which follow external standards or Western pedagogies may not meet the needs of the local community. One common goal for Indigenous language revitalization initiatives is to promote intergenerational language transmission and use in multiple social domains, such as the home. Could the use of technology assist in Indigenous language revitalization? And what would be its role? This article, emerging from ongoing research, aims to synthesize some key takeaways on the role of digital and online technologies in Indigenous language revitalization over the past three decades since the foundation of the World Wide Web in 1989. The article highlights how Indigenous communities, content creators, scholars and visionaries have contributed to an ongoing decolonization of the digital landscape.

Keywords

decolonizing technology, Indigenous language revitalization, online, technology

2.1 Positionality

Halò a chàirdean. Is mise Pòl Miadhachàin-Chiblow. 'S e Gàidheal a th' annam. Tha mi à Glaschu, ann an Alba. Hello, friends. My name is Paul Meighan-Chiblow. I'm a Gael from Glasgow, Scotland.

My research focuses on Indigenous language revitalization and is informed by experiences as a Gàidheal (Scottish Gael) in Glasgow, Scotland where, for example, my endangered mother tongue, Gàidhlig (Scottish Gaelic), was not available to me in the educational system. Members of my family and older generations recall being beaten for speaking it in school, and Gàidhlig, spoken for more than 1500 years in Scotland, is still not recognized as an “official” language in the United Kingdom. My motivation for equitable education and language revitalization has continued to grow after meeting my Anishinaabe (Indigenous Peoples of the Great Lakes region of Turtle Island, also known as North and Central America) husband in Scotland. I learned more about the devastating impacts of colonialism on the Indigenous Peoples of Turtle Island. We talk frequently about the importance of reclaiming and speaking our languages, languages which have been oppressed and pushed to the verge of extinction by centuries of colonial governments and educational policy. We want to speak our languages in our home and with our future children.

I am grateful to currently reside with my husband in T'karonto (Toronto), the traditional lands and territory of many nations including the Mississaugas of the Credit, the Anishinaabeg, the Chippewa, the Haudenosaunee and the Wendat Peoples and now home to many diverse First Nations, Inuit and Métis Peoples. We acknowledge the waters, animals, plants and all more than human entities of Turtle Island and our responsibilities to them. Miigwetch (thank you in

Anishinaabemowin, the language of the Anishinaabe Peoples) and tapadh leibh (thank you in Gàidhlig).

2.2 Introduction

Due to colonization and imperialism, Indigenous languages continue to be threatened and endangered (Chiblow & Meighan, 2021). Resources to learn Indigenous languages are often severely limited, such as a lack of trained or proficient teachers. Materials which follow external standards or Western pedagogies may not meet the needs of the local community. One common goal for Indigenous language revitalization (ILR) initiatives is to promote intergenerational language transmission and use at home. Could the use of technology assist in ILR? And how do we define technology and its role?

Technology is much more than just machines. Technology is the result of practical applied knowledge, skills and networks which are continually evolving, fluid and context-dependent (Silverstone, 2005). In other words, technology is not neutral and is the extension of the knowledge and belief system which has led to its creation (Strate, 2012). Examples of technology include writing systems, the pencil, the wampum belt, mass media, television and, more recently, online and digital technologies, such as the Internet and cellphones.

A fundamental issue that needs to be taken into consideration when discussing the role of technology in ILR is identifying which or whose knowledge system is being enacted. Who created the website? What is its purpose? How is data being shared or stored online? These questions and concerns are particularly crucial when it comes to discussing Indigenous languages and cultures which have been disprivileged and disenfranchised by imperialistic, capitalistic and colonial knowledge systems (Battiste, 2002; Macedo, 2019). Pool (2016) underscores, “for their

colonising mission, imperialists imported data methodologies, smugly assuming that epistemologies other than Euro-North American ones were inferior. This view still haunts the wider society's acceptance of information systems now being generated by Indigenous scholars" (p. 62).

This article, emerging from ongoing research, aims to synthesize some key takeaways on the role of technology in ILR over the past three decades and highlight how Indigenous Peoples have contributed to an ongoing decolonization of the digital landscape. The article is non-exhaustive in that the context and discussion largely focus on the rapidly evolving landscape and influential proliferation of digital and online technologies in the past three decades since the creation of the World Wide Web in 1989.

2.3 Methods

A variety of academic and grey literature, such as reports, policy literature and government documents, from the past three decades have been synthesized for the purposes of this conceptual review article. Additional sources, such as websites and online newspapers, have also been implemented to inform the discussion and complement the academic and grey literature.

A decolonizing approach, informed by Indigenous research methodologies and epistemological frameworks (Battiste, 2002; Smith, 2012), to reviewing and synthesizing the literature has been taken. This approach decenters search results determined by colonial and Western library knowledge organization systems alone. For example, algorithms or metadata that classify Indigenous knowledge as folklore (White, 2018). Each source and literature item were selected based on fulfilling at least three of the following search criteria: colonization or decolonization; Indigenous or colonial education; Indigenous or Western technology and social

media; Indigenous language revitalization inquiry and technological initiatives; Indigenous methodologies and methods. Citation and reference list snowballing was also used to include additional, relevant peer-reviewed, grey and online literature.

2.4 The types, stages and applications of technology

Technology has been present for thousands of years, from power technology, such as the use of fire during the Old Stone Age, all the way through to our current day use of cellphones and social media. During this time, technology has evolved through varying stages, which have been summarized non-exhaustively in Table 2.1. The purpose of the table is to identify technological and relational trends in the past, present and future and to highlight the rapid development of digital and online technologies over the past three decades to this day.

Technology has been grouped into six types which have been listed in approximate chronological stages with examples in Table 2.1: (1) Facilitation technologies; (2) Communication technologies; (3) Web 1.0 Digital and online technologies (~1990–2005); (4) Web 2.0 Digital and online technologies (~2005–2015); (5) Web 3.0 Digital and online technologies (~2015–present); and (6) Semantic technologies.

Types and stages of technology	Examples	Relationship	Evolution
1.) Facilitation technologies	Crockery, pots, guns, agricultural machinery and tools	Individual and group → local environment	<i>Facilitation</i>
2.) Communication technologies	Writing systems (e.g., pictographs), writing implements, mass media (e.g., television), telephone, typewriter, computer	Individual, group and state → (mass) audience	<i>Communication</i>
3.) Web 1.0 Digital and online technologies (~1990 to 2005)	Digital cellphone, multimedia (e.g., DVD, CD-ROM)	State and group → mass audience	<i>Digital Information</i>
4.) Web 2.0 Digital and online technologies (~2005 to 2015)	Social media, smartphones, video games, the Cloud, broadband	State and group ↔ mass audience; Peer-to-peer (P2P)	<i>Digital Negotiation</i>
5.) Web 3.0 Digital and online technologies (~2015 to present)	Augmented reality (AR), virtual reality (VR), blockchain	P2P; Peer ↔ mass audience	<i>Digital Creation</i>
6.) Semantic technologies: (The future)	Internet reality, artificial intelligence (AI), 3D and 4D avatars	Technology ↔ human audience ↔ environment	<i>Digital Simulation</i>

Table 2.1: Types, stages and evolution of technology use

These categorizations are not indicative of all technological developments and are not neat or concrete historical or chronological boundaries. Instead, they serve as a basis to exemplify how technology has been viewed and utilized in dominant Western ideals of technological progress. Underscoring the dominant Western capitalistic worldview is particularly important here as the World Wide Web was created by Western people for a Western audience.

For example, Tim Berners-Lee, the inventor of the World Wide Web, envisaged “universality” and “dictated the monolingual [English] design of the web” (Kelly-Holmes, 2019, p. 28). The Web, however, is not monolithic or linear in terms of development and is still evolving. The notions of Web 1.0, 2.0 and 3.0, “although important when analysing the political economy of the Web” (Barassi & Treré, 2012, p. 1269), have limitations and are cultural constructs influenced by Western business rhetoric. They often carry “generalized understandings about the social uses of technology” (Barassi & Treré, 2012, p. 1281).

Table 2.1 also illustrates the relationship of technology between humans and interactants and the socio-technological evolution from Facilitation, Communication, Digital Information, Digital Negotiation, Digital Creation, to Digital Simulation. The relationship and evolution of technology is crucial to undertake a more holistic and nuanced assessment of technology’s social impact on ILR and better understand who is enacting technology and for whom. The continually evolving Internet, or Web, is a complex socio-technical environment with multiple uses dependent on social contexts and relationships (Barassi & Treré, 2012).

This article will focus on the role of digital and online technologies in ILR during the Web 1.0, 2.0 and 3.0 eras. The purpose is to track what developments there have been in technology’s social role and what these trends signify for a decolonized, more than Western, digital landscape and future.

2.5 Digital and online technology use in ILR initiatives

2.5.1 Technology use in the Web 1.0 period (~1990–2005)

During the Web 1.0, there were several examples of ILR initiatives which used the affordances of the new World Wide Web and digital technologies, such as the desktop computer and the CD-ROM.

One of the first ILR initiatives to utilize the potential of the World Wide Web and Communication Technologies was Te Wahapu (The Estuary). Te Wahapu was a computerbased communications system created in 1990, focused on the revitalization of the Maori language in New Zealand to “symbolize the integration of high technology with Maori concerns and interests . . . [and] convey the message that ‘English has no monopoly when it comes to making use of advanced technology’” (Benton, 1996, p. 189).

Another example is Leoki (Powerful Voice), an electronic bulletin board system established in 1993 and delivered entirely in the Hawaiian Indigenous language (Warschauer, 1998). Leoki provided “online support for Hawaiian language use in the immersion schools and the broader community” (Warschauer, 1998, p. 142). Leoki facilitated the creation of materials which were both culturally responsive and in the language.

Revitalization and reclamation strategies during the Web 1.0 era have involved creating spoken and written dictionaries and audio- or video-recording Elders speaking their Indigenous language. The web-based resource FirstVoices, founded in British Columbia, is an example of how technology has been utilized by First Nations’ communities in Canada to document, archive and learn Indigenous languages using text, sound and video clips (First Peoples’ Cultural Foundation, 2003). Users can to this day interact on the site, which includes an archive, chat facility, games, videos, storybooks and a language tutor.

Interactive CD-ROMs and other types of multimedia have also been used for ILR during the Web 1.0 era. In Alaska, the Lower Kuskokwim School District produced a bilingual CD-ROM in English and Yup'ik, a central Alaskan language, for the traditional story How the Crane got Blue Eyes (Cazden, 2002). A computerized database in the Tlingit language, spoken by the Tlingit people of southeast Alaska and western Canada, had historical information and a talking map in Tlingit and English (Cazden, 2002). The Unipkaaqtualiurut Project and the Uggianaqtuq CD-ROM recorded Elders and documented environmental knowledge in Inuktitut, an Inuit language (Gearheard, 2005). In central California, interactants could view performances of traditional and contemporary verbal art in the Mono language on the Taitaduhan (Our Language) CD-ROM and select an option to view with translation into English (Kroskirty & Reynolds, 2001). Other examples of multimedia ILR initiatives from across the globe include a modern-day television soap opera in Scottish Gaelic (Cormack, 1994) and a CD-ROM for adolescents about ice hockey in Ojibwe (Williams, 2002).

2.5.2 Key takeaways and insights on the role of technology in the Web 1.0 Era

The examples of ILR initiatives above have been fundamental for making Indigenous voices heard and represented across the globe during the beginnings of the digital age. The ILR technology-enabled initiatives enabled Indigenous communities to “cut out the middle people . . . and speak directly to their audience” (Jopson, 1997, para. 10).

As Table 2.1 illustrates, this era was characterized by the evolution of a largely unilateral transfer of Digital Information. Information pertaining to Indigenous languages, cultures or communities was placed on the Internet by a group, community or state, without the broader input of those who were using the materials. Despite many Web 1.0 initiatives being coined

interactive, such as the ability to listen, view or click on materials, there was a lack of co-creation of knowledge or user input on material development. The majority of the initiatives were examples of low-tech (Galla, 2009) projects based on one sensory mode: in this case, output over input. Looking in more detail at who creates endangered language websites and the level of knowledge co-creation, Buszard-Welcher (2001) finds that 38% of the 50 sites on “Native American or Canadian” Indigenous languages belonged to groups and only four of those were created by a “Tribal” member or official organization (p. 332).

Some of the CD-ROMs lacked cultural context, such as in the case of the Yup’ik language and culture (Cazden, 2002). For instance, Indigenous words were placed on the CD-ROM without a literal or faithful translation which could transmit valuable knowledge about the origins of a word or phrase and the local ecosystem. Leonard (2001) gives an example of Vichingadh Ethog (Yellow Pond Lily) in Deg Xinag, an Alaskan language. A more faithful translation would be “Muskrat’s Plate” (Leonard, 2001, p. 4). Leonard remarks, “For a beginning language learner, literal translations provide a great deal of fascinating cultural information and further impetus for investigation into one’s own culture” (p. 4). Much of the material in the Web 1.0 era for ILR did not go beyond the “word or phrase level” (Galla, 2009, p. 176). Much of the content was primarily bilingual or framed in the dominant language, English, and the Western worldview. Galla (2016) remarks on materials from the 1990s that “a significant challenge that language instructors of endangered languages face is a lack of textbooks, pedagogical, culturally relevant, appropriate, and authentic materials that depict the language and culture in a non-stereotypical way” (p. 1146).

The cost of developing and creating materials and software, filming, recording and purchasing hardware, such as desktops and other multimedia tools, were very costly and

involved considerable amounts of time (Kroskrity & Reynolds, 2001). Access to the newly created Internet and hardware or software was limited to certain areas or people who had the ability to connect and also afford the costs of being online (Carpenter et al., 2017). This digital divide was more pronounced for some communities, and many who could have benefitted from the technological innovations of this period did not have as many chances to fully participate.

Technology in the Web 1.0 era did offer much potential for ILR and also had an additional “cool” element (Buszard-Welcher, 2001, p. 337). This element can appeal particularly to the younger Indigenous generation and help restore prestige and pride in Indigenous languages and cultures (Buszard-Welcher 2001). Technology, despite not yet being fully dialogic in terms of co-creation of knowledge, was a means of interaction among language activists. Email lists and the like enabled platforms for sharing Indigenous innovations, aspirations and concerns across different website groups (Grenoble & Whaley, 2006; Warschauer, 1998). Technology connected language activists both within, across and outside of Indigenous communities, fostered relationships across the globe, and was a crucial “key motivator in the sense they are ‘not going it alone’” (Grenoble & Whaley, 2006, p. 190).

2.5.3 Technology use in the Web 2.0 and Web 3.0 eras (~2005–present)

ILR initiatives have begun to build upon the strategies incorporated during the Web 1.0 era and take advantage of new advances in digital and online technologies during the Web 2.0 and Web 3.0 eras. In dominant Western business rhetoric, Web 2.0 era is characterized by increased user participation or collaboration (Barassi & Treré, 2012). Examples of Web 2.0 digital and online technologies are faster broadband Internet speeds; P2P sharing and creation, such as Wikipedia; social media, such as Facebook, YouTube and Twitter; and the smartphone (see Table 2.1). The

emerging Web 3.0 era is viewed as having increased user creation, cooperation (Barassi & Treré, 2012) and a decentralization, localization and democratization of power. Examples of Web 3.0 technologies include blockchain distributed ledger technology, geolocation, and augmented reality (AR) or virtual reality (VR).

The Web 2.0 and 3.0 periods will be discussed together. Forms of technology use between 2005 and the present day have involved cross-over elements and interplay which are still emerging, can be categorized as both Web 2.0 and Web 3.0, and do not neatly fit a chronological timeframe. As Barassi and Treré (2012) remark, “the Web needs to be understood as an integrated socio-technical system, in which different Web applications and stages coexist” (p. 1273).

From digital information recipients to Indigenous digital negotiators and creators. The main feature of the Web 2.0 and 3.0 eras is moving beyond Digital Information to Digital Negotiation and Digital Creation. ILR initiatives have more widely implemented digital technologies with the view of enabling Indigenous language speakers and learners, in both remote and urban areas, to access informal, formal and self-directed language and cultural learning opportunities. These include using the Internet and webbased resources to share land-based planning activities, such as information about hunting, fishing and other traditional economic activities (Beaton & Carpenter, 2016). For example, SIKU (Sea Ice) is an Inuit Knowledge Wiki and Social Mapping Platform app which shares traditional knowledge information and satellite imagery to Inuit communities (Heath & Arragutainaq, 2019). And in Southeast Asia, the web-based eToro application, under the control of the Penan Indigenous community, stores traditional botanical knowledge in the Penan language and assists in passing traditional knowledge to the youth

(Zaman et al., 2015). These small examples “connect youth and Elders to help promote intergenerational knowledge transmission . . . all the while encouraging language revitalization” (Winter & Boudreau, 2018, p. 45).

Digital and online spaces for learning and implementing Indigenous languages have also begun to move beyond viewing or clicking on materials to enabling more opportunities for more collaborative and multimodal interaction, negotiation and creation. For example, the use of keyboard, audio, video, screen and image. Incorporating the multimodality that advances in technology can afford also goes well with Indigenous ways of knowing and being. For example, the oral transmission of knowledge through storytelling and learning by doing (Battiste, 2002).

Websites and apps which are facilitative, such as dictionaries, verb conjugators, and spellcheckers; collaborative, such as games, forums, and simulations; and instructional, such as teaching materials and drills (Wagner, 2017), have been created. The Passamaquoddy-Maliseet Language Portal (www.pmportal.org) is an example of a facilitative web collection of language documentation materials which contains short videos of conversations and interactions between fluent Passamaquoddy-Maliseet speakers (Wagner, 2017). KOBE Learn is an instructional app, developed by language teachers, Elders and community members in northern communities in Canada and designed to help young users learn common words and phrases in the Ojibwe, Cree and Oji-Cree languages (Hadley, 2019). Talk Sauk (www.talksauk.com) is a collaborative website, created by the Sauk language department in collaboration with Elders, which has an interactive dictionary, games, videos and more (Wagner, 2017). In addition, the latest innovation of FirstVoices, the BC language revitalization initiative highlighted in the Web 1.0 section, is a Keyboard App (www.firstvoices.com/content/apps) that enables users to type in over 100 Indigenous languages on any social media app or technological device. These initiatives are low-

tech (one sensory mode), mid-tech (two sensory modes) and high-tech (multimodal interactive technology) (Galla, 2009), depending on community needs and the learning context.

Indigenous Internet creators decolonizing the digital landscape. In the Web 2.0 and Web 3.0 eras, Indigenous communities have gone beyond being recipients of information or collaborators to also being Internet “Producers” (Kelly-Holmes, 2019) and creators. They have had more control and self-determination over the content produced and created (see Table 2.2). This self-determining creation step is necessary to decolonize the digital landscape and ensure that Indigenous voices and worldviews are also represented and privileged online in a culturally relevant way.

Movie, video and song projects have been and are being developed by Indigenous Peoples with a focus on Indigenous languages and cultures. Cellphones and cellfilm (Schwab-Cartas, 2018) have been used to document and record embodied practices in an Indigenous language. For example, the filming of an Elder making traditional food in the Zapotec language in Mexico (Schwab-Cartas, 2018). Movies have been made in Indigenous languages which are critically endangered, such as the film *SGaawaay K'uuna* (The Edge of the Knife) released in 2018 and made entirely in the Haida language. And Jeremy Dutcher, the 2018 Polaris Music Prize winner, released the album *Wolastoqiyik Lintuwakonawa* (Our Maliseets Songs) in which Jeremy sings in the Wolastoqiyik language.

Technology Use	Examples
Apps	SIKU KOBÉ Learn eToro
Websites	Passamquoddy-Maliseet Language Portal Talk Sauk FirstVoices
Movies, music and videogames	Cellphilm (cellphone videos) SGaawaay K'uuna (Edge of the Knife) (movie) Never Alone; Honour Water (videogames) Wolastoqiyik Lintuwakonawa (music album)
Social media	Facebook Indigenous YouTube, Instagram, Twitter, TikTok videos
Coding	Pinnquaq Association Virtual Songlines Australia Coders North
Digital archives	C'ek'aedi Hwnax Alutiiq Museum Language Archive Plateau People's Web Portal FirstVoices
VR, AR and AI	Biidaaban: First Light (VR) Buffalo Tongue (VR and AR) Ogoki Learning (VR app) Abtec (VR, AR and AI) Te Hiku Media (AI) Hua Ki'i (AR and AI app)
AR: Augmented Reality; AI: Artificial Intelligence; C'ek'aedi Hwnax: Legacy House; eToro: Indigenous Penan Peoples' Botanical Knowledge Management System; Hua Ki'i: Hua 'Ōlelo (word) and Ki'i (image); SIKU: Sea Ice; Indigenous Knowledge Social Network; VR: Virtual Reality; Wolastoqiyik Lintuwakonawa: Our Maliseets Songs	

Table 2.2: Consolidation of Indigenous Internet creators decolonizing the digital landscape

Video games are also providing a rich medium that reflects traditions of oral storytelling with different strategies for language and cultural preservation and revitalization (Lameman & Lewis, 2011). The Never Alone game was developed by the first Indigenous-owned gaming company, Upper One Games, in collaboration with the Iñupiat, an Alaska native people (Winter

& Boudreau, 2018). Honour Water is a singing game and features Anishinaabe songs and teachings about the importance of protecting water (Hearne & LaPensée, 2017).

Indigenous social media use has become more influential and visible during the Web 2.0 and Web 3.0 eras. Although social media can have drawbacks and very real negatives such as cyber bullying and cyber racism, platforms such as Facebook, Twitter and YouTube have assisted ILR and Indigenous communities in sharing community and cultural knowledge, events, memes and snippets of language (Castleton, 2018; Rice et al., 2016). Sharing stories or videos online as part of Facebook groups, Instagram or Twitter posts, or on YouTube and TikTok enables Indigenous young people to be their Indigenous identities. Indigenous youth can connect, affirm and give a voice to their own particular cultural and linguistic identities which have not been constructed, imagined, or set by outsiders (Katsi'sorókwaw Jacobs, 2019; Rice et al., 2016).

Indigenous coders and coding initiatives have become more prominent. The Pinnuaq Association piloted a coding workshop where Inuit children created their own sites and content (Toth et al., 2018). Virtual Songlines in Australia taught Indigenous youth to code their own content and be proud of their culture and heritage (Microsoft Asia News Center, 2018). Coders North in Northern Ontario also launched in 2019 to bring together Indigenous digital producers, teach coding and highlight opportunities for Indigenous youth to learn through digital technology (Engel, 2019). More Indigenous-led and -guided digital archives and content management systems (CMS) are emerging as a response to colonizing effects of exclusion, discrimination and annihilation of Indigenous knowledges, Peoples and lifeways (O'Neal, 2014). C'ek'aedi Hwnax (Legacy House), established in 2009, "is the first OLAC [Open Language Archive Community] -compliant, Indigenously-administered digital language archive in North America" (Berez et al., 2012 p. 237). FirstVoices hosts Indigenous public and private community sites for language

archiving where the Indigenous community members retain ownership of any content they create. Mukurtu (Dilly Bag) CMS is a “community driven software that addresses the ethical curation of, and access to, [Indigenous] cultural heritage” (Christen et al., 2017 para. 2). Mukurtu is used by various Indigenous communities and organizations globally for their digital language and culture archives, such as the Alutiiq Museum Language Archive in Alaska (www.languagearchive.alutiiqmuseum.org) and the Plateau People’s Web Portal (<https://plateauportal.libraries.wsu.edu/>). Although there is still much work to be done to safeguard Indigenous data sovereignty and ensure respectful, reciprocal and reconciliatory archival collections (O’Neal, 2014), these developments “exemplify how communities long regarded as objects of study have instead increasingly become leaders in the study and stewardship of their own languages” (Henke & Berez-Kroeker, 2016, p. 425).

Indigenous scholars, creators and visionaries are also making an impact in emerging AI, AR and VR technologies. Aboriginal Territories in Cyberspace (www.abtec.org) and the Initiative for Indigenous Futures (www.indigenousfutures.net) are Indigenous-determined research networks at Concordia University, Montréal, who are consolidating Indigenous presence in virtual worlds. Ogoki Learning develops immersive Indigenous language learning apps using VR (www.ogokilearning.com). Buffalo Tongue is an Indigenous-led non-profit which “create[s] virtual and augmented reality experiences to advocate for Native American voices, languages, and cultures” (Running Wolf in Lewis, 2020, p. 186). Bidaaban: First Light is a 2018 VR movie with narration in the Wendat, Mohawk and Ojibwe languages. Te Hiku Media, created from Indigenous language data and following cultural protocols, is able to deploy the “first speech-to-text algorithm in Te Reo Māori” (Moses in Lewis, 2020, p. 162). And Hua Ki’i is an AR prototype of an “Indigenous language image recognition app with geolocation

functionalities [which] allows the user to take a photo of an object and learn the word for that object” (C. Running Wolf et al., 2020, p. 110).

2.5.4 Key takeaways and insights on the role of decolonizing technology from the present-day Web 2.0 and Web 3.0 eras

Digital and online technologies in the Web 2.0 and 3.0 eras are dramatically more inexpensive than in the Web 1.0 era and barriers to entry have been considerably reduced. The digital divide, despite still needing improvements in terms of physical and non-physical access and equitable representation, begins to narrow as most Indigenous Peoples, even in remote areas, now have access to a cellphone and use it to interact and communicate (Carpenter et al., 2017; Rice et al., 2016). Cellphones can record, film and connect to Internet. Indigenous Peoples no longer need to rely on governmental or external funding to start projects as many ILR initiatives can be started from the home community. For example, the AR prototype Hua Ki'i “currently has a modest feature set but 10 years ago the technologies that enable it were unattainable beyond wellfunded labs” (M. Running Wolf, 2020, p. 120).

The digital landscape continues to be decolonized. There are now more Indigenous technologies and learning environments that have been implemented and created by and for Indigenous Peoples. For example, Indigenous sites, software developers, coders, Indigenous AI, AR and VR. The Internet and digital technologies can foster a transnational space where colonial nation state binaries and linguistic boundaries are dissolved (Darwin & Norton, 2014).

Indigenous Peoples can assert their “right to speak” (Darwin & Norton, 2014, p. 59) in their Indigenous languages and in a way that is respectful to their local communities.

Indigenous creators and technologists are counteracting negative and Western or colonial imposed stereotypes which view Indigenous Peoples as being confined to a very specific place, time and land (Winter and Boudreau, 2018). Stereotypes like this perpetuate a museological context (Castleton 2018); broadstroke Indigenous Peoples into false dichotomies, such as traditional as opposed to modern; and facilitate a colonial and imperialistic exploitation and conquest of the digital world. Kornai (2013), for example, in his case study *Digital Language Death*, claims that what is underway “is not just a massive die-off of the world’s languages, it is the final act of the Neolithic Revolution, with the urban agriculturalists moving on to a different, digital plane of existence, leaving the hunter-gatherers and nomad pastoralists behind” (p. 10). Not only is a racist remark of neo-Darwinist linguistic analysis and tradition (Macedo, 2019), his case study does not acknowledge that language death or loss is a byproduct of oppression and colonization (Bird, 2020). Kornai’s (2013) study also does not take into account endangered language cellphone use, apps or social media, such as Facebook or Instagram. These modes have been largely used, especially by Indigenous youth, in ILR initiatives during the Web 2.0 and 3.0 eras.

Indigenous Peoples decolonizing the digital landscape are breaking habits of algorithmic, linguistic and technological colonization (Bird, 2020). For example, Western linguists or scholars, such as Kornai (2013), can assume that some Indigenous languages are underresourced due to a lack of textual speech data or standardized language forms. Bird (2020) remarks that this is a “colonising frame” which assumes “that major western languages are standard-bearers, and that Indigenous languages need the standard technologies” (pp. 3507– 3508). For some Indigenous communities and ILR initiatives, the goal may not be fluency or to have standardized language forms, voice recognition, such as Siri and Alexa, spellcheckers, or autocorrect. As

Leanne Hinton remarks, “language revitalisation in areas of language diversity and small populations is going to be very different than for languages like Hebrew, Hawaiian and Māori” (University of British Columbia, 2015). Bird underscores, “a dictionary app may represent an access point for one participant, and a marker of recognition in the digital realm to another. And this latter is no less valuable, given that prestige is a factor in language shift” (p. 3509).

More research needs to be carried out by or with Indigenous Peoples on how Indigenous Peoples view and use technology, what purpose this serves or has served, and whether or not this impacts on day-to-day language usage and promotion of cultural identity. Indigenous language learners need to find technology culturally engaging (Pitawanakwat, 2018) and integrated in an accessible, current and user-friendly way that enables language learning beyond isolated words or decontextualized phrases (Galla, 2009). The aim of many community ILR initiatives is to promote Indigenous language usage in domains such as the home or everyday social contexts (Hinton, 2003, 2013; Pitawanakwat, 2018). Technology-enabled and community-determined ILR (see Table 2.2) can assist in this process by moving beyond decontextualized Western learning objectives and embodying the “cultural, historical, ecological, and spiritual contexts that underlie the way a community defines its language” (Leonard, 2017, p. 18).

Many technology-enabled and self-determined ILR initiatives during the Web 2.0 and 3.0 eras have been centering community needs rather than externally defined or set goals, such as grammatical fluency (Leonard, 2017) or a digitally “thriving status” (Kornai, 2013, p. 1). Leonard (2017) calls this a framework of “language reclamation” which “centers community definitions of language at every stage, and thus prioritizes Indigenous needs and ways of knowing in the academic research, language pedagogies, and other work that underlie a given community’s language efforts” (p. 18). Technology use that is responsive to the local Indigenous

community can foster more ethical relationships and “relational language technologies” (Taylor et al., 2019, p. 3511) going forward.

2.6 Conclusion: Looking to the future of decolonizing technology in ILR

The role of technology in ILR has grown and evolved in a short space of time from being an extension of dominant Western hegemonies (Kelly-Holmes, 2019) to one in which Indigenous Peoples have an active and important voice in how technology is used, envisioned and created. Even if some underlying software is in English, Indigenous creators and developers are being “firm in applying Indigenous *thought* and *practice* into [the] . . . design and construction” (emphasis added, C. Running Wolf et al., 2020, p. 113).

Big questions regarding data sovereignty, for example, will always have to be asked before simply copy-pasting technology into ILR initiatives. Which system of knowledge is privileged? Where is the information or knowledge stored? Who has the power to access the knowledge and create streams of knowledge transmission? As illustrated in this non-exhaustive article, “Indigenous communities have long been engaged in the process of ensuring that technology platforms reflect and respond to their traditional ways, cultures and languages” (Carpenter et al., 2017, p. 10). This process continues to this day with Indigenous social media, websites, movies, music, apps and more. There are Indigenous Peoples working to ensure that the rapidly evolving future of AI has an ethical foundation rooted in and reflective of Indigenous worldviews and languages (Lewis, 2020).

The social use of technology in ILR is also not necessarily considered a substitute to real-life face-to-face interaction or as a panacea for ILR. Technology can be in relation to existing and future initiatives, a means to reclaim pride in Indigenous languages and cultures, and a way

for existing and future speakers and learners to learn and interact. As with face-to-face interactions, the intent and relationship that one forms and builds with technology will decide what impact its present and future use will have. Warschauer (1998) remarked, “Can Indigenous peoples appropriate new network technologies for their own purposes, or in attempting to do so will they see their own cultures and languages swallowed up in a homogenous whole?” (pp. 139–140). More than 20 years and several stages of digital and online technologies later, some may ask the same question. The answer lies in no longer viewing culture or language as a static, decontextualized, monolithic entity; no longer measuring Indigenous Peoples or languages against colonial yardsticks; and Indigenous Peoples having complete self-determination over their use, negotiation, implementation, and creation of technology. This self-determination also means Indigenous communities can choose to engage “outside experts” in ILR projects based on their terms and needs (Bird, 2020, p. 3507).

This article demonstrates that there are very promising indicators of Indigenous socio-technological self-determination. Indigenous content creators, developers, and visionaries are becoming increasingly visible and influential in decolonizing the digital landscape to better serve Indigenous Peoples, their languages, and their communities.

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Preface to Chapter 3

Just as the role of technology is important to consider, as discussed in Chapter 2, so too is the role of the researcher. In Chapter 3 of this thesis, I focus on the methodological approach taken for the *TEK-nology* pilot project and the role of the researcher who is not Indigenous to Turtle Island nor from the Anishinaabe community where the research takes place.

Considering the role of the researcher is crucial for work that seeks to be helpful, beneficial, and ethical. Research has traditionally been carried out *on*, rather than in collaboration *with*, Indigenous Peoples. Methodological approaches until the mid-1980s emanated, by and large, from a western, eurocentric, and positivist viewpoint which has privileged the agenda of a colonial academy and the “ivory tower” (Colorado, 1988; Ermine, Sinclair, & Jeffrey, 2014; Leonard, 2017; Smith, 2021; Tuck & Yang, 2012). Many research practices have been based on colonial, ethnocentric perceptions of Indigenous cultures, languages, and histories. These perceptions and assumptions have legitimized racisms, exploitation, extraction, and the marginalization of Indigenous Peoples (Davis & Reid, 1999; Hoover, 2017; Regan, 2010; Sardar, Nandy & Davies, 1993; Smith, 2021). The academy has viewed Indigenous Peoples as “subjects” or “objects” of study with little to no regard for the social realities they face nor the impact of the research on their wellbeing (Assembly of First Nations, 2009; Cajete, 2000; Deloria, 1991; Gilchrist, 1997).

Indigenous Peoples have been advocating for more holistic research rooted in Indigenous worldviews and “consensual allyship practices” (Lickers, 2019) to resist assimilative pressures, the extractive and unethical harms of the academy, and to be accountable to Indigenous communities. In the past decades, there has been an emergence of Indigenous research

methodologies and paradigms grounded in and respectful of Indigenous worldviews, knowledges, and local cultural protocols (Brant Castellano, 2004; Daniels, Sterzuk, Turner et al., 2021; Geniusz, 2009; Hart, 2010; Hermes, 1997, 2012; Kovach, 2021; Smith, 2021; Smylie et al., 2004; Weber-Pillwax, 1999; Wilson, 2001). Denzin and Giardina (2019) remark, “There is a need to unsettle traditional concepts of what counts as research, as evidence, as legitimate inquiry. How can such work become part of the public conversation? Who can speak for whom? How are voices to be represented?” (pp. 12-13).

The role of researcher subjectivity—the “who”—in western research has traditionally been discounted or relegated to an inferior position in the academy with the assumption that subjectivity may interfere in the objectivity of the research findings or the “absolute truth” of an “experiment”. Māori scholar Linda Tuhiwai Smith (2021) advocates for decolonizing research methodologies “which [engage] with imperialism and colonialism at multiple levels. For researchers, one of those levels is concerned with a having a more critical understanding of the underlying assumptions, motivations and values which inform research practices” (p. 20).

Anishinaabe scholar Nicole Bell (2019) refers to Medicine Wheel teachings in informing good Anishinaabe research, “The Medicine Wheel teaches the balance in all things, including research. The researcher must balance objectivity and subjectivity to ensure integrity in their work” (p. 182). And Opaskwayak Cree scholar Shawn Wilson (2001) stresses that researchers following Indigenous paradigms and methodologies should be “answerable to all your relations when you are doing research” (p. 177).

In Chapter 3, I demonstrate how I have sought to be answerable to all my relations, to maintain integrity in my work, and to critically appraise the assumptions, motivations, and values that have led to the conceptualization and implementation of the *TEK-nology* pilot project. I

introduce and operationalize Dùthchas—a millennia-old Scottish Gaelic concept and way of life—as a qualitative research methodology as part of a greater Anishinaabe research paradigm Mino-Bimaadiziwin (The Good Life). I describe what Dùthchas is by drawing on the literature and my own lived experiences as a Gàidheal (Scottish Gael) before identifying five key principles and four stages of Dùthchas as a research methodology.

In Chapter 3, I exemplify how Dùthchas has served as a guide for my ongoing self-decolonization processes and for emplaced ethical relations on the *TEK-nology* pilot project. I illustrate how the Dùthchas principles assisted me in conceptualizing a kincentric and relational approach to community-led research with participants from my Anishinaabe family’s community in Ketegaunseebee. I conclude this chapter with Dùthchas’ implications for Indigenous—non-Indigenous reconciliatory relations and for the conceptualization and implementation of future (qualitative) research methodologies with Indigenous communities.

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Chapter 3: Dùthchas, a Scottish Gaelic methodology to guide self-decolonization and conceptualize a kincentric and relational approach to community-led research

Abstract

A researcher's worldview shapes the research methodology, design, and ensuing relationship with participants and the local environment. Western research has traditionally been carried out on, rather than in collaboration with Indigenous Peoples and has largely been conducted through eurocentric and ethnocentric knowledge systems, methods, values, and beliefs which have perpetuated extractions, racisms, and harm. To counteract harmful research, Indigenous scholarship stresses the necessity of articulating and clarifying researcher positionality and self-location prior to embarking on research with or by Indigenous communities. A fundamental component of positionality and self-location is clarifying one's own relationships with colonialism and embarking on a process of self-decolonization. With this focus in mind, this paper shares methodological insights from an Anishinaabe community-led pilot project for Indigenous language revitalization in the Great Lakes Region of Turtle Island (also known as North and Central America) with participants to whom the researcher is related by marriage or known. This paper adds to existing qualitative methodological knowledge by introducing and operationalizing Dùthchas—a millennia-old Scottish Gaelic concept, worldview, and way of life—as kincentric methodology. The researcher begins the methodological inquiry with his own positionality and self-location as a Gàidheal (Scottish Gael) who is not Indigenous to Turtle Island. Following Dùthchas, the researcher identifies five key methodological principles that informed a kincentric and relational approach to community-led research. The paper

demonstrates how Dùthchas has served as a guide for the researcher’s ongoing self-decolonization processes and for emplaced ethical relations. The paper illustrates how Dùthchas enabled the researcher to be in-relation to the lands and Peoples where the research project took place and to conceptualize and conduct research as part of a greater Indigenous Anishinaabe research paradigm, Mino-Bimaadiziwin (The Good Life). Dùthchas has implications for Indigenous—non-Indigenous reconciliatory relations and for the conceptualization and implementation of future (qualitative) research in-relation methodologies.

3.1 Introduction

The researcher’s epistemological stance on any research inherently shapes its methodology and design. That is, a researcher’s knowledge and belief system, attitude towards, and ensuing relationship with the research and its participants. This stance influences which knowledge system is being extended, which stories are told, which questions are asked, and how the “data” are analyzed and interpreted (Chiblow, 2021; Smith, 2021).

Many methodological approaches to research with (or on) Indigenous communities have emanated from a positivist paradigm which assumes the researcher and the research can and should be “objective” and “neutral” (Colorado, 1988; Ermine, Sinclair, & Jeffrey, 2014; Leonard, 2017; Denzin & Lincoln, 2018; Meyer, 2001; Smith, 2021; Tuck & Yang, 2012). Research has largely been conducted through Eurocentric and ethnocentric knowledge systems, methods, values, and beliefs (e.g., Creswell, 2013; Dutton, 2005; Liu, 2011; Martin, 2003). The academy has viewed Indigenous peoples as “subjects” or “objects of study” with little regard to the social realities they face or the impact of the research on their wellbeing (e.g., Assembly of First Nations, 2009; Cajete, 2000; Deloria, 1991; Gilchrist, 1997). Research has traditionally

been carried out *on*, rather than in collaboration *with*, Indigenous peoples (McGregor et al., 2018).

To counteract extractive and harmful research approaches and methods, Indigenous scholarship stresses the necessity of articulating and clarifying researcher positionality, or “self-location” prior to embarking on research with or by Indigenous communities (Absolon, 2011; Kovach, 2009; McGregor et al., 2018; Riddell et al., 2017). Knowing how to authentically locate oneself is not a straightforward process since every researcher has their own unique worldviews, assumptions, beliefs, and interpretations of reality and knowledge which affect the totality and the impact of the research. Novice researchers may find the process of articulating and clarifying their positionality to be particularly challenging. Postgraduates commencing their research journeys for the first time may not have been required to position themselves previously or may have received very limited guidance on how to do so (Darwin Holmes, 2020). Darwin Holmes elaborates, “for new researchers doing this can be a complex, difficult, and sometimes extremely time-consuming process. Yet, it is essential to do so” (p. 20).

Researcher positionality, an ongoing critical and self-reflective examination of the researcher’s relationship with the research and its participants, is crucial across all disciplines, Indigenous or -non. It is a pre-requisite for equitable, trustworthy, and transformative work and a good methodological approach (Absolon & Willett, 2005; Held, 2019; Lavallée, 2009; Marom & Rattray, 2018; Lin, 2015; Tollefson, 2006). Absolon (2011) underscores, “location does matter. People want to know who you are, what you are doing, and why” (p. 73). When engaging with Indigenous research and given the harmful impacts of research on Indigenous communities, a fundamental element of positionality and self-location is clarifying one’s own relationships and intersections with colonialism and embarking on a process of self-decolonization (Geniusz,

2009). As Smith (2021) underscores, “‘research’ is inextricably linked to European imperialism and colonialism... [It] is probably one of the dirtiest words in the Indigenous world’s vocabulary...it stirs up silence, it conjures up bad memories, it raises a smile that is knowing and distrustful” (p. 1). Positionality and self-location are crucial to be transparent about intentions, avoid perpetuating colonialism, and build trust with Indigenous peoples and communities so they can decide whether to consent, or refuse to participate in any research collaboration (McGregor, Restoule, & Johnston, 2018).

This paper will focus on methodological insights from a community-led pilot research project for Indigenous language reclamation and revitalization (see Meighan, 2022 for further discussion on the project) with participants from my Anishinaabe family’s community in Ketegaunseebee (Garden River First Nation) in the Great Lakes Region of Turtle Island (also known as North and Central America). I will begin this methodological inquiry with my own positionality and self-location as a Gàidheal (Gael) in relation to this research. I will then introduce Dùthchas (which I translate as Ancestral Bonds) as a Scottish Gaelic methodological approach and guide to my self-decolonization journey. Smith (2021) explains that decolonizing methodologies are “about centring our concerns and world views and then coming to know and understand theory and research from our own perspectives and for our own purposes” (p. 43). I seek to add to existing qualitative methodological knowledge by introducing and operationalizing Dùthchas—a millennia-old Scottish Gaelic concept, worldview, and way of life—as a kincentric research methodology. I describe what Dùthchas is by drawing on the literature and my own lived experiences as a Gàidheal (Scottish Gael) before identifying five key principles and four stages of Dùthchas as kincentric methodology. I will illustrate how Dùthchas has enabled me to conduct and conceptualize research as part of a greater Indigenous

Anishinaabe research paradigm, Mino-Bimaadiziwin (The Good Life), and to be in-relation to the lands and peoples where the research project took place.

3.2 Positionality and methodological context

Is mise Pòl Miadhachàin-Chiblow. Pòl Mac Angusina Doileig Aonghais 'ill Easbaig. 'S e Gàidheal a th' annam. Rugadh agus thogadh mi ann an Glaschu, Alba. My name is Paul Meighan-Chiblow. Paul son of Angusina, daughter of Dolina, daughter of Angus, son of Archiebald. I'm a Scottish Gael. I was born and raised in Glasgow, Scotland.

My research focuses on Indigenous language revitalization and language education policy. My experiences as a Gàidheal (Scottish Gael) growing up in Glaschu (Glasgow) inform my work. I was raised by my mother who is from the Gàidhealtachd²³, more specifically, Dalabrog (Daliburgh), in the north-western island of Uibhist a Deas²⁴ (South Uist) in na h-Eileanan Siar (Western Isles) (see Figure 3.1). I remember hearing Gàidhlig (Scottish Gaelic) all the time around my fluent speaking grandmother, who was a core of our family. However, Gàidhlig, an endangered Indigenous language in Alba (Scotland) with approximately 57,000 speakers, was not available to me in the educational system. Gàidhlig and Gaelic culture were almost eradicated due to many factors, such as the forced eviction of the Gàidheil (Gael) from their traditional homes and lands during the Highland Clearances in the mid-18th to -19th centuries and the destruction of centuries-old Gaelic clan-based society after the Battle of Culloden in 1746 by British government forces (e.g., Hunter, 2014; MacKinnon, 2011, 2017, 2018). In more recent times, members of my family and older generations recall being beaten for

²³ Gaelic-speaking areas, also known as the Highlands and Islands of Scotland.

²⁴ Uibhist a Deas is one of the strongholds of the endangered Gaelic language and includes some of the strongest Gaelic-speaking communities in the world, ranging from 62% to 79% of the respective community population (Crouse, 2018).

speaking the language in classrooms. An example is the maide crochaidh (the “hanging” or “punishment” stick) that children passed along to those who were caught speaking Gàidhlig (MacKinnon, 2019). Moreover, Gàidhlig, spoken for more than 1500 years in Alba, is still not recognized as an official language in the United Kingdom. The multi-generational and psychological impacts of the trauma associated with the repression of Gàidhlig and Gaelic culture linger to this day and have been driving factors for language shift, “loss”, socioeconomic and sociopolitical inequities, and the near destruction of family and community intergenerational language transmission in Alba (e.g., Crichton Smith, 1982; McIntosh, 2020; Ó Broin & Chakour, 2022; Ó Giollagáin, 2020; Whittett, 1963). McFadyen and Sandilands (2021) elaborate,

The ongoing legacy of this coloniality of power is destructive in a myriad of ways. In the Gàidhealtachd the effects of clearance are still felt, with a fragile economy, rural housing crisis and the decline of the Gaelic language. In his essay, *Real People in a Real Place*, Iain Crichton Smith spoke of historical ‘interior colonisation’ alongside a growing materialism which, he believed, had left Gaels in a cultural milieu increasingly ‘empty and without substance’...such a view resonates with...perspectives made by writers and scholars of indigenous peoples across the globe. This is not to suggest or promote an equivalence here between the experience of the descendants of enslaved people and others who experienced colonisation by modern, imperial states; rather, such perspectives describe symptoms of human-ecological disconnect, alienation and loss of meaning – an indicator of just how far our human psyche and culture has become divorced from our natural environments. (p. 163)

As a direct result of deliberate processes of covert and overt linguistic eradication, family land dispossession, the role of the educational system, and internalized deficit ideologies about the “value” of Gàidhlig, I do not speak my language fluently *yet*. I am currently on a language reclamation journey as an adult learner since I refuse to be, as the Scottish Gaelic writer Iain Crichton Smith (1982) writes in *Towards the Human*, “colonised completely at the centre of the spirit” (p. 70). I introduce myself in Gàidhlig with my sloinneadh and four generations of family in Dalabrog, Uibhist a Deas. A sloinneadh is a Gaelic way of naming from whom you are descended so people in the local speaker community know who you are and to whom you are related. A sloinneadh can be patronymic or matronymic, depending on the context and circumstances. I use my matronymic line for two generations to honour my mother, Angusina MacGillivray, who raised me, and to acknowledge my grandmother, Dolina Walker. These Uibhistich (Uist women) are and were instrumental figures in my life, and without the strength, trust, and support of my mother I would not be who I am today.



Figure 3.1: Map of Alba (Scotland), na h-Eileanan Siar (the Outer Hebrides), and Uibhist a Deas (South Uist) (Google, n.d.)

My motivation for equitable education and language reclamation and revitalization has continued to grow since meeting my Anishinaabe Ojibwe husband in Glaschu in 2015. I immigrated to Turtle Island with him in 2016. Since then, I have learned more about the devastating impacts of colonialism on the Indigenous Peoples of Turtle Island from him and from discussions with my Anishinaabe family. We talk frequently about the importance of reclaiming and speaking our languages, languages which—in different contexts, lands, and to varying extremes—have been oppressed and pushed to the verge of extinction by centuries of colonial governments and educational policy²⁵ (MacKinnon, 2017, 2019; Truth and Reconciliation Commission of Canada, 2015; United Nations Permanent Forum on Indigenous Issues, 2018). We want to speak our languages in our home and beyond and with our future children and kin.

These experiences have led to my current research on the role of technology for endangered and Indigenous languages. I explored the *TEK-nology* (Traditional Ecological Knowledge [TEK] and technology) Indigenous language acquisition approach in a pilot project (Meighan, 2022) with participants from my Anishinaabe family’s community in Ketegaunseebee (Garden River First Nation) in the Great Lakes Region of Turtle Island (refer to Figure 1.1). As a

²⁵ Hunter (2011) writes, “What happened to Highland Gaels – whether the deliberate destruction of their kinship-based way of living or their subsequent romanticisation – happened also, although in more extreme and even less excusable ways, to Native Americans. And to be informed about both sets of experiences is to be better informed about each” (p. 117). Newton (2010) also underscores, “It would not be prudent to make simplistic and sweeping generalizations about the many encounters that happened between the First Nations of North America and immigrant Scottish Gaels in the late 18th and early 19th centuries. For one, First Nations were highly distinctive groups of different peoples; even Gaels themselves tended to belong to discrete groups (“clans”) with specific identities, traditions and traits. Furthermore, the elites of all these sets of peoples had been exposed to institutions of mercantilism, colonization, and acculturation by this time. Finally, all of these sets of peoples were subject to rapid and fundamental acculturation during this period as subalterns subsumed within the British Empire” (p. 225). Murdoch (2010) remarks, “Different as they were, the many peoples in North America who were considered ‘Indians’ and the Gaelic-speaking population of the Scottish Highlands were both considered ‘savage’ within the framework of the British empire in the seventeenth and eighteenth centuries” (p. 124).

(re)searcher who is not Indigenous to Turtle Island nor from Ketegaunseebee, I respectfully followed Anishinaabe protocols and methodologies on this project.

The pilot project was rooted in an Indigenous Anishinaabe paradigm, *Mino-bimaadiziwin* (The Good Life) to be responsive and in-relation to the Anishinaabeg community where the research was taking place. I followed an Anishinaabe community-led, decolonizing, participatory methodological framework, *Biskaabiiyang*, or “Return to Ourselves” (Geniusz, 2009).

Biskaabiiyang begins with the researcher decolonizing themselves to conduct meaningful research with the Indigenous community (Geniusz, 2009). As a methodology for my ongoing self-decolonization process, I follow *Dùthchas*, to which I will now turn. I will then discuss how *Dùthchas* informed the conceptualization of a kincentric and relational approach to the research participant recruitment, co-creation, interpretation/coding, and analysis.

3.3 What is Dùthchas?

Dùthchas is an intrinsic part of the *sealladh a’ Ghàidheil* (Gaelic worldview) and is derived from the Gaelic word “*dú / dùth*”, meaning “earth” or “land” (MacKinnon & Brennan, 2012).

Dùthchas can have several meanings, both internal and external dimensions, such as: hereditary right or claim, birthright, heritage, native or ancestral home, kindred affection, or innate quality (McQuillan, 2004). The word exists both as *Dùthchas* in *Gàidhlig* (Scottish Gaelic) and as *Dúchas* in *Gaeilge* (Irish). *Dùthchas*, as a Gaelic ontology and methodology, stresses the interconnectedness of people, land, culture, and an ecological balance among all entities, human and more than human (Meighan, 2022). Riach (2020) explains, “the importance of this concept of the connectedness and inter-relationships between land, people and culture, held in the word “*Dùthchas*”, cannot be overestimated” (para. 4).

Dùthchas can be considered an example of culture specific words, or “conceptual tools that reflect a society’s past experience of doing and thinking about things in certain ways; and they help perpetuate these ways” (Wierzbicka, 1997, p. 2). McFadyen & Sandilands (2021) elaborate that the “Gaelic concept of Dùthchas... [can be] understood as a cultural, ethical and reciprocal relationship with place” (p. 173). Ní Mhathúna (2021) underscores, Dùthchas is an “Indigenous cultural concept...representing an expanded place-based way of knowing” (p. 251). MacKinnon (2011) writes, “The idea that the land we live in and belong to is not just a landscape, but a deeply peopled, storied place, is integral to Gaelic and Indigenous understandings of the world” (p. 78). Newton (2019) explains how Gaelic words such as Dùthchas,

encode, transmit, and reinforce particular ways of thinking about the relationship between people and nature. These elements in Gaelic culture – oral tradition most specifically – encourage particular ways of ‘reading the landscape’ and perpetuate Gaelic ecological ideals and a sense of place and belonging for the individual and the community. These factors have shaped Scottish Gaelic culture and made it indigenous to its habitat in the Highlands and Islands. (p. 453)

Dùthchas predates the formation of the United Kingdom. Dùthchas is an extension of Gaelic law and land governance since it “was evidently a system of customary law or native title associated with traditional clan society and collective rights” (MacKinnon, 2018, p. 284) prior to the internal colonization of the Gàidhealtachd (see also MacKinnon, 2011; 2017; 2018). The inheritance of land and “heritable trusteeship” (MacInnes, 2006), encoded and transmitted

through Dùthchas, affirms dynamic and complex *kin- and land- based relationships* that bond people, extended kin, and community together beyond biological ties alone (Charles-Edwards, 1993; Newton, 2019). Newton (2019) explains, “Gaelic society has been structured in kin-groups for as far back as our sources go...the term clann literally means ‘children’ in Gaelic...Biological relationships did not by any means determine or exclude the range of bonds and arrangements that drew people together” (p. 208, 228). Ó Tuama (1985) elaborates on Gaelic kinship in relation to place,

It seems then that it is the sacred wedding of territory to chief – and by extension of territory to kin – which is at the heart of the passion for place in Irish [Gaelic] life and literature. Parallel with this bonding, of course, was the bonding of each free family group with its own particular inherited land. Down to our own day each field, hill and hillock was named with affection [. . .] There is a sense in which place finally becomes co-extensive in the mind, not only with personal and ancestral memories, but with the whole living community culture. If one’s day to day pattern of living is found good, the feeling of identification with its place of origin is accordingly enhanced. Community becomes place, place community. (p. 23, 28)

Dùthchas, as a dynamic, fluid ontology and praxis, goes beyond a mere “feeling” of identification with place and community to *tangible conduct and action* motivated by a sense of ethics, respect, and responsibility for said place and community to maintain ecological balance. MacIlleathain (2019) underscores that Dùthchas is, “an fhaireachdainn a thaobh a bhith a’

buntainn ri àite, agus an t-uallach a th' ort airson an àite sin (the sense of belonging to a place, and your responsibility for that place)” (emphasis added, para. 4). Oliver (2021) adds,

Dùthchas is that ontological dynamic of embodied experience and emplacement (‘on the ground’), and complex entanglement (‘in the mind’) with relationships of belonging and dwelling, heritage and inheritance, a human ecology with ‘place’ (including, where relevant, land) ... This sense of belonging and responsibility, when conceived of as praxis, as *emplaced ethical relations*, ‘is political, social and cultural imagination in action.’ (n. p.)

Dùthchas, therefore, is not monolithic, static, parochial, nor inward-looking. It is inclusive, fluid, with an eye to the future, sustainable communities, and generations to come (Cox, 2009; Dziadowic, 2022; Gillespie, Telfer & Halhead, 2000).

3.4 Conceptualizing Dùthchas in action

I identify several key characteristics of Dùthchas as a methodological approach for my own self-decolonization process and to conceptualize emplaced ethical research relations with my married family’s Anishinaabeg community. I am informed by my personal lived experiences and worldview as a Gàidheal, by conversations with my Anishinaabe family, and by interdisciplinary literature relating to culture and language reclamation and decolonizing methodologies (e.g., Kovach, 2009; McGregor et al., 2018; MacKinnon, 2017; Smith, 2021).

When I was younger, I used to always doodle and draw in my notebooks. One symbol that I drew and continue to draw frequently is a Gaelic knot (see Figure 3.2), taught to me by a

peer when I was in primary school in Glaschu, Alba. Gaelic knots symbolize interconnectedness and the infinite and cyclical nature of all things, represented by no start nor end point. The key principles, which are non-exhaustive and non-hierarchical, I have identified for my articulation and conceptualization of a Dùthchas methodology are: *interconnectedness*; *responsibility*; *respect*; *ecological balance*; and *kinship*.

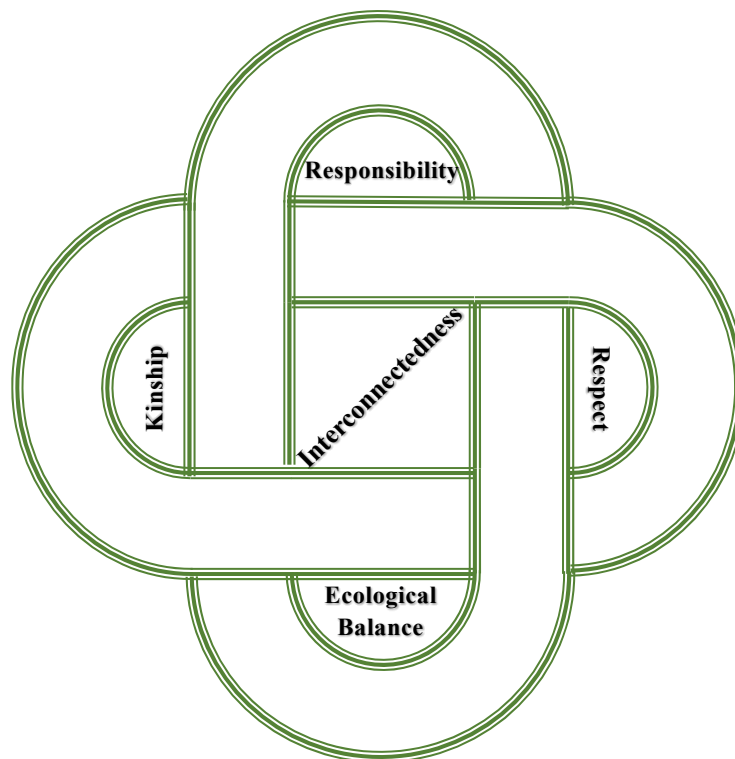


Figure 3.2: Gaelic knot representing Dùthchas methodological principles

3.4.1 Interconnectedness

The first principle of a core *interconnectedness* stresses a dynamism and holism in the research process and beyond. All things are connected in the process, including the researcher. The acknowledgement of researcher subjectivity enables research participants to assess researcher credibility and thus influences the validity of the research and the interpretation of the whole

(Johnston, McGregor, & Restoule, 2018; Smith, 2021). Interconnectedness underscores that no research can be unbiased nor wholly objective and therefore researcher positionality and self-location needs to be explicit, transparent, and clear to all involved (Absolon, 2011; Johnston, McGregor, & Restoule, 2018; Kovach, 2009; Riach, 2020; Riddell et al., 2017).

3.4.2 Responsibility

The second principle of *responsibility* underscores the need for the researcher to take responsibility for the impact of research processes and be accountable to the land, place, relationships, and more than humans encountered at all points during the research (MacIlleathain, 2019; McGregor et al., 2018; Oliver, 2021). This means research is not extractive nor part of a “helicopter approach” (Hall et al., 2015) where researchers arrive in marginalized and Indigenous communities, collect “data”, and rarely ever return. Researchers must be prepared to foster and maintain long-term relationships that build reliability, trust, and confidence with participants and the community (McGregor, 2018).

3.4.3 Respect

The third principle of *respect* mirrors calls for research to be answerable to the communities where the research takes place (McFadyen & Sandilands, 2021; McGregor et al., 2018; Ó Giollagáin & Caimbeul, 2021). This means culturally specific protocols—such as the offering of Asemaa (Tobacco) when seeking knowledge in Anishinaabeg contexts (Wilson & Restoule, 2018)—and local, community, and/or territorial treaties and agreements should be followed, beyond institutional ethics boards, where and whenever applicable (Chiblow, 2021; Lavallée,

2009). Respectful research is led by the community and by the participants who share their knowledge and expertise to ensure all research is mutually beneficial.

3.4.4 Ecological balance

The fourth principle of *ecological balance* highlights the need for all entities—humans and more than humans—to be considered in any research endeavour or project (McFadyen & Sandilands, 2021; Ní Mhathúna, 2021). Land is not a resource, but rather a living entity wherein plants, waters, animals, humans, spirits, and more are interconnected (Bateman, 2009; Kimmerer, 2013; McGregor, 2018). This means more than humans, for example, the land and waters, should not be disregarded in ethics and be acknowledged and respected in the research (McGregor et al, 2018; Chiblow, 2021). Research conducted should not have a harmful environmental impact on the community (McGregor, Whitaker, & Sritharan, 2020).

3.4.5 Kinship | Càirdeas

The fifth principle exemplifies the need for *kinship* that radiates beyond the researcher and human-to-human interactions to the wider community and more than humans (MacKinnon, 2011; Newton, 2009; van Horn, Kimmerer, & Hausdoerffer, 2021; Whyte, 2020). Kinship guides ethical research conduct by strengthening bonds among and responsibilities towards all entities in a given environment and setting (Charles-Edwards, 1993; Cox, 2009; Ó Tuama, 1985; Whyte, 2020). Kinship fosters a deeper understanding of and loyalty towards a common goal to which all participants and researchers on the research journey can feel attached and accountable. In Gàidhlig, kinship (and friendship) can be translated as Càirdeas. Càirdeas stimulates a dynamic

lùth-mothachaidh (sensory energy) which is embodied and encoded in Dùthchas (MacInnes, 2006).

3.5 Dùthchas as research in-relation: The *TEK-nology* pilot project

Dùthchas, as a Gaelic methodology and ontology, is rooted in emplaced ethical relations (Oliver, 2021) and upholds respectful and reciprocal responsibilities to the local community, the land, and kin. As such, Dùthchas as kincentric praxis and research-in-relation means that when you are collaborating with a community that is not your own, you must follow culturally- and community- specific protocols and procedures that are known best by community members themselves. The goal is not to tell the community's stories or enforce a research framework, but rather to empower the community's voice, their knowledge, and their expertise (Lambert, 2014).

As a (re)searcher who is not Indigenous to Turtle Island nor from Ketegaunseebee, I respectfully followed overarching Anishinaabe protocols and methodologies on the *TEK-nology* pilot research project. The pilot project was rooted in an Indigenous Anishinaabe paradigm, Mino-bimaadiziwin (The Good Life) to be responsive and in-relation to the Anishinaabeg community where the research took place. I followed an Anishinaabe community-led, decolonizing, participatory methodological framework, Biskaabiiyang, or "Return to Ourselves" (Geniusz, 2009). The Anishinaabe paradigm helped ensure that the research followed ethical parameters, such as the 6 Rs of Indigenous research: respect, responsibility, relevance, reciprocity, relationship, and refusal (McGregor et al., 2018) and Ownership, Control, Access, and Possession (OCAP) standards (FNIGC, 2014). OCAP standards assert that Indigenous communities maintain control over research and are recognized as knowledge holders.

The *TEK-nology* pilot project (Meighan, 2022) took place over 13 weeks between September-December 2021²⁶ (see Table 3.1 below) during the COVID-19 pandemic²⁷. The *TEK-nology* pilot project is an example of community-based language planning (CBLP; McCarty, 2018). The purpose of the *TEK-nology* research project was to explore relationships between Indigenous language acquisition, place-based knowledge, and digital and online technologies in the Canadian context while supporting community-led language revitalization and cultural reclamation processes. There were several phases to the project: a researcher online reflexive self-examination journal; offering Asemaa (Tobacco) in gratitude; individual semi-structured conversations with participants who later formed a Language Revitalization Committee (LRC); one LRC sharing group and three LRC focus groups; the creation of three 3-minute *TEK-nology* language learning videos; and a final online survey (see Table 3.2 below). Due to COVID-19, research involving participants was conducted remotely using online (Zoom) and digital technologies (laptop, cellphone, and camcorder). Asemaa (Tobacco) should be offered in person when seeking Elder guidance and/or assistance in line with Anishinaabe protocols (Wilson & Restoule, 2010). Due to COVID-19, I offered Asemaa in gratitude to the land on which I was located, Tkaronto (Toronto), before speaking online with participants.

²⁶ This research, File #20-11-048, was approved by McGill Research Ethics Board.

²⁷ All participants signed written consent forms. Their names are used with permission.

Week	Procedure
Week 1	Recruit participants for LRC.
Week 1-2	Semi-structured individual conversation with LRC members.
Week 3	1 st LRC Focus Group: Develop video ideas, themes, content.
Week 4	1 st LRC Sharing Group: Share ideas on strength-based language education.
Week 5	2 nd LRC Focus Group: Decide on video themes, language areas.
Week 6-8	Start <i>TEK-nology</i> video production with participants.
Week 8	3 rd LRC Focus Group: Share draft videos for feedback.
Weeks 9-11	<i>TEK-nology</i> video editing.
Week 12	Finish <i>TEK-nology</i> videos. Invite participants to online video screening.
Week 13	<i>TEK-nology</i> online video screening. Send online survey.

Table 3.1: Research co-creation timeline

Research participants	Procedures
Researcher (N=1)	Ongoing self-decolonization Online autoethnographic self-examination journal <i>TEK-nology</i> video editing
Community members (N=8) > 18 years (N=7) < 18 years (N=1)	<u>Language Revitalization Committee (LRC) (N=7 > 18 years)</u> 1 x Individual semi-structured conversation (45 minutes) 3 x focus groups (1.5 hour each) 1 x sharing group (1.5 hour) <u>TEK-nology videos (N=3 LRC members + N=1 <18 years)</u> 3 x 3-minute language video co-creations
Community members (Same as above; N=8)	1 x 10-question online survey (3 questions on 4-point Likert scale and 7 open-ended questions)

Table 3.2: Research participants and procedures

3.5.1 Ongoing self-decolonization process

Geniusz (2009), in articulating Biskaabiiyang methodology, highlights the need for the researcher to decolonize themselves to conduct meaningful research with the Anishinaabe community. Dùthchas guides and informs my ongoing self-decolonizing processes. Dùthchas fosters a more personal, holistic, and respectful foundation for my researcher “self-in-relation” (Graveline, 1998, p. 52) and enables me to be transparently self-located and positioned prior to embarking on the research process. As Johnston, McGregor, and Restoule (2018) remark, positionality enables the researcher to become “‘knowable’ to research participants, thus disrupting the power dynamics inherent in conventional Western research relationships” (p. 11).

Biskaabiiyang grounds me in community-led, Anishinaabe protocols, values, and ethical practice while Dùthchas guides me for a respectful, interconnected, non-appropriative (self)-decolonizing research journey informed by my own lived experiences. These decolonizing methodologies respond to Wilson's (2001) call to be "answerable to all your relations when you are doing research" (p. 177).

Following Dùthchas, and prior to starting the *TEK-nology* project, I began to learn and reclaim my endangered Indigenous language, Gàidhlig, to connect more with my mother culture and resist colonialism, language oppression, and "ideologies of contempt" (Dorian, 1998; Grillo, 1989) towards Indigenous languages. Prior to COVID-19, I participated in Anishinaabe ceremony in my family's community, and during COVID-19, I took an Anishinaabemowin for Absolute Beginners online course with Elder and Anishinaabek Nation Language Commissioner Barbara Nolan, who later joined the project.

3.5.2 Kincentric and relational approach to reflexive research

Guided by Dùthchas as praxis-oriented, emplaced ethical relations and Biskaabiiyang as decolonizing, participatory methodological framework, I implemented a kincentric and relational approach (Figure 3.3) for participant selection. I selected participants (N=8 in total: one Elder; six adults over the age of 18; and 1 youth under the age of 18) through purposive and snowball sampling (Patton, 2015) from family and family friends from my Anishinaabe family's community in Ketegaunseebee.

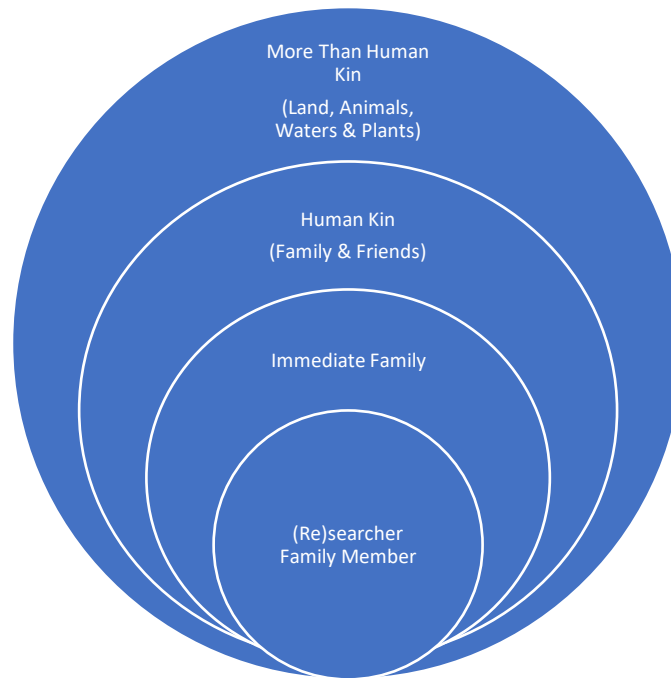


Figure 3.3: Kincentric and relational research approach

This kincentric and relational approach enables me to: (1) acknowledge my own location and subjectivities as a Gàidheal (re)searcher “self-in-relation” (Graveline, 1998); (2) continue deepening and respecting existing relationships with family and friends I know; (3) better understand nuanced factors within those relationships that may have influenced intergenerational language transmission; and (4) consider and respect the dynamic role of the land and community in the research co-creation process as a whole. Wilson and Hughes (2019) explain, “As researchers, we are not separate from the process, but rather participate in relationship with what we are learning” (p. 9). Johnston, McGregor and Restoule (2018) elaborate,

The researcher is nested in concentric circles of relationships. The researcher must consider their relationship with self, with family, with those that provide guidance in carrying out the research, with the research participants, with the broader community,

with the ancestors and future generations, with the environment and land, and with the Creator (p. 11)

I kept a reflexive self-decolonizing/examination journal (Moeke-Pickering et al., 2006) to document my (re)search learning journey. Strega and Brown (2015) state, “reflexivity—a recognition that the researcher is not separate from but exists in relationship with what s/he is trying to understand—is a core component of ethical research practice” (p. 8). I wrote about things such as what decolonization and decolonizing research means to me; challenges and tensions; and my language learning journey in Anishinaabemowin and reclamation journey in Gàidhlig. This journal helps me activate inward knowledge as much as possible (Kovach, 2009). Below is an excerpt from my first online entry about the research project and participant selection:

Today, I'm at the point where I'm about to send out invitations to potential Language Revitalization Committee (LRC) and *TEK-nology* video participants. I'm very mindful that I would like to embark on this project in my married family's community in the most relational way possible, and I think a good way of doing that is by starting with myself and radiating outwards.

Me.

Close immediate family.

Extended family.

Relational human kin (close family friends that I know or who have been recommended to me).

Relational more than human kin (the land).

I'm imagining this working like a concentric circle (insert image when I get to drafting it)
... It is my sincere hope that I can embark on this project in a good way...I'm not from the community where I will be working myself, so I would like to start with people I know, to include people who are close to my immediate relations in the project. I want to centre the people who know the land and their community and the process of reclaiming their language at the heart. They will guide the process...I think the thing I would like most is to be transparent to myself and also to anyone else going forward. And this journal will be helpful (I hope) in tracking that journey and the experiences I have.
(August 16, 2021)

3.5.3 Strengthening Anishinaabe Bwaajwewin and Càirdeas during knowledge co-creation

I practiced Miigwetchiwin (prayer and gratitude; Reo, 2019) before, during, and after the research process and sought to foster Anishinaabe Bwaajwewin (nurturing relationship) interactions (Reo, 2019) and Càirdeas (kinship and friendship) when consulting participants and Elders. Together, we, the community participants and I, formed the LRC. I conducted individual semi-structured conversations with LRC members, using the Conversational Method (Kovach, 2010) which gathers knowledge in relational dialogue with the “deep purpose of sharing story” (p. 40). I sought to Bizindam (Listen) to participants to learn and “hear, not react” (Chiblow, 2021). We had three LRC focus groups to generate ideas, themes, and content for videos. We discussed relationships between Anishinaabemowin, the land, and technology. In our sharing group, we shared what language education means and is for the community. After this, we co-created three 3-minute conversational *TEK-nology* ILA videos (see Figure 3.4). The videos were

filmed by LRC members themselves in Ketegaunseebee and are now hosted on a public LRC YouTube channel (<https://www.youtube.com/playlist?list=PL-uUUEW1KLSu-1SKs-Ixd8MQGnLGa88wP>) in accordance with participant wishes. At the end of the project, the videos were shown to participants at a *TEK-nology* video screening on Zoom. I invited participants to respond to an online survey for feedback on the pilot project and the co-creation process.



Figure 3.4: Screenshots of *TEK-nology* videos

3.5.4 Bizindam and Dùthchas to inform meaning-making during analysis

To interpret and analyze the knowledge —both “internal” as part of my own reflections and “external” (Kovach, 2009)—generated during the project, I employed qualitative Anishinaabek data analysis (Chiblow, 2021) alongside reflexive thematic analysis (RTA) (Braun & Clarke, 2021). Qualitative Anishinaabek analysis involves several phases for coding: Bizindaage (I listen

to someone); Ozhibii'igi (I wrote things down); Naanaagadawendam (I consider, notice, reflect); Nisidotaagwad (it is understood) (Chiblow, 2021). RTA is a flexible method that “emphasises the importance of the researcher’s subjectivity as analytic resource, and their reflexive engagement with theory, data and interpretation” (Braun & Clarke, 2021, p. 330). RTA also acknowledges diverse guiding theories and paradigms (Braun & Clarke, 2021), such as the Indigenous Anishinaabe paradigm and Dùthchas principles. RTA involves data familiarization; systematic data coding; generating initial themes from coded and collated data; developing and reviewing themes; refining, defining, and naming themes; and writing the report (Braun & Clarke, 2021).

Codes and themes were not decided in advance or deductively, and I reflected upon and understood the knowledge shared with me in a process of “meaning-making” (Archibald, 2019). This meaning-making process, for me as a Gàidheal, was informed by the five principles I identified in Dùthchas: *interconnectedness; responsibility; respect; ecological balance; and kinship*. I sought to respectfully and responsibly Bizindam (Listen) to the interconnectedness in the participants’ stories and maintain balance by heeding our Càirdeas (kinship and friendship). First, I transcribed 11 hours of conversations and sharing/focus groups manually (Bizindaage alongside data familiarization). Then, I coded transcripts line-by-line highlighting words/phrases (Ozhibii'igi alongside theme generation). Next, I reflected on relationships among preliminary codes to identify salient and/or recurrent initial themes I felt could shed light on the research questions (Naanaagadawendam alongside developing themes). I then reviewed the codes and themes for consistency and named them using participants’ words as much as possible (Nisidotaagwad). Inductive RTA worked alongside Anishinaabek analysis as part of the greater Indigenous theoretical framework and paradigm to ensure validity and accountability to both

Indigenous and non-Indigenous (academic) communities. Dùthchas informed my interpretation and meaning-making process as a Gàidheal researcher. This approach to the coding and analysis “is not calling for an integration of ... knowledge systems but rather recognizes there are multiple ways of gathering knowledge” (Chiblow, 2021, p. 7).

3.6 Conclusion: Implications and Future Directions

In this paper, I introduced Dùthchas as a qualitative and kincentric methodology for a personal self-decolonization process and to conceptualize and conduct emplaced ethical research relations with my family’s Indigenous Anishinaabe community. Dùthchas has implications for future research.

Dùthchas seeks to maintain interconnected and dynamic kin- and place- based ethical relations(hips) that safeguard the well-being and future vitality of the local community and the land. Guided by Dùthchas as praxis-oriented, emplaced ethical relations and Biskaabiiyang as decolonizing, participatory methodological framework, I implemented a kincentric and relational approach to community-led research. This kincentric and relational approach consolidated an ethical relationship and responsibility to the qualitative research co-creation process, the participants, the interpretation, and the analysis. I identified key non-exhaustive and context-dependent principles in Dùthchas: *interconnectedness; responsibility; respect; ecological balance; and kinship*. Giving the example of the TEK-nology pilot research project, I further illustrated four stages of Dùthchas as kincentric praxis and research in-relation: (1) an ongoing self-decolonization process; (2) a kincentric and relational approach to reflexive research; (3) strengthening Anishinaabe Bwaajwewin (nurturing relationships) and Càirdeas (kinship) during

knowledge co-creation; and (4) Bizindam (listening) and Dùthchas to guide meaning-making during analysis.

Dùthchas as kincentric methodology and praxis can inform more methodological approaches that seek to embody emplaced ethical relations and conduct future qualitative community-led research. Dùthchas illustrates how researchers—either new or already indoctrinated in extractive, Eurocentric research methods—and those who work with Indigenous peoples can begin a process of self-decolonization to collaborate with an Indigenous community. Dùthchas is a Gaelic ontological and methodological approach to co-existing dynamically and conducting research in-relation to the lands on which you are located. As a Gàidheal, my personal self-decolonizing journey is guided by the Dùthchas principles I identified. Dùthchas informed and informs my conduct. An important and significant limitation is that the Dùthchas principles and stages are culturally- and context- specific to me as a Gàidheal with my own lived experiences, and it is not intended that these principles are to be simply “copy-pasted” into future methodological approaches without researcher critical reflection, self-location, and ongoing self-decolonization. However, researchers might draw inspiration from Dùthchas as kincentric methodology to ask oneself:

- (1) What do my own self-decolonizing processes entail?
- (2) What does kinship and responsibility towards participants and the land in my research mean for me?
- (3) How do I build my own responsibilities, kinship, and loyalty with the communities and lands where I work?
- (4) What is my methodology for emplaced ethical relations in action?

Dùthchas seeks to inform ways in which we can foster, improve, and uphold emplaced ethical Indigenous—non-Indigenous to Turtle Island (research) relations (Truth & Reconciliation Commission, 2015). Dùthchas exemplifies how researchers can locate and articulate their own assumptions, beliefs, and intersections with colonialism to be respectfully in-relation with the Indigenous communities and peoples involved with the research. If researchers self-locate and are transparent about their own positionalities, intentions, knowledge and belief systems, they are less likely to appropriate, extract, and to be trusted by community members (McGregor, Restoule, & Johnston, 2018). As the Truth and Reconciliation Commission of Canada (2015) states, “reconciliation is about establishing and maintaining mutually respectful relationships between Aboriginal and non-Aboriginal peoples in this country” (p. 6). Informed by Dùthchas, I demonstrate how I followed culturally specific protocols and an overarching Anishinaabe research methodology, Biskaabiiyang, to ensure I am in respectful relation to the land and accountable to the community with whom I work (relational accountability; Wilson, 2001).

An important closing note for researchers who take inspiration from Dùthchas as kincentric methodology is that these relational processes must always be context- and culturally-specific. For example, if I were working with a different Indigenous community or Nation, one of the many hundreds across Turtle Island (Government of Canada, 2021) or across the globe, I would follow their own protocols and methodologies to foster emplaced ethical relations and heed Càirdeas. Respecting and being accountable to relationships with my ancestors, family, kin, more than kin, future generations, and the land is core to Dùthchas and the TEK-nology approach.

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Preface to Chapter 4

In Chapters 2 and 3, I considered the role of technology and the role of the researcher respectively. In Chapter 4, I will now explore the potential and the impact of the immersive, community-led Indigenous language acquisition approach, *TEK-nology* (Traditional Ecological Knowledge (TEK) and technology) with participants from my married family's Anishinaabe community.

The purpose of the *TEK-nology* project is to explore relationships between community-led Indigenous language acquisition, place-based knowledges, and technology in the Canadian context while responding to policy calls for technology to be culturally appropriate and rooted in Indigenous worldviews (Government of Canada, 2018; Truth and Reconciliation Commission of Canada, 2015). The goal is to support community-led language revitalization and cultural reclamation processes.

In Chapter 4, I elaborate on the research context, on the research co-creation process as part of a pilot project steered by a community-led language revitalization committee, and on the *TEK-nology* approach as *praxis*. As I identified in Chapter 2, more research needs to be carried out by or with Indigenous Peoples on how Indigenous Peoples view and use technology, what purpose technology serves or has served, and whether or not technology can support day-to-day language usage and promotion of cultural identity. The research questions in this chapter ask how technology rooted in Indigenous worldviews can support community-based language revitalization and reclamation; how culturally appropriate technology-enabled pedagogies can be developed; and what the implications of the *TEK-nology* approach are for language learning, educational practice, and policy.

In Chapter 4, the *TEK-nology* pilot project participants illustrate how technology can be culturally engaging (Pitawanakwat, 2018), relevant, and integrated in an accessible, current, and user-friendly way that enables language acquisition beyond isolated words or decontextualized phrases (Galla, 2009). The aim of many community-based or -led Indigenous language revitalization initiatives is to promote Indigenous language usage in domains such as the home and everyday social contexts (Hinton, 2003, 2013; Pitawanakwat, 2018). In this chapter, I exemplify how *relational* technology—technology that is responsive and accountable to the Indigenous community at all stages—can support self-determined and community-led language revitalization and reclamation processes. I argue technology use that is responsive to the *specific contexts and ecologies of the local Indigenous community* can foster more ethical relationships and “relational language technologies” (Taylor et al., 2019, p. 3511) going forward.

The research co-creation process, analysis, and discussion in Chapter 4 demonstrate how community-led, relational technology and immersive Indigenous language acquisition can support Anishinaabemowin language reclamation and revitalization and foster more equitable multicultural and multilingual education practice and policy. I identify (1) the impacts of centering Indigenous worldviews in technology, language learning, and teaching; (2) how we can develop and co-create technology-enabled, culturally, emotionally, and environmentally responsive pedagogies; and (3) the important implications of decolonizing language education for Indigenous and majority languages. I highlight that technology can indeed be mediated, “create new forms of political dialogue and participation” (Silverstone, 2005, p. 13), and be an extension of Indigenous knowledge systems and languages, such as Anishinaabemowin.

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as printed, except for references to figures or tables introduced in earlier chapters of this thesis,
and follows journal style.

Chapter 4: Indigenous language revitalization using *TEK-nology*: How can Traditional Ecological Knowledge (TEK) and technology support intergenerational language transmission?

Abstract

Indigenous communities worldwide face threats to their linguistic and epistemic heritage with the unabated spread of dominant colonial languages and global monocultures, such as English and the neoliberal, imperialistic worldview. There is considerable strain on the relatively few Elders and speakers of Indigenous languages to maintain cultures and languages decimated by centuries of colonialism. One shared and common goal for Indigenous language revitalization initiatives is to reinvigorate intergenerational language transmission in the home, the community, and beyond in as many ways as possible. How can technology support this nuanced process and existing initiatives? Following an Indigenous research paradigm, this article explores an immersive, community-led Indigenous language acquisition approach—*TEK-nology* (Traditional Ecological Knowledge (TEK) and technology)—to support Anishinaabemowin language revitalization and reclamation (ALRR) in the Canadian context. The *TEK-nology* pilot project identifies: (1) the impacts of centering Indigenous worldviews in technology, language learning, and teaching; (2) how we can develop and co-create technology-enabled, culturally and environmentally responsive pedagogies; and (3) the important implications of decolonizing language education for Indigenous and majority languages. The *TEK-nology* pilot project demonstrates how community-led, relational technology and immersive Indigenous language acquisition can support ALRR and foster more equitable multicultural and multilingual education practice and policy.

Keywords

Relational technology, Indigenous language acquisition, Anishinaabemowin, language reclamation, language policy, decolonizing language education

4.1 Introduction

Due to colonialism and imperialism, Indigenous languages, cultures, and peoples have been subjected to genocide, governmental policies entrenched in linguistic imperialism, epistemological and cognitive supremacy, and continued practices of linguicide and historicide (Battiste, 2013; Philipson, 1992; Skutnabb-Kangas, 2000; Skutnabb-Kangas & Dunbar, 2010; Truth and Reconciliation Commission, 2015). Studies estimate one language is “lost” every 1-3 months (Bronham, 2022). The United Nations Permanent Forum on Indigenous Issues (2018) remarks:

The threat is the direct consequence of colonialism and colonial practices that resulted in the decimation of Indigenous peoples, their cultures and languages. Through policies of assimilation, dispossession of lands, discriminatory laws and actions, Indigenous languages in all regions face the threat of extinction. (para 1-4)

There is considerable strain on the relatively few Elders and speakers of Indigenous languages to maintain cultures and languages decimated by centuries of colonialism. Resources, such as funding, are often severely limited and unnecessarily difficult to access (Pitawanakwat, 2018). Capitalistic digital and online technologies may further appropriate Indigenous knowledges and compromise Indigenous Data Sovereignty (Kukutai & Taylor, 2016). Materials

which follow external accreditation standards or western pedagogies may not meet the needs of local Indigenous communities (Hammine, 2020; McIvor, 2020; Sarkar, 2017). Attempts to teach Indigenous languages through mainstream western schools and colonial teaching methods alone, such as the use of decontextualized grammar exercises and standardized assessments, have not brought about an overall growth in speakers, true reconciliation to address Indigenous language rights, or reclamation of Indigenous identity (Hermes et al., 2012; Statistics Canada, 2019).

One shared and common goal for Indigenous language revitalization (ILR) initiatives is to promote intergenerational language transmission in the home, the community, and beyond (Hinton, 2013; Leonard, 2017). This article proposes and explores the potential of an immersive, community-led Indigenous Language Acquisition (ILA) approach—*TEK-nology* (Traditional Ecological Knowledge (TEK) and technology)—to support Anishinaabemowin Language Revitalization and Reclamation (ALRR). Language revitalization and reclamation are key to revitalize language transmission and reclaim cultures and knowledge systems threatened by colonization (Leonard, 2011). ILA is different from Second Language Acquisition (SLA) in that the “teaching and learning of endangered [Indigenous] languages comprise features and needs that are different from the teaching and learning of majority or foreign languages” (Hammine, 2020, p. 304).

The purpose of the *TEK-nology* research project is to explore relationships between ILA, place-based knowledge, and digital and online technologies in the Canadian context while responding to policy calls for technology to be culturally appropriate and rooted in Indigenous worldviews (Government of Canada, 2018; Truth and Reconciliation Commission, 2015). The *TEK-nology* project is collectively led by community participants and the researcher. The goal is to support community-led language revitalization and cultural reclamation processes.

4.2 Literature Review

Indigenous communities worldwide face threats to their linguistic and epistemic heritage with the unabated spread of dominant colonial languages and global monocultures, such as English and the neoliberal, imperialistic worldview (Battiste, 2013; Heugh, 2009, 2016; Kalan, 2016; Mohanty, 2019; Olthuis et al., 2013; Phyak, 2021; Phillipson, 1992; Skutnabb-Kangas, 2000). Two-thirds of the world's 7000-7500 languages are Indigenous languages; one-third of those are experiencing language loss (Lewis & Simon, 2016), and "as many as 90% are predicted to fall silent by the end of the century" (McCarty, 2018, p. 23). These threats are a direct consequence of colonialism and colonial practices (United Nations Permanent Forum on Indigenous Issues, 2018). The dominant use of the English language carries a colonial, assimilative legacy and a Eurocentric, human-centred worldview characterized by: (1) linguistic imperialism (Phillipson, 1992) and cognitive imperialism (Battiste, 2013); (2) the view that humans are superior to nature (or "human exceptionalism" [Haraway, 2008]); and (3) white (epistemological) supremacy (Minde, 2003).

English speakers, in particular decision-making elites, who enact this worldview of linguistic, cultural, and cognitive superiority have, either wittingly or unwittingly, subjugated Indigenous, non-dominant cultures and languages and legitimized the destruction of ecosystems (Chiblow & Meighan, 2021; Tom et al., 2019; Van Lier, 2004). In Canada, linguistic and cultural heritage has been compromised either through overt force and genocide, as in residential schools (Nicholas, 2009; Truth & Reconciliation Commission, 2015), or in more covert forms, such as present-day monocultural, English-only school environments (Skutnabb-Kangas et al., 2009). Some ILR initiatives have been influenced by colonial ideologies and pedagogies, such as

teacher-led decontextualized rote drilling, grammar exercises in a fixed-row classroom setting, or ethnocentric comprehension activities that uphold the western canon of print literacy. Some Indigenous peoples can view these colonial teaching practices, Eurocentric language learning materials and curricula, and the emphasis on test scores and classroom-based academic “success” as synonymous with further attempts at assimilation into the hegemonic western, colonial worldview (Battiste, 2013; Hermes, 2005).

Attempts to teach Indigenous languages through mainstream western schools and pedagogies alone have not brought about a growth in speakers, true reconciliation to address Indigenous language rights, or reclamation of Indigenous identity (Hermes, Bang & Marin, 2012; Hermes, 2005). Colonial government and education policy has had an overwhelmingly detrimental impact on Indigenous peoples’ socioeconomic status, health, and wellbeing, in forms such as mental illness, suicide rates, disproportionately high school drop-out rates, and racism (Kirmayer, Sheiner & Geoffroy, 2016; Statistics Canada, 2019). There is a continuing decline in the number of Indigenous language speakers in North America (Hermes, Bang & Marin, 2012; Hermes, 2005; Littlebear, 2007; Pitawanakwat, 2018; Statistics Canada, 2019). According to the latest figures in the 2016 Canada census, “only 20% of First Nations people could converse in an Indigenous language, down almost 6 percentage points from 2006” (Assembly of First Nations, 2019).

With the encroachment of settler colonial societies, one of the contributing factors to the decline in Indigenous language speakers resides in the disconnect, or “ontological schisms and disjunctures” (Nightingale et al., 2020; Veland et al., 2018) between western and Indigenous education (McIvor & McCarty, 2017). Dominant, non-endangered colonial languages, such as English, can be decontextualized, disembodied from the wider environment, and commodified in

the classroom to meet the needs of capitalism, transactional exchanges, and neoliberal economic growth (Mohanty & Skutnabb Kangas, 2013). From a neoliberal and colonial perspective, the English language is viewed as a decontextualized communicative “code” or product that can bring about economic profit to easily meet the transactional demands of capitalist work (Meighan, 2021a; Shin & Park, 2016). In the English as a foreign/second language classroom, for instance, as Modiano (2001) puts it, “the learner’s mind is colonized through the acquisition of a foreign tongue” (p. 164) and is subjected to “epistemological racisms” (Kubota, 2020).

On the other hand, Indigenous languages, knowledges, cultures, and the land are together regarded as an integrated, inseparable whole (Chiblow & Meighan, 2021; McGregor, 2004; McGregor et al., 2018). The relational connection of language and place “is not a primary language objective in many English and world language classrooms” (Engman & Hermes, 2021, p. 104). Indigenous languages are fundamental to Indigenous peoples in that they not only transmit highly specialized place-based knowledges, such as TEK and unique medicinal knowledge (Absolon, 2011; Cámara-Leret & Bascompte, 2021; Geniusz, 2009), they also support the transmission of culturally specific teachings and ecocentric worldviews to future inheritors and practitioners (Johnston, 2011). Studies in the natural and social sciences have underscored the inseparability of Indigenous languages from the wider sociocultural, biological, and ecological context, in that a minimal proficiency, or conversational knowledge of an Indigenous language can save Indigenous lives, raise community capacity, and foster deep social, emotional, and spiritual wellbeing (Hallett et al., 2007; Kirmayer, Sheiner & Geoffroy, 2016). Youth suicide rates effectively drop to zero with conversational knowledge of an Indigenous language (Hallett et al., 2007).

Other non-exhaustive key contributing factors to Indigenous language speaker decline include: (1) the need for a community-led (pedagogical) approach which addresses specific sociocultural, linguistic, and emotional needs (Hough et al., 2009; Olthuis et al., 2013; Skutnabb-Kangas & Heugh, 2012); (2) the lack of resources, as many ILR programs/initiatives have to create materials from scratch (McIvor, 2020), are vastly underfunded (Pitawanakat, 2018), and the few fluent speakers involved with them are over 60 years of age (Littlebear, 2007); (3) trauma barriers to ILA, or “historic trauma transmission” (Wesley-Esquimaux & Smolewski, 2004), since reclaiming a language taken through genocide and linguicide can be a traumatic and complex process; and (4) the importance of immersion in the Indigenous language and ecocentric/kincentric worldview (Stacey, 2016), where culture, language, and teachings can be learned on the land and holistically.

The contributing factors to Indigenous language speaker decline, both inside and outside the school context, stress the need for a community-specific, accessible, emotionally-, environmentally-, and culturally- responsive ILA approach to address colonial imbalances and injustices (Sherris & Penfield, 2019). One shared and common goal for ILR initiatives is to reinvigorate intergenerational language transmission in the home, the community, and beyond in as many ways possible (Hinton, 2013; Leonard, 2017; Littlebear, 2007; Olthuis et al., 2021; Olthuis & Gerstenberger, 2019). How could technology support this nuanced process and existing initiatives? To explore the potential of a technology-enabled ILA approach, I introduce an immersive, community-led *TEK-nology* pilot project for ALRR. The article will address three research questions.

- 1.) (How) can technology rooted in Indigenous worldviews and knowledge systems support community-based language revitalization and cultural reclamation?
- 2.) How can we co-create a culturally, emotionally, and environmentally responsive Indigenous language acquisition pedagogy with *TEK-nology*?
- 3.) How do community learners and Elders demonstrate engagement and learning with *TEK-nology*, and what are the implications for decolonizing language education?

4.3 Methodology

4.3.1 Positionality and research context

Is mise Pòl Miadhachàin-Chiblow. 'S e Gàidheal a th' annam. Rugadh agus thogadh mi ann an Glaschu, Alba. My name is Paul Meighan-Chiblow. I'm a Scottish Gael. I was born and raised in Glasgow, Scotland.

My research focuses on Indigenous language revitalization and language education policy. My experiences as a Gàidheal (Scottish Gael) growing up in Glaschu (Glasgow) inform my work. I was raised by my mother who is from Dalabrog (Daliburgh), in the north-western island of Uibhist a Deas (South Uist) in na h-Eileanan Siar (Western Isles). I remember hearing Gàidhlig (Scottish Gaelic) all the time around my fluent speaking grandmother, who was a core of our family. However, Gàidhlig, an endangered Indigenous language in Alba (Scotland), was not available to me in the educational system. Members of my family and older generations recall being beaten for speaking it in school, and Gàidhlig, spoken for more than 1500 years in Alba, is still not recognized as an official language in the United Kingdom.

My motivation for equitable education and language revitalization has continued to grow after meeting my Anishinaabe Ojibwe husband in Glaschu. I have learned more about the

devastating impacts of colonialism on the Indigenous Peoples of Turtle Island from him and from discussions with my Anishinaabe family. These experiences have led to my current research on the role of technology for endangered and Indigenous languages. My research explores the *TEK-nology* approach with participants from my Anishinaabe family's community in Ketegaunseebee (Garden River First Nation) in the Great Lakes Region of Turtle Island (North and Central America) (refer to Figure 1.1). As a (re)searcher who is not Indigenous to Turtle Island nor from Ketegaunseebee, I respectfully follow Anishinaabe protocols and methodologies on this project.

4.3.2 Research framework and methods

The *TEK-nology* pilot project and research co-creation was rooted in an overarching Indigenous Anishinaabe paradigm, Mino-bimaadiziwin (The Good Life), appropriate for and responsive to my Anishinaabe family's community in Ketegaunseebee (Garden River First Nation) where the project took place. I followed an Anishinaabe community-led, decolonizing, participatory methodological framework, Biskaabiiyang, or "Return to Ourselves" (Geniusz, 2009).

Biskaabiiyang starts with the researcher decolonizing themselves to conduct meaningful research with the Indigenous community (Geniusz, 2009). Biskaabiiyang includes Bizindam (listening) to participants to learn and "hear, not react" (Chiblow, 2021).

The *TEK-nology* pilot project²⁸ took place over 13 weeks between September-December 2021 during the COVID-19 pandemic and entailed several phases: an online autoethnographic self-examination journal; offering Asemaa (Tobacco) in gratitude; individual semi-structured conversations with participants (N=7) who later formed a Language Revitalization Committee

²⁸ This research, File #20-11-048, was approved by McGill University Research Ethics Board.

(LRC); one LRC sharing group and three LRC focus groups; the creation of three 3-minute *TEK-nology* language learning videos; and a final online survey (refer to Table 3.2). Given COVID-19 restrictions and precautions, each research co-creation phase was conducted remotely using online (Zoom) and digital technologies (laptop, cellphone, and camcorder). Asemaa should be offered in person when seeking Elder guidance and/or assistance in line with Anishinaabe protocols (Wilson & Restoule, 2010). Due to COVID-19 and not being able to do this in person, I offered Asemaa in gratitude to the land on which I was located, Tkaronto (Toronto), before speaking with participants.

As a methodology for my ongoing self-decolonization process, I followed *Dùthchas* (which I loosely translate as Ancestral Bonds). *Dùthchas* is an intrinsic part of the *sealladh a' Ghàidheil* (Gaelic worldview) and is derived from the Gàidhlig word “*dú / dùth*”, meaning “earth” or “land” (MacKinnon & Brennan, 2012). *Dùthchas*, as a Scottish Gaelic ontology and methodology, stresses the interconnectedness of people, land, culture, and an ecological balance among all entities, human and more than human. Following *Dùthchas*, and prior to starting the *TEK-nology* project, I began to learn and reclaim my endangered Indigenous language, Gàidhlig, to connect more with my mother culture and resist colonialism and language oppression. Prior to COVID-19, I participated in Anishinaabe ceremony in my family’s community, and during COVID-19, I took an Anishinaabemowin for Absolute Beginners online course with Elder and Anishinaabek Nation Language Commissioner Barbara Nolan, who later joined the project. Biskaabiiyang helped ground me in community-led, Anishinaabe protocols, values, and ethical practice while *Dùthchas* helped guide me for a respectful and non-appropriative (self)-decolonizing research journey informed by my own lived experiences. These decolonizing

methodologies respond to Wilson’s (2001) call to be “answerable to all your relations when you are doing research” (p. 177).

Participants (N=8 in total: one Elder; six adults over the age of 18; and 1 youth under the age of 18) were selected through purposive and snowball sampling (Patton, 2015) from family and family friends who I knew personally or who were recommended from within my Anishinaabe family’s community in Ketegaunseebee²⁹. Informed by Biskaabiyaang and Dùthchas, I implemented a kincentric and relational approach (refer to Figure 3.3) for participant selection to (1) continue deepening and respecting existing relationships; and (2) understand factors within those relationships that may have influenced intergenerational ALRR. Together, we, the community participants and I, formed the LRC. I conducted individual semi-structured conversations with LRC members, using the Conversational Method (Kovach, 2010) which gathers knowledge in relational dialogue with the “deep purpose of sharing story” (p. 40). We had three LRC focus groups to generate ideas, themes, and content for videos. We discussed relationships between Anishinaabemowin, the land, and technology. In our sharing group, we shared what healing and strength-based education is for the community. After this, we co-created three 3-minute conversational *TEK-nology* ILA videos (see Figure 4.1). The videos were filmed by LRC members themselves in Ketegaunseebee and are now hosted on a public LRC YouTube channel (<https://www.youtube.com/playlist?list=PL-uUUEWIKLsu-1SKs-Ixd8MQGnLGa88wP>) in accordance with participant wishes. At the end of the project, the videos were shown to participants at a *TEK-nology* video screening on Zoom. Participants were invited to respond to an online survey for feedback on the pilot project and the co-creation process.

²⁹ All participants signed consent forms. Their names are used with permission.

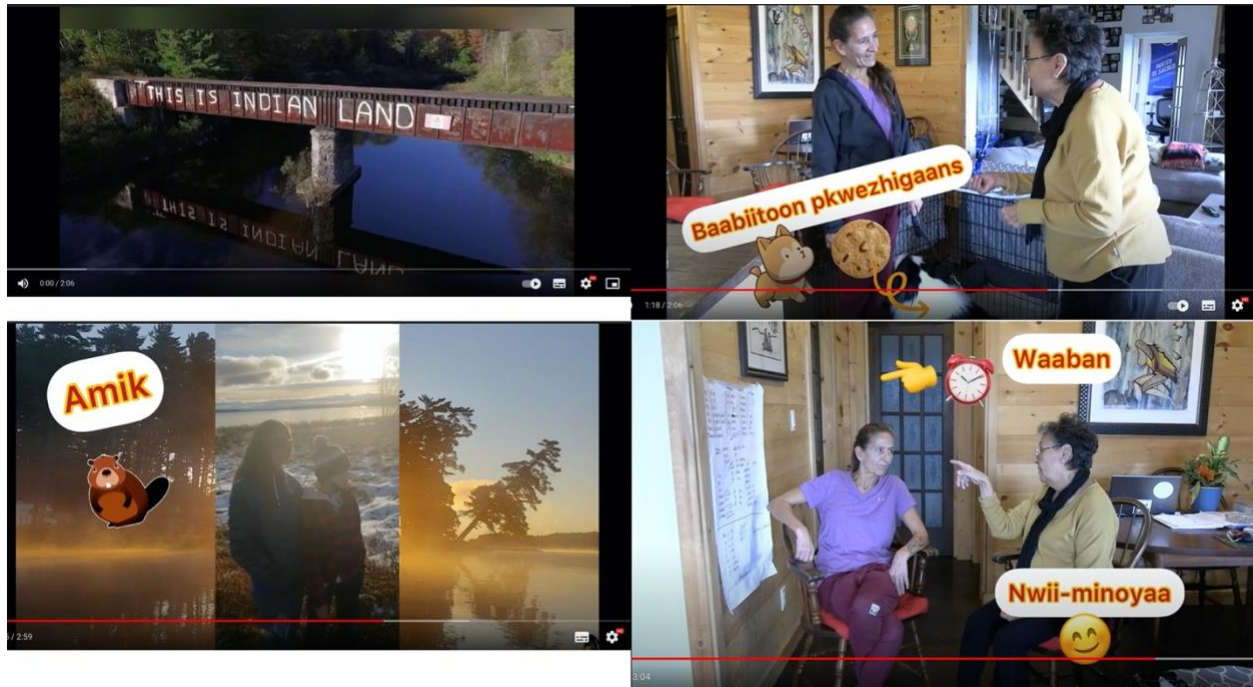


Figure 4.1: TEK-nology Indigenous language acquisition video screenshots

To interpret and analyze the knowledge generated during the project, I employed qualitative Anishinaabek data analysis (Chiblow, 2021), alongside reflexive thematic analysis (Braun & Clarke, 2021). Codes and themes were not decided in advance or deductively, and I reflected upon and understood the knowledge shared with me in a process of “meaning-making” (Archibald, 2019). This approach to the coding and analysis “is not calling for an integration of two knowledge systems but rather recognizes there are multiple ways of gathering knowledge” (Chiblow, 2021, p. 7).

4.4. Analysis

I identified three main themes during analysis: (1) *Relational technology*: “Technology helps me reach more people”; (2) *Language animacy and ecology*: “Language comes from the land”; and (3) *Cultural and linguistic resurgence*: “You get a piece of yourself back”. I report the

knowledge participants shared to maintain the integrity of their stories. As Wilson, Breen, and Dupre (2019) remark, Indigenous “knowledge can’t be ‘discovered’ or ‘owned’ but instead it reveals itself, is experienced, is shared... The alive and agentive quality of Knowledge is evident in the central place of Stories” (p. 9).

4.4.1 “Technology helps me reach more people”: Relational technology

All participants agreed that technology can be a helpful tool and can support community-led ALRR. In the anonymized online survey at the end of the project, 5 out of 6 respondents strongly agreed that the videos could help community members and viewers learn new words or phrases in Anishinaabemowin.

Some participants stressed that technology’s role and utility can vary, depending on the learning or teaching approach/method, knowledge shared, and purpose. Joseph Belleau, Indigenous education teacher and family friend, highlighted this,

PM: Do you think technology could support Anishinaabemowin language reclamation and revitalization?

JB: I feel it's almost like it could be yes and no...I feel, for someone like myself, it would be very beneficial to have access to Anishinaabemowin as a resource...However, other people believe that knowledge isn't supposed to be shared that way; it's supposed to be passed down. And there's two sides to every coin, right? I myself would love to have it accessible at my fingertips, not needing to go out to do different things, but then other people believe that, *if it's from a knowledge keeper and it's from traditions, some people*

believe that it should just be kept within that community. (Individual conversation, 6/9/21)

Jayce Chiblow, Toolkit Training Lead for Indigenous Climate Action and the researcher's sister-in-law, underscored the importance of relational accountability (Wilson & Wilson, 2018) and relationship building in technology's implementation,

The technology would really fall on the person, the individual, to make sure that they're building those *in-person connections*. So, I definitely think it's a useful tool, but it's not going to be the solution kind of thing, but a helpful resource for folks to use to continue to learn the language. (Individual conversation, 3/9/21)

In our LRC, we discussed and agreed where the *TEK-nology* videos should be kept (public YouTube); what knowledge or content is shared (natural, everyday conversations); and which teaching and learning approach (language immersion) would be implemented. Dr. Susan Bell Chiblow, Assistant Professor in Indigenous Environmental Stewardship at the University of Guelph and Jayce Chiblow's mother, spoke about the importance of technology being rooted in the Anishinaabeg worldview and conversational Anishinaabemowin as a learning objective:

Some people have shared songs on YouTube in Anishinaabemowin. There's also some apps that help you with the language, but most of those apps I found are just words. It's not conversational. We also have online dictionaries and, again, those aren't really conversational. Those are just words. So, it's almost like *you're trying to understand from*

an English perspective what a word means, and it does not mean that. From what I've been told, when you say an Anishinaabemowin word, it's descriptive, it's an action. It's not just a singular English word, so translation is complicated. So, I think that conversational Anishinaabemowin could be used, it could be part of technology.

(Individual conversation, 3/9/21)

Elder Barbara Nolan, who has decades of experience teaching and designing curricula for Anishinaabemowin language courses, stressed how technology could be important, useful, and how it can support ILA and ALRR:

You can do a lot with technology, and so, if you do these teaching videos, you're not teaching words, you're teaching concepts... And as long as the students get the message, you don't have to know the words, *you just have to get the message first*...Nothing will take away from the real thing, but we can't, like real, like have classes...I can't be in ten places all at once. *So, technology helps me reach more people*...I should have recorded all my lessons, which I didn't do, and so they're gone. Those stories are gone, the ones I had told. But I think, now that I know that, I better start recording. That way, I have a collection of lessons that were actually done by me online, and then I would leave the recordings with somebody, and then they would be able to use them. You know, then, *language lives on, beyond me.* (Individual conversation, 8/9/21)

To co-create the *TEK-nology* videos, we sought to incorporate the immersive, concept-based ILA approach Elder Barbara highlighted above. During the LRC focus groups, we decided

that the videos should be short and done in a natural, fun, engaging, conversational manner to engage learners of all ages and learning styles. In the online survey, in response to Question 3 “Can you give an example of how the videos engaged you?”, 3 out of 6 participants commented that the emoji stickers in the *TEK-nology* videos (see Figure 4.2) helped transmit concepts and could engage younger learners:

“They were funny so immediately captured my attention. They were short so easy to watch. I liked the emoji and the words coming through on the screen. I like the intro song and ending - made me want to dance.” (Online survey, 19/12/21)

“The use of emoji stickers to engage younger learners with the meaning of what is being said in the language.” (Online survey, 31/1/22)

“The use of the speech bubbles with Anishinaabemowin so I could read it at the same time. The emojis to help convey the discussion.” (Online survey, 20/12/21)



Figure 4.2: Screenshot of TEK-nology video with emojis to convey concept and message

4.4.2 “Language comes from the land”: Language animacy and ecology

All participants exemplified how the land, the Anishinaabeg worldview, and Anishinaabemowin are in relation. Storytelling and humour were identified as key ways in which Indigenous languages and knowledges are learned and retained. Joseph Belleau highlighted, “in Anishinaabemowin a lot of our stories, I feel like it's all based around our natural environment and stories about water, about the land, about Turtle Island” (Individual conversation, 6/8/21). Karen Bell, Garden River First Nation Band Councilor for the Educational Programs portfolio, who was taught Anishinaabemowin by Elder Barbara Nolan in elementary school in the 1970s, commented on Elder Barbara’s immersive pedagogical approach to ILA and storytelling:

I've watched Barb Nolan. She goes in, and the whole time she's there, *she speaks nothing but the language*, and those kids now are really paying attention because she's saying a language that they didn't ever hear before. But now that she's been there for a lengthy period of time...*they will answer to her in the language, too...*

Indigenous people have always traditionally learned by storytelling, that's one of the key ways on which children are going to end up retaining the language, and in laughter.

Because I know when she does a lot of her teaching, she does it in a happy place and a happy setting. She smiles a lot. She laughs a lot, the kids laugh. (Individual conversation, 7/9/21)

All participants agreed that the *Anishinaabemowin language is not just words*, and that the language is much more experiential. Participants gave examples of how important land-based learning is, especially when acquiring Anishinaabemowin. Dr. Bell-Chiblow shared, "I've heard Elders say that language comes from the land and that, therefore, it's kind of place-specific" (Individual conversation, 3/9/21). Several participants in our individual conversations shared how Anishinaabemowin, and the learning and acquisition process, is both embodied and spiritual. Debra Nolan, Elder Barbara's niece, remarked that, "Anishinaabe People, we believe everything has a spirit and carries a spirit. Plants and medicines have a name and should be directed as such, treat them as such" (Individual conversation, 8/9/21). Sydney Nolan, Debra's daughter, also commented on land- and place- based ILA,

You are getting that first-hand experience. So, when I am looking at a new plant, I have memory. There's memory to the actual word, so I have an easier time remembering what

that plant was, what its Ojibway name is, what it helps do to the body, all things like that.
(Individual conversation, 16/8/21)

In a conversation about linguistically unique Indigenous knowledge and language specialists or linguists who disagree about the relationship between language and worldview, Dr. Bell-Chiblow shared with me,

I can only relay what I've been told about our language, about Anishinaabemowin. I have been told that *our governance systems, and our laws, and our worldview is embedded in our language* and how our language is connected to the land. That's all cyclic. It's all connected to one another. That's what I've been told, and I believe it because the Elders...are very, very, very knowledgeable...

I think they're [language specialists/linguists] just in the human dimension, and they're forgetting about that spiritual realm, the sky world, our ancestral beings. They're very old. *They're just looking at just human-to-human contact or communication.* (Individual conversation, 3/9/21)

Jayce Chiblow talked about her experiences learning and reclaiming Anishinaabemowin and the differences between grammar-based and immersive, land-based pedagogies,

I think it can be helpful that approach you just mentioned, breaking down the grammar. It can be helpful for more reading and writing...I also know people that aren't using that approach at all, and they are just spending time with language speakers, and are

immersed in it. Full immersion basically...they are more much more fluent and have learned a lot faster than I have...

These people that I'm talking about, and this kind of comes back to that, what we were just talking about, on the land learning. They're also on the land, learning all of these things. So, while they're out, for example, harvesting a rabbit, they actually do that, or out in the garden. They're talking about it in the language, and learning it as they're doing, like physically doing it. And then also that connection with the land they would have by doing it hands-on and learning at the same time. You can hold something in your hand and be like, okay, this is this; but in Anishinaabemowin, it's actually more about, this is alive, you know? There's my apple example.

Shows apple

It's here; *this is alive, and this is a being that has a spirit*. That's not always included in the language when you break it down the way you mentioned...*that piece is missing.*"

(Individual conversation, 3/9/21)

Elder Barbara Nolan demonstrated in our Zoom conversation how she embodies ILA and adapts her approach for digital and online environments (Figure 4.3). We sought to maintain this immersive concept-based pedagogical approach for our *TEK-nology* videos.

When you're acquiring a language, as a kid, as an adult, even if you're acquiring the language, *you're not resorting to grammar, grammar structure or nothing...you teach a concept, all in the language*. You don't tell them that, you don't translate anything...But, you say, maybe you are going to work on colors, okay? So, today maybe I'll wear this red

hat...and maybe it matches your jacket. All the while the kids might be listening to two words for the color red... They know how to add, Misko-wiikwaan. Misko-wiikwaan is a red hat. Misko-biiskowaagan is a red jacket. Misko-pkwaakwad, okay? So, you bring out your ball.

Shows a red ball on screen Misko-pkwaakwad.

Throws ball to computer screen, and ball bounces back Nkwebdoon. You catch it.

You can do a lot with technology, and so, if you do these teaching videos, *you're not teaching words, you're teaching concepts*. Up, down... maybe you have a picture of something, and you're going to put the ball on the table. I'm going to put the ball beside the table. So, you're teaching those locative words, but you're not telling the people these are locative words. (Individual conversation, 8/9/21)



Figure 4.3: Barbara Nolan and Paul J. Meighan-Chiblow immersive ILA demonstration

4.4.3 “You get a piece of yourself back”: Cultural and linguistic resurgence

Participants underscored the strong connections between Indigenous languages, culture, and identity. Joseph Belleau remarked, “identity in itself is very key in regard to revitalization, not only of language, but just of us as Anishinaabe” (Focus group 1, 26/9/21). Sydney Nolan shared, “language to me is kind of defining who you are” (Individual conversation, 16/9/21). In our sharing group, in response to “In what ways can learning Anishinaabemowin build strength in the community?” Elder Barbara Nolan, a residential school survivor, shared,

I think it builds a sense of pride, too. It fills up your identity because that's what we lost at the residential school. We lost the ones who were there for a long period of time, lost their language, they were forbidden. We were forbidden to speak our language, so the ones who were there much longer than I was didn't speak the language when they come out of there after ten years. And they lost their identity. So, *this helps strengthen one's identity. You know, when you're learning the language, and you get the piece of yourself back.* (Sharing group, 28/11/21)

Several respondents shared in the online survey that the *TEK-nology* videos could support ALRR and assist them and others in learning and reclaiming Anishinaabemowin:

“They can help learners learn new words.” (Online survey, 24/1/22)

“I learned some new words from the videos and it has me trying to learn more words to work on my conversational abilities.” (Online survey, 20/12/21)

“I learned new words/phrases.” (Online survey, 19/21/21)

“They are about everyday conversations. Plus they are fun.” (Online survey, 19/12/21)

In a discussion about language learning experiences prior to the *TEK-nology* pilot project, Joseph Belleau talked about differences between learning Anishinaabemowin and English in mainstream western education,

I just find that *English is such in a box*, right? Where I feel every other language is almost in the circle...it's such a square mold where it's almost like everyone needs to conform to it...I think about the Industrial Revolution, and how we were all geared to work a nine-to-five job, right? And education has relatively stayed the same for the most part for number of years. You know, sitting in the desk, following an alarm system. You sit at your desk at 8:30, you wait for the bell, you go outside. *A lot of education in itself is based around producing workers to go inside factories.* (Individual conversation, 6/9/21)

Some participants shared that schools could have a role to play, depending on the pedagogical approach and the potential that the approach fosters for home-school-community language transmission. Debra Nolan expressed that, “I think it's super important to have it in schools and have it more accessible to our youth and not having me have to do a beginner [Anishinaabemowin] course in university” (Focus group 1, 26/9/21). And Karen Bell shared how Elder Barbara conducts her ILA classroom, in contrast to mainstream western settings,

She doesn't put herself behind a desk, and then the children sitting at their desk. It's all that *circular learning*...so, to them, they're learning a language, and it's fun to learn,

right? And then they go home, and they may hear something that they've learned. They'll come home and tell their parents that they've heard something. And, *next thing you know, now they're teaching their parent the language.* (Individual conversation, 7/8/21)

In our conversation, Joseph Belleau elaborated on the links between colonization and English, and the impacts of monolingualism on multilingualism:

It's because of what I feel like colonization has done globally... *English is known to be the universal language.* Having that kind of statement being placed on one single language kind of shows that it's a *dominant language that's almost force fed to everyone around the world.* If you want to be connected to everyone, you need to speak English. And not that it's not a bad thing, but when it comes to conforming and fitting into society, whether it be western, European, anywhere, everyone knows a little bit of English. But *not everyone knows any other language, right?* (Individual conversation, 6/9/21)

Elder Barbara also commented on differences between English and Anishinaabemowin, such as the influence of “thinking English” on ILA:

*We're too much in the English way of saying things, so I call that decolonizing our language...*because that's what we want to do. We want to speak it the way we speak it, not the way English is written out...If you're *thinking English*, if you're going to write a sentence, the cat is sleeping, you're going to write the cat first, gzhagens, and is sleeping, nibaa. Whereas, if we're talking normal day, you'll say, nibaa gzhagens. See

now, gazhagens, this is at the end, and nibaa is in the front. So, the action is always in the front when we're talking. Normally talking. And that's what we want to get back to. *We got to change the way we think, learners have to change that.* You know, because learners, you learned English, right? English grammar in school. If you wrote, is sleeping the cat, if you wrote that in English, the teacher would mark a big X, a big X on there, because *that's wrong in English. But in Anishinaabemowin, it's perfectly correct.* Nibaa gazhagens. (Sharing group, 28/11/21)

4.5 Discussion

The purpose of the *TEK-nology* pilot project is to explore the application of a self-determined, technology-enabled language acquisition approach rooted in Indigenous educational philosophies and worldviews (Blair, Pelly, & Starr, 2018; Government of Canada, 2019; Truth & Reconciliation Commission, 2015). The research questions asked how technology rooted in Indigenous worldviews can support community-based language revitalization and reclamation; how culturally appropriate technology-enabled pedagogies can be developed; and what the implications of the *TEK-nology* approach are for language learning, educational practice, and policy. This section will discuss the key takeaways from the analysis in response to the research questions: (1) *relational technology*; (2) *immersive place- and concept- based ILA*; (3) *decolonizing language education*.

4.5.1 Relational technology

The conversations, interactions, and video creations with the LRC on the *TEK-nology* pilot project demonstrate how *relational technology* can be helpful for Indigenous language

maintenance, reclamation, and revitalization. I define *relational technology* as technology that is in-relation and accountable (Wilson & Wilson, 1998) to the Indigenous community. In Ketegaunseebee, as in many Indigenous communities in Turtle Island with declining numbers of speakers (Statistics Canada, 2019), there is considerable strain on fluent Elders and speakers to transmit Anishinaabemowin to future generations. The knowledge shared by the fluent Elder and fellow participants on the project indicates that, while technology is not a panacea for ILR, nor a substitute for important face-to-face land-based learning and knowledge transmission, technology can enable Elders to reach more people and foster accessible communities of practice (Toth, Smith, & Giroux, 2018). Elder Barbara remarked, “I can't be in ten places all at once. Technology helps me reach more people” (B. Nolan, 2021, personal communication). Respondents stated the *TEK-nology* video emojis help transmit concepts and can engage younger learners. Younger learners could co-create more *TEK-nology* videos and support Elders by recording interactions or adding fun, culturally relevant emojis (Trumpener, 2020), songs, and images through cellphone apps.

Technology can be an extended ecology of existing land-based relations as opposed to an extension of (digital) settler colonialism and capitalism which further appropriates Indigenous expertise, knowledges, and languages (Caranto-Morford & Ansloos, 2021; Haas, 2008). However, technology is not neutral and is the extension of the knowledge and belief system which has led to its creation (Meighan, 2021b). An important factor to consider when discussing the role of technology in ILR is identifying which knowledge system is being enacted, and who is accessing or disseminating the knowledge shared. For example, Tim Berners-Lee, the inventor of the World Wide Web, envisaged “universality” and “dictated the monolingual [English] design of the web” (Kelly-Holmes, 2019, p. 28). It is important that the Indigenous community

has control, therefore, over what is shared publicly, especially in relation to knowledge keepers and traditions, so that technology is not implemented in an extractive, capitalistic way and community protocols are followed for Indigenous Data Sovereignty (Galla, 2017; Kukutai & Taylor, 2016). In short, *relational technology*, at every stage, is an extension of an Indigenous knowledge system and is accountable to and/or led by the Indigenous community in accordance with their values, goals, and protocols (Meighan, 2021b). To ensure this, the *TEK-nology* research co-creation process and the ultimate evaluation and assessment of the language videos were subject to LRC and Elder peer review and member checking, which served as a form of validity.

4.5.2 Immersive place- and concept- based ILA

The *TEK-nology* project highlights the importance of “getting the message across” in the language and teaching *concepts*, not words (B. Nolan, 2021, personal communication) to learners through immersive ILA that is culturally, emotionally, and environmentally responsive. As such, the *TEK-nology* research co-creation and video making process sought to: (1) underscore “Land as interlocutor” (Engman & Hermes, 2021, p. 101); (2) embrace a range of “semiotic repertoires” (Kusters, Spotti, Swanwick & Tapio, 2017); (3) focus on holistic action and meaning making; and (4) incorporate image, text, gestures, facial expressions, speech, posture, and the environment. Mainstream western pedagogies have limitations for ALRR and can perpetuate deficit colonial and neoliberal ideologies (Battiste, 2013; Hinton, 2013; McIvor & McCarty, 2017). In contrast to acquiring or learning dominant or non-endangered languages (Chiblow & Meighan, 2021; Hammine, 2020), ILA is place-based and a process that is inseparable from the land, culture, community, and worldview. Wesley Leonard’s (2017) language reclamation

framework emphasizes the “cultural, historical, ecological, and spiritual contexts that underlie the way a community defines its language” (p. 17). Language reclamation, and ALRR, “is thus a type of decolonization” (Leonard, 2017, p. 18).

ALRR and ILA go beyond viewing language as a decontextualized, disembodied code or commodity (Meighan, 2021a) for human-to-human contact or communication. ILA is holistic, embodied, and includes the more than human. Language animacy in Anishinaabemowin, emphasizing a dynamic, interconnected “vital essence...in all things” (Johnston, 2011, p. 89) beyond a western animate-inanimate binary, was highlighted by participants as a key distinguishing feature of land-based learning, governance systems, relationships, and the Anishinaabeg worldview (Absolon, 2011; Geniusz, 2009; Johnston, 2011). Participants shared that plants and medicines have a name (D. Nolan, personal communication, 2021) and that an apple is alive and a being with spirit (Chiblow, personal communication, 2021). The links between Indigenous languages, Traditional Ecological Knowledge (TEK), and the land are corroborated by recent natural sciences studies (Cámara-Leret & Bascompte, 2021; Henson et al. 2021). Cámara-Leret & Bascompte (2021) found that, in three regions with high biocultural diversity, “over 75% of all 12,495 medicinal plant services are linguistically unique—i.e., known to only one [Indigenous] language” (p. 1). The *immersive place- and concept- based ILA* implemented on the pilot project has implications for the teaching of majority languages with colonial legacies, such as English, and more equitable bi- and multi- lingual education. The field of Second Language Acquisition (SLA), for example, could learn from linguistically unique Indigenous knowledges, the relational and embodied connection of language and place (Engman & Hermes, 2021), and the insights shared by the *TEK-nology* participants. McIvor (2020) remarks, “one of the benefits to deeper and closer collaborations between the field of SLA and

ILR would be to highlight and bring attention to the communities on whose lands we all reside, rather than focusing solely on foreign language and immigrant experiences” (p. 90).

4.5.3 Decolonizing language education

Transmission of conversational knowledge is crucial for ALRR and ILR (Assembly of First Nations, 2019). An important study with Indigenous communities in British Columbia reported that, “youth suicide rates effectively dropped to zero in those few communities in which at least half the band members reported a conversational knowledge of their own “Native” language” (Hallett et al., 2007, p. 1). The analysis indicates that the *TEK-nology* videos can support learning and intergenerational transmission of conversational Anishinaabemowin among participants and beyond. Respondents stated they learned new words and phrases during the project and were motivated to learn more. To further support intergenerational transmission and ILA, Elder Barbara stressed the need to address “thinking English” by “*decolonizing our language*” (B. Nolan, personal communication, 2021). That is, what is “correct” and what is “wrong” in ILA and ALRR is community and context dependent and should not be determined or measured by external standards or forces (Leonard, 2017). ILA is not “one-size-fits-all”; ILA is place-based and community-centered, where language, land, culture, and identity are inseparable (Leonard, 2017; McGregor, 2004).

A technology-enabled learning environment should be fun, meaningful, and reflect the strength of the relationships between land, language, community, culture, and identity (Galla, 2017; Pitawanakwat, 2018). A key takeaway from the analysis to engage learners in technology-enabled ILA is immersion in the language and worldview through humour and storytelling (Archibald, 2019; Johnston, 2011). The kincentric and relational approach adopted for the

project, based on existing intergenerational relationships and friendships, enabled a safe “ideological and implementational space” (Hornberger, 2005) to share community-based strategies for ALRR. As Phyak (2021) remarks, “it is important to engage language-minoritized communities in dialoguing about the impacts of dominant language policies in their communities” (p. 230). The implications of community-led and -based ALRR and decolonizing language education are important for enacting more equitable language education policy to address the harms of colonization, “cognitive imperialism” (Battiste, 2013), “epistemological racisms” (Kubota, 2020), and “ontological schisms” (Veland et al., 2018) between western and Indigenous education. In the Canadian context, the Truth and Reconciliation Commission Report (2015) lists 94 Calls to Action to redress the legacy of residential schools and advance reconciliation. The report stresses the need for educational reform and increased governmental funding for long-term, community-led and -based ILR and ALRR initiatives. The insights and knowledge shared on place-based language animacy during the *TEK-nology* project could inform federal, provincial, and family language policy and address deficit colonial and neoliberal ideologies. At a macro- and meso- level, majority language planning and policy decision makers, such as in the case of English or French in the Canadian context, could adopt and/or fund more relational, community- and land- based planning initiatives to foster more ethical, pluralistic, and equitable nation-state language policies (May, 2018). At a home and family micro-level, the *TEK-nology* approach and pilot project could serve as an example for (1) more community-based language planning initiatives (CBLP; McCarty, 2018) and (2) more immersive technology-enabled and community-led ILA in Turtle Island and across the globe.

Finally, the project illustrates how researchers or those who work with Indigenous peoples can begin a process of self-decolonization to collaborate with an Indigenous community.

As a Gàidheal, my personal self-decolonizing journey is guided by Dùthchas which stresses ecological balance and interconnectedness. I followed culturally specific protocols and an Anishinaabe research methodology, Biskaabiiyang, to ensure I am in relation to the land and accountable to the community with whom I work. These processes are always context- and culturally- specific in that if I were working with a different community or Nation, one of the many hundreds across Turtle Island (Government of Canada, 2021), I would follow their own protocols and methodologies. Respecting and being accountable to relationships with my ancestors, family, kin, more than kin, and the land is core to the *TEK-nology* approach and research co-creation process.

4.5.4 Limitations and future directions

More research and funding are required to develop the *TEK-nology* approach and the videos on a larger scale. Respondents on the online survey remarked that more videos could be made, with video content and activities tailored to diverse age ranges. More seasonal videos could have been made on the land, during summer, since the videos were filmed in late fall and early winter. The project relied on one fluent Elder, with limited time and an already very busy schedule, to share insights and lend her expertise as one of the few language and knowledge keepers. The process of creating immersive videos takes significant effort and time, from scripting, coaching learner-speaker participants, to filming, recording, translating, and transcribing. As such, further research would require more funding going forward to ensure the Elder and the process is appropriately and robustly supported.

Elder Barbara suggested in our last focus group that we apply as an ad-hoc committee for funding to carry out a year-long project to further support community-led and -based ALRR.

This funding could enable us to hire a community-based team to support and finance equipment, translations and transcriptions, video making, and more in creating immersive Anishinaabemowin learning videos based on traditional seasonal activities in Ketegaunseebee and the surrounding territory. Building on the *TEK-nology* pilot project in this way, by branching out more into the community over a longer period of time, could help strengthen community capacity while supporting and transmitting more conversational knowledge of Anishinaabemowin intergenerationally.

4.6 Conclusion

The *TEK-nology* pilot project is an example of Indigenous community-based language planning conducted entirely through digital and online technologies. A group of family and family friends designed and co-created a series of language learning videos for ALRR from scratch during the COVID-19 pandemic. The *TEK-nology* approach and pilot project demonstrates how community-led, relational technology and immersive place- and concept- based ILA can support ALRR and foster more equitable multicultural and multilingual education practice and policy.

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Preface to Chapter 5

In Chapter 4, I explored the impact of the *TEK-nology* approach, focusing on its implications for Indigenous language acquisition, community-led educational practice, and the co-creation of culturally, emotionally, and environmentally responsive pedagogies. In Chapter 5 of this thesis, I focus specifically on the impact of language planning and policy (LPP) for Indigenous language revitalization and reclamation. I explore the implications of the *TEK-nology* pilot project as an example of community-based language planning (McCarty, 2018a).

In Chapter 5, I argue that, to prevent further erasure and marginalization of Indigenous Peoples and languages in settler colonial contexts, work is required at multiple levels and that top-down, government-led LPP must occur alongside community-led, bottom-up LPP. In this chapter, I exemplify how Indigenous community members on the *TEK-nology* pilot project are the language-related decision-makers as part of bottom-up, community-based language planning. In this chapter, the Indigenous community members demonstrate what language *is* and *means* for them by centering community needs rather than externally defined or set goals, such as grammatical fluency (Leonard, 2017) or a digitally “thriving status” (Kornai, 2013).

In Chapter 5, I ask what technology-enabled community-based language planning looks like in practice; how Indigenous community members conceptualize culturally and environmentally responsive LPP and education; and how Indigenous-led community-based language planning could address systemic inequities in LPP and education. I seek to expand the critical sociocultural paradigm of LPP (McCarty & Warhol, 2011); exemplify further praxis-driven community-based language planning research (McCarty, 2018a); and illustrate how the engagement of language minoritized communities in LPP (Phyak, 2021) and Indigenous-led

community-based language planning can inform more equitable language policy through “culturally grounded contexts of praxis” (May, 2021).

The analysis in this chapter indicates that Indigenous-led, praxis-driven community-based language planning, using *TEK-nology*, can support Anishinaabemowin language revitalization and reclamation and more equitable, self-determined LPP to address inequities and the marginalization of Indigenous Peoples and their languages in education. The participants on the *TEK-nology* pilot project demonstrate that there are self-determined community- and context-specific factors that can support Anishinaabemowin language revitalization and reclamation, language transmission, motivation, and progress. In Chapter 5, I define these factors as *strength-based language indicators* that centre cultural reclamation, wellbeing, language and community pride, community capacity, and conversational knowledge in the language acquisition and transmission process (Hallett et al., 2007; Leonard, 2012, 2017; Truth & Reconciliation Commission, 2015).

I conclude Chapter 5 with the important implications of the community-based language planning *TEK-nology* project for status and acquisition language planning; culturally responsive LPP methodologies; and federal, provincial, territorial, and family language policy. Participants on the *TEK-nology* pilot project illustrate how Indigenous-led, praxis-driven community-based language planning, using a technology-enabled Indigenous language acquisition approach, can support Anishinaabemowin language revitalization and reclamation, more equitable language planning and policy, and “culturally grounded contexts of praxis” (May, 2021). Chapter 5 demonstrates that the *TEK-nology* pilot project can serve as an example for future technology-enabled, community-based language planning initiatives on Turtle Island and across the globe.

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Chapter 5: “What is language for us?”: Community-based Anishinaabemowin language planning using *TEK-nology*

Abstract

Language planning and policy (LPP), as a field of research, emerged to solve the “problem” of multilingualism in newly independent nation-states. LPP’s principal emphasis was the reproduction of one-state, one-language policies. Indigenous languages were systematically erased through top-down, colonial medium-of-instruction policies, such as in Canadian residential schools. To this day, ideologies and policies still privilege dominant classes and languages at the expense of Indigenous and minoritized groups and languages. To prevent further erasure and marginalization, work is required at multiple levels. There is growing consensus that top-down, government-led LPP must occur alongside community-led, bottom-up LPP. One shared and common goal for Indigenous language reclamation and revitalization initiatives across the globe is to promote intergenerational language transmission in the home, the community, and beyond. The affordances of digital and online technologies are also being explored to foster more self-determined virtual communities of practice. Following an Indigenous research paradigm, this paper introduces the *TEK-nology* (Traditional Ecological Knowledge [TEK] and technology) pilot project in the Canadian context. *TEK-nology* is an immersive, community-led, and technology-enabled Indigenous language acquisition approach to support Anishinaabemowin language revitalization and reclamation. The *TEK-nology* pilot project is an example of bottom-up, community-based language planning (CBLP) where Indigenous community members are the language-related decision-makers. This paper demonstrates that Indigenous-led, praxis-driven CBLP, using *TEK-nology*, can support

Anishinaabemowin language revitalization and reclamation and more equitable, self-determined LPP. The CBLP *TEK-nology* project has implications for status and acquisition language planning; culturally responsive LPP methodologies; and federal, provincial, territorial, and family language policy.

Keywords

Anishinaabemowin, technology, language policy, language planning, Indigenous language revitalization, language reclamation

5.1 Introduction

Language planning activities are not new; they have been carried out by humans since time immemorial, from everyday communicative choices to contemporary forms of policymaking (McCarty, 2018a; Wright, 2016). Language planning and policy (LPP), as a field of research, first originated in the 1950s and 1960s to “solve” the “problem” of multilingualism in newly independent nation-states (Fishman, 1968; Spolsky, 2018). The common view among western sociolinguists during this time was that linguistic diversity was problematic for national development and “unity” (May, 2006; Ricento, 2000). LPP was a solution to the problem of multilingualism and multiculturalism and its principal emphasis was on promoting and reproducing “unifying” one-state, one-language policies (Phyak, 2021; Spolsky, 2018). Indigenous languages were systematically erased through top-down, colonial medium-of-instruction policies, such as residential schools in what is now known as Canada, where the “aim of education is to destroy the Indian” (Davin, 1879). To this day, ideologies and policies still

privilege dominant classes and languages at the expense of Indigenous and minoritized groups and languages (Fishman, 1991, 2001 May, 2021; Phyak, 2021).

More recently, in response to historical and structural inequalities due to colonialism and imperialism (i.e., the “historical-structural approach”; Tollefson, 1991), a critical sociocultural paradigm of LPP has emerged (McCarty & Warhol, 2011). This critical paradigm recognizes LPP as “the complex of practices, ideologies, attitudes, and formal and informal mechanisms that influence people’s language choices in profound and pervasive everyday ways” (McCarty, 2011, p. vii). Critical LPP research underscores researcher positionality, an ongoing critical and self-reflective examination of the researcher(s) relationship with those involved in the research (Lin, 2015; Tollefson, 2006). The critical perspective strives for equity and social justice and recognizes that, although LPP has been weaponized by dominant groups to maintain systems of privilege, it can also be transformative (McCarty, 2018a; Skutnabb-Kangas, 2000; Spolsky, 2017; Tollefson, 1991). There is growing consensus that successful top-down, government-led LPP must occur alongside community-led, bottom-up LPP (Ricento & Hornberger, 1996). Hornberger (1999) and May (1999, 2006) assert that Indigenous language revitalization (ILR) initiatives can only succeed if the community is significantly involved in planning and development.

One shared and common goal for ILR initiatives across the globe is to promote intergenerational language transmission in the home, the community, and beyond (Fishman, 1991, 2001; Hinton, 2013; Leonard, 2017). Drawing on critical sociocultural approaches to LPP (McCarty, 2018b, Tollefson, 2006) and Leonard’s (2017) language reclamation framework, this paper will introduce the *TEK-nology* (Traditional Ecological Knowledge [TEK] and technology) pilot project in the Canadian context. *TEK-nology* is an immersive, community-led, and

technology-enabled Indigenous Language Acquisition (ILA) approach to support Anishinaabemowin Language Revitalization and Reclamation (ALRR). The *TEK-nology* pilot project is an example of online community-based language planning (CBLP; McCarty, 2018a). CBLP is bottom-up, grassroots, and emphasizes the agency and autonomy of Indigenous communities in language-related decision making (Hornberger, 1999; Lewis et al., 2016; McCarty, 2018a).

The *TEK-nology* project is collectively led by community participants and the researcher to support community-led language revitalization and cultural reclamation processes and to center their expertise and knowledges. The purpose of the *TEK-nology* project is to explore relationships between community-led ILA, place-based knowledge, and technology in the Canadian context while responding to policy calls for technology to be culturally appropriate and rooted in Indigenous worldviews (Government of Canada, 2018; Truth and Reconciliation Commission of Canada, 2015). This paper seeks to: (1) expand the critical sociocultural paradigm of LPP (McCarty & Warhol, 2011); (2) exemplify further praxis-driven and technology-enabled CBLP research (McCarty, 2018a); and (3) illustrate how the engagement of language minoritized communities in LPP (Phyak, 2021) and Indigenous-led CBLP can inform more equitable language policy through “culturally grounded contexts of praxis” (May, 2021, p. 49).

5.2 The impact of inequitable language planning and policy on Indigenous and minoritized language communities

Language dominance, shift, or “death” is neither natural nor unavoidable (Dorian, 1998; Skutnabb-Kangas & Dunbar, 2010). As May (2012) remarks, “language loss is not only, perhaps

not even primarily, a linguistic issue – it has much more to do with power, prejudice, (unequal) competition and, in many cases, overt discrimination and subordination” (p. 4). Language policy has enabled dominant language groups to maintain nation-state power and hegemony at the expense of Indigenous and minoritized language communities (Tollefson, 1991), where “subordinate languages are despised languages” (Grillo, 2009, p. 174).

5.2.1 Ongoing threats to Indigenous cultural, linguistic, and epistemic heritages

Indigenous communities on Turtle Island (or what is also known as North and Central America) and across the globe have been multilingual and multicultural since time immemorial (Canagarajah, 2005; May, 2021; McIvor & McCarty, 2017). Multilingualism is not new; it was commonplace worldwide prior to colonial and imperial expansion and “ideologies of contempt” towards Indigenous languages (Dorian, 1998; Grillo, 1989). Multilingualism was the normal, not the “problem” before the imagined one-nation, one-language community associated with the western nation-state system (May, 2012; McIvor & McCarty, 2017; Phyak, 2021).

Multilingualism in Indigenous communities in Turtle Island precedes “new” present-day sociolinguistic superdiversity (May, 2021). Multilingual practices in early contact between Indigenous communities and Europeans already “included the use of multilingual interpreters, lingua francas and trade jargons, and mixed languages” (Patrick, 2012, p. 35). Understanding that Indigenous multilingualisms and multiculturalisms have existed prior to colonialism and imperialism, so-called “new” superdiversity in Global North, and continue to thrive beyond is a vital starting point to address lingering colonial frontier logics, Eurocentric ideologies and epistemologies, and monolithic assumptions of cultures and languages that relegate Indigenous language communities to the “past” (Daniels & Sterzuk, 2021).

Indigenous communities worldwide continue to face threats to their linguistic and epistemic heritage with the unabated spread of dominant colonial languages and global monocultures, such as English and the neoliberal, imperialistic worldview (Battiste, 2013; Phillipson, 1992; Phyak & Sharma, 2021; Skutnabb-Kangas, 2000). Two-thirds of the world's 7000-7500 languages are Indigenous languages; one-third of those are experiencing language loss (Lewis et al., 2016), and "as many as 90% are predicted to fall silent by the end of the century" (McCarty, 2018a, p. 23). Some people may assume that language loss is "normal". However, language *shift* and *loss* differ from language *change*. McCarty and Nicholas (2014) remark, "all languages change through time as a result of language-internal processes and as their speakers interact with other speech communities and cultural changes require new linguistic forms" (McCarty & Nicholas, 2014, p. 107). In contrast, language shift is "concretely mirrored in the concomitant *destruction* of intimacy, family, and community, via national and international...intrusions" (Fishman, 1991, p. 4). This destruction leads to:

Community-wide [language] shift, which occurs when the social structures supporting intergenerational language transmission break down, often as a result of violent dominant-subordinate encounters and the coerced abandonment of ancestral mother tongues. When external forces interact with internal ones, they can produce feelings of linguistic ambivalence and shame, furthering the cycle of language loss. (McCarty, 2018b, p. 356)

Nation-state medium-of-instruction policies have long been a driving force of language shift (Tollefson & Tsui, 2004). Mainstream education and colonial, restrictive policies have

attempted to “‘erase and replace’ linguistically encoded knowledges and cultural identifications with those associated with dominant-class ideologies, values, and practices” (McCarty, 2018b, p. 356). These policies have led to educational and socioeconomic inequities for Indigenous peoples, such as poverty, low rates of educational attainment, and teen suicide (Castagno & Brayboy, 2008). In Canada, Indigenous linguistic and cultural heritage has been compromised either through overt force and genocide, as in residential schools (Truth & Reconciliation Commission, 2015), or in more covert forms, such as present-day monocultural, monolingual school environments. While the destructive role and devastating impacts of residential schools is becoming increasingly recognized (Hanson, Gamez, & Manuel, 2020),

English and French remain the primary medium of instruction of Indigenous students in most schools across the country and attendance is compulsory. Even in schools with Indigenous language programs, students still do most of their learning, speaking, thinking, and functioning in English or French rather than in their ancestral language. (Fontaine et al., 2017, p. 8)

5.2.2 Preventing erasure through Indigenous-led and community-based language planning

Indigenous languages barely receive “ideological and implementational space” (Hornberger, 2005) in mainstream western education. To prevent further erasure and marginalization, work is required at multiple levels. Extensive scholarship underscores that top-down implementation must take place with community-led, bottom-up LPP (King, 2001; Lin & Yudaw, 2016; McCarty, 2018a; Meek, 2011; Ricento & Hornberger, 1996; Shohamy, 2006; Spolsky, 2004). On

Turtle Island, for example, “one-size-fits-all” approaches do not work given the great cultural and linguistic diversity and vast geographic span of Indigenous peoples and languages.

According to the most recent Census data, there are 169 Indigenous languages in the United States (Siebens & Julian, 2011) and more than 70 in Canada (Statistics Canada, 2017). Research also demonstrates that Indigenous language reclamation and revitalization are most effective when they are community-driven and responsive to local contexts and needs (Leonard, 2012; May, 1999; McCarty, 2018a; Ricento & Hornberger, 1996). Conversational knowledge of an Indigenous language can save Indigenous lives, raise community capacity, and foster deep social, emotional, and spiritual wellbeing (Hallett et al., 2007; Kirmayer et al., 2016). Youth suicide rates effectively drop to zero with conversational knowledge of an Indigenous language (Ball et al., 2013; Hallett et al., 2007).

Local, bottom-up, grassroots initiatives are leading the way for Indigenous language reclamation and revitalization, which is also growing as an academic discipline (McIvor & McCarty, 2017). In recent years, proficient and fluent speakers are emerging from Indigenous community-led and self-determined initiatives. Many of these tend to be predominantly or completely immersive in the language and have a strong culture- and land-based component to support intergenerational language transmission, address the privileging of dominant, colonial languages and knowledges in mainstream education and policy (Meighan, 2022c), and counteract extreme language shift (McCarty, 2018b, 2021; Phyak, 2021). Indigenous community-based language planning (CBLP) is a key example and is characterized by the agency of local people in language-related decision making (Lewis et al., 2016; McCarty, 2018a). CBLP often begins with a small group or even an individual. These efforts by individuals and families led to changes in national and state-level language policies. McCarty

(2018a) elaborates, “it was a small group of Indigenous parents and elders who established the first Kōhanga Reo and Pūnana Leo in the early 1980s, at a time when Māori and Hawaiian were predicted to ‘die’” (p. 373). In Finland, Saami community members implemented a year-long course with classes and cultural activities to support Aanaar Saami revitalization (Olthuis et al., 2021). In Nepal, a Limbu community youth organization sought to ensure the Limbu language is taught in school (Phyak, 2019). And in the North American context, Wôpanâak (Wampanoag) Native American tribal citizens revived their language, which had not been spoken in more than 150 years. The community-based Wôpanâak Language Reclamation Project (WLRP) was led by the efforts of a single tribal citizen, jessie little doe baird, and today offers classes, immersion camps, and a language nest preschool (little doe baird, 2013).

The affordances of digital and online technologies are also being explored to foster more self-determined CBLP, to enable Elders and speakers to reach more learners, and to bolster existing local initiatives (Herman et al., 2020; Olthuis et al., 2021; Olthuis & Gerstenberger, 2019; Toth, Smith, & Giroux, 2018). For example, the WLRP highlighted above also offers Kun8seeh, an online community where Wampanoag language learners can “engage with your language whenever you want, from wherever you want” (www.kun8seeh.com/). Many more Indigenous communities, especially during the COVID-19 pandemic, have been using digital and online technologies to sustain and continue important community-based initiatives (McIvor, Sterzuk, & Cook, 2020; McIvor, Chew, & Stacey, 2020). Examples of community and land-based immersion classes and programs that went online due to COVID-19 are the nêhiyawak Language Experience for Cree learners (Daniels, Morin, Cook, & Thunder, 2022), or Eshki-Nishnaabemjig for Anishinaabemowin learners (Anishinabek News, 2020). Tollefson (2017) points out, “language planning may take place in schools and other institutions, in families and

workplaces, or in any social group—including virtual communities—in which verbal communication takes place” (p. 2).

As the literature demonstrates, to be more equitable LPP needs to be community-, culture-, and context- specific. To further explore the potential of CBLP with “virtual communities” (Tollefson, 2017), I introduce the *TEK-nology* pilot project for ALRR. *TEK-nology* is an immersive, community-led, and technology-enabled ILA approach. The article will address three research questions.

RQ1) What does technology-enabled CBLP look like in practice? What are its possibilities, tensions, and challenges?

RQ2) How do Indigenous community members conceptualize culturally and environmentally responsive LPP, research, and education?

RQ3) How can Indigenous-led CBLP address systemic inequities and the marginalization of Indigenous peoples in LPP, research, and education?

5.3 Methodology

5.3.1 Positionality

Is mise Pòl Miadhachàin-Chiblow. 'S e Gàidheal a th' annam. Rugadh agus thogadh mi ann an Glaschu, Alba. My name is Paul Meighan-Chiblow. I'm a Scottish Gael. I was born and raised in Glasgow, Scotland.

My research focuses on Indigenous language revitalization and language education policy. My experiences as a Gàidheal (Scottish Gael) growing up in Glaschu (Glasgow) inform my work. I was raised by my mother who is from Dalabrog (Daliburgh), in the north-western island of Uibhist a Deas (South Uist) in na h-Eileanean Siar (Western Isles). I remember hearing

Gàidhlig (Scottish Gaelic) all the time around my fluent speaking grandmother, who was a core of our family. However, Gàidhlig, an endangered Indigenous language in Alba (Scotland) with approximately 57,000 speakers, was not available to me in the educational system. Gàidhlig and Gaelic culture were almost eradicated due to many factors, such as the forced eviction of the Gàidheil (Gaels) from their traditional homes and lands during the Highland Clearances in the mid-18th to -19th centuries and the destruction of centuries-old Gaelic clan-based society after the Battle of Culloden in 1746 by British government and imperial forces (e.g., Hunter, 2014; MacKinnon, 2018). In more recent times, members of my own family and older generations recall being beaten for speaking the language in classrooms. An example is the maide crochaidh (the “hanging” or “punishment” stick) that children passed along to those who were caught speaking Gàidhlig (MacKinnon, 2019). Moreover, Gàidhlig, spoken for more than 1500 years in Alba, is still not recognized as an official language in the United Kingdom. The multi-generational and psychological impacts of the trauma associated with the repression of Gàidhlig and Gaelic culture linger to this day and have been driving factors for language shift, “loss”, socioeconomic and sociopolitical inequities, and the destruction of family and community intergenerational language transmission in Alba (e.g., Smith, 1982; Ó Giollagáin, 2020). McFadyen and Sandilands (2021) elaborate,

The ongoing legacy of this coloniality of power is destructive in a myriad of ways. In the *Gàidhealtachd* the effects of clearance are still felt, with a fragile economy, rural housing crisis and the decline of the Gaelic language. In his essay, *Real People in a Real Place*, Iain Crichton Smith spoke of historical ‘interior colonisation’ alongside a growing materialism which, he believed, had left Gaels in a cultural milieu increasingly ‘empty

and without substance’...such a view resonates with...perspectives made by writers and scholars of indigenous peoples across the globe. This is not to suggest or promote an equivalence here between the experience of the descendants of enslaved people and others who experienced colonisation by modern, imperial states; rather, such perspectives describe symptoms of human-ecological disconnect, alienation and loss of meaning – an indicator of just how far our human psyche and culture has become divorced from our natural environments. (p. 163)

As a direct result of deliberate processes of covert and overt linguistic eradication, family land dispossession, the role of the educational system, and internalized deficit ideologies about the “value” of Gàidhlig, I do not speak my language fluently *yet*. I am currently on a Gàidhlig reclamation journey as an adult learner, which also forms part of my ongoing self-decolonization process (see also Meighan, 2022a).

My motivation for equitable education, language policy, and language revitalization has continued to grow after meeting my Anishinaabe Ojibwe husband in Glaschu, Alba in 2015. After marrying there, I immigrated to Turtle Island together with him in 2016. Since then, I have learned more about the devastating impacts of colonialism on the Indigenous Peoples of Turtle Island from him and from discussions with my Anishinaabe family. These experiences have led to my current research, which focuses on the role of technology for the maintenance, reclamation, and revitalization of endangered and Indigenous languages. This research project explores CBLP using the *TEK-nology* approach with participants from my Anishinaabe family’s community in Ketegaunseebee (Garden River First Nation) in the Great Lakes Region of Turtle Island (refer to Figure 1.1). As a (re)searcher and family member who is not Indigenous to Turtle

Island nor from Ketegaunseebee, I respectfully follow Anishinaabe protocols and methodologies on this project.

5.3.2 Research context and methods

Ketegaunseebee has a population of 3,264 members registered under the Indian Act, according to latest statistics. 1,350 members are resident on the band's reserve, while 1,914 members live off reserve (Crown-Indigenous Relations and Northern Affairs Canada, 2022). According to the latest Census data, 115 members—10.2%—of the on-reserve population report knowledge of an Indigenous language, which refers to “whether the person can conduct a conversation in the language” (Statistics Canada, 2016). In the latest Census, 97.3% of the on-reserve population report speaking English most often at home (Statistics Canada, 2016).

The *TEK-nology* pilot project³⁰ took place over 13 weeks between September-December 2021 during the COVID-19 pandemic. There were several phases: an online autoethnographic self-examination journal; offering Asemaa (Tobacco) in gratitude; individual semi-structured conversations with participants (N=7) who later formed a Language Revitalization Committee (LRC); one LRC sharing group and three LRC focus groups; the creation of three 3-minute *TEK-nology* language learning videos; and a final online survey (refer to Table 3.2). Due to COVID-19, research involving participants was conducted remotely using online (Zoom) and digital technologies (laptop, cellphone, and camcorder). Asemaa should be offered in person when seeking Elder guidance and/or assistance in line with Anishinaabe protocols (Wilson & Restoule, 2010). Due to COVID-19, I offered Asemaa in gratitude to the land on which I was located, Tkaronto (Toronto), before speaking online with participants.

³⁰ This research, File 20-11-048, was approved by McGill University Research Ethics Board.

The *TEK-nology* pilot project was rooted in an Indigenous Anishinaabe paradigm, *Mino-bimaadiziwin* (The Good Life). I followed an Anishinaabe community-led, decolonizing, participatory methodological framework, *Biskaabiiyang*, or “Return to Ourselves” (Geniusz, 2009). *Biskaabiiyang* begins with the researcher decolonizing themselves to conduct meaningful research with the Indigenous community (Geniusz, 2009). As a methodology for my ongoing self-decolonization process, I followed *Dùthchas* (which I loosely translate as Ancestral Bonds). *Dùthchas* is an intrinsic part of the *sealladh a’ Ghàidheil* (Gaelic worldview) and is derived from the Gàidhlig word “*dú / dùth*”, meaning “earth” or “land” (MacKinnon & Brennan, 2012). *Dùthchas*, as a Scottish Gaelic ontology and methodology, stresses the interconnectedness of people, land, culture, and an ecological balance among all entities, human and more than human. Following *Dùthchas*, and prior to starting the *TEK-nology* project, I began to learn and reclaim my endangered Indigenous language, Gàidhlig, to connect more with my mother culture and resist colonialism and language oppression. Prior to COVID-19, I participated in Anishinaabe ceremony in my family’s community, and during COVID-19, I took an Anishinaabemowin for Absolute Beginners online course with Elder and Anishinaabek Nation Language Commissioner Barbara Nolan, who later joined the project. *Biskaabiiyang* grounds me in community-led, Anishinaabe protocols, values, and ethical practice while *Dùthchas* guides me for a respectful and non-appropriative (self)-decolonizing research journey informed by my own lived experiences. These decolonizing methodologies respond to Wilson’s (2001) call to be “answerable to all your relations when you are doing research” (p. 177).

Participants were selected through purposive and snowball sampling (Patton, 2015) from family and family friends from my Anishinaabe family’s community in Ketegaunseebee³¹. I

³¹ All participants signed consent forms. Their names are used with permission.

designed and implemented a kincentric and relational approach (refer to Figure 3.3) for participant selection to (1) continue deepening and respecting existing relationships, and (2) understand factors within those relationships that may have influenced intergenerational ALRR. Together, we, the community participants and I, formed the LRC. I conducted individual semi-structured conversations with LRC members, using the Conversational Method (Kovach, 2010) which gathers knowledge in relational dialogue with the “deep purpose of sharing story” (p. 40). We had three LRC focus groups to generate ideas, themes, and content for videos. We discussed relationships between Anishinaabemowin, the land, and technology. In our sharing group, we shared what language education means and is for the community. After this, we co-created three 3-minute immersive and conversational Anishinaabemowin *TEK-nology* videos between the fluent speaking Elder and a fellow LRC member (refer to Figure 4.1). The videos were filmed by LRC members themselves in Ketegaunseebee. At the end of the project, the videos were shown to participants at a *TEK-nology* video screening on Zoom for collective feedback and approval. The videos are now hosted on a public LRC YouTube channel (<https://www.youtube.com/playlist?list=PL-uUUEW1KLSu-1SKs-Ixd8MQGnLGa88wP>) in accordance with participant wishes. Participants were invited to respond to an online survey for feedback on the pilot project and the co-creation process. LRC members were also invited to provide feedback on this article and others about the project (see Meighan, 2022a, for further discussion).

To interpret and analyze the knowledge generated during the project, I employed qualitative Anishinaabek data analysis (Chiblow, 2021), alongside inductive reflexive thematic analysis (RTA) (Braun & Clarke, 2021). Inductive RTA worked alongside Anishinaabek

analysis as part of the greater Indigenous theoretical framework and paradigm to ensure validity and accountability to both Indigenous and non-Indigenous (academic) communities.

5.4 Analysis

I identified three main themes during analysis: (1) *Good research*; (2) *Language reclamation for community capacity building*; (3) *Strengths in community-based education*. I report examples of these in a storied manner that is reflective of our conversations to maintain the integrity of the participants' insights and knowledge (Kovach, 2009, 2010). As Hermes & Kawai'ae'a (2014) point out, "the data are in the stories" (p. 304).

5.4.1 Good research

At the beginning of the project, LRC members and I had an individual semi-structured conversation to better understand what CBLP and LPP research should look like. Participants stressed that good community-based research is inclusive and holistic. Good research should be beneficial and accessible to the participants and the wider community. According to Joseph Belleau, Indigenous education teacher and family friend,

Good research is when the material is providing the context of lived experiences, whether it be social, emotional, or physical aspects. Hands-on always, for myself, is easier to comprehend and grasp. Some people are so used to reading stuff and having that kind of understanding. But, for someone like myself, having pictures, images, tactile stuff in front of me...Providing that as research and then letting myself get ahold of that learning is key. (Individual conversation, 6/9/21)

Elder Barbara Nolan, who has decades of experience teaching and designing curricula for Anishinaabemowin language courses in the community and beyond, highlighted researcher reflexivity and relational research objectives:

I think it all depends on what your goal is. What do you expect to get out of the research? You have to work towards that. I always find that when you're researching, you have to get at the core of your question: is it going to reflect on your goal? That's what I think is good research. Your sources of the research have to be credible. Credible individuals or credible material that is relative to your research. (Individual conversation, 8/9/21)

Jayce Chiblow, Toolkit Action Lead for Indigenous Climate Action and the researcher's sister-in-law, underscored the importance of Indigenous-led research:

I think research should be Indigenous-led. And when I say led, there can be non-Indigenous researchers. But I think when it comes to design and inclusion and overall oversight of the project or the research that's going on, it should be Indigenous-led and include more than just one type of person. I think there should be a variety, including all genders, including all age groups...having a wide variety of input so that the design itself and the execution of the research is done in a good way. (Individual conversation, 3/9/21)

Doing research in a good way was similarly stressed by Dr. Susan Bell Chiblow, Assistant Professor in Indigenous Environmental Stewardship at the University of Guelph and Jayce Chiblow's mother:

Good research is research that actually benefits people, not just people, but also benefits all living beings. That's what I think good research is. From an Anishinaabek perspective, good research is living life, following Mino Bimaadziwin, living a good life. Because as Anishinaabe people, we didn't necessarily 'research', we were always searching for knowledge. So that lifelong journey, I think it's part of good research. (Individual conversation, 3/9/21)

In an effort to conduct good research, I kept a reflexive self-decolonizing/examination journal to document my (re)search learning journey. I wrote about things such as what decolonization and decolonizing research means to me; challenges and tensions; and my language learning journey in Anishinaabemowin and reclamation journey in Gàidhlig. Below is an excerpt from my first online entry about the research project and participant selection as part of the kincentric and relational methodological approach I designed (refer to Figure 3.3; Meighan, 2022a):

Today, I'm at the point where I'm about to send out invitations to potential Language Revitalization Committee (LRC) and *TEK-nology* video participants. I'm very mindful that I would like to embark on this project in my married family's community in the most

relational way possible, and I think a good way of doing that is by starting with myself and radiating outwards.

Me.

Close immediate family.

Extended family.

Relational human kin (close family friends that I know or who have been recommended to me).

Relational more than human kin (the land).

I'm imagining this working like a concentric circle (insert image when I get to drafting it)

... It is my sincere hope that I can embark on this project in a good way...I'm not from the community where I will be working myself, so I would like to start with people I know, to include people who are close to my immediate relations in the project. I want to centre the people who know the land and their community and the process of reclaiming their language at the heart. They will guide the process...I think the thing I would like most is to be transparent to myself and also to anyone else going forward. And this journal will be helpful (I hope) in tracking that journey and the experiences I have.

(August 16, 2021)

In our LRC focus groups, we discussed how technology could support language transmission and be implemented in a beneficial and good way. We agreed where the *TEK-nology* videos should be kept (public YouTube); what knowledge or content is shared (natural, everyday conversations); and which teaching and learning approach (language immersion) would be implemented. We decided the videos should be short and done in a natural, fun,

conversational manner to engage learners of all ages and learning styles. To co-create the *TEK-nology* videos, we sought to incorporate an immersive, concept-based ILA approach Elder Barbara Nolan suggested. This approach involves, “not resorting to grammar...you teach a concept, all in the language...maybe you have a picture of something, and you're going to put the ball on the table. You're teaching locative words, but you're not telling people these are locative words” (B. Nolan, individual conversation, 8/9/21). In the anonymized online exit survey, in response to Question 8 “How do you feel about the language learning/transmission process on this project compared to other experiences you have had?”, 3 out of 6 respondents commented on the benefits of technology-enabled and Indigenous-led CBLP:

“I really enjoyed the interaction with everyone when I was available to attend. I think it provided great insight for everyone to share their experiences with one another and learn from that.” (Online survey, 31/1/2022)

“I feel this is the way to go on language transmission - virtually as a lot of people can be reached.” (Online survey, 31/12/2021)

“This was much more community based and focused on a variety of levels. Most of the processes I've experienced included a main focus on grammar and technical knowledge where this project allowed us to focus on what we wanted, and included immersion!” (Online survey, 20/12/21)

5.4.2 Language reclamation for community capacity building

In our individual conversations, focus, and sharing groups, we shared ideas for raising engagement for community-based language learning within and beyond the *TEK-nology* project.

Debra Nolan, Elder Barbara's niece, emphasized, "With the hustle and bustle of everyday, it just needs to take priority in your life" (Individual conversation, 8/9/21). Joseph Belleau commented:

This is based on my own experience. When I talk to my parents, or my aunts and uncles in regard to language, no one really speaks Ojibwe...They have taken French...It's not a top priority for a lot of people. I think we have to make it a priority to retain the language, and to change that frame of thought in regard to what is being Anishinaabemowin. What is language for us? What things can we grow and flourish within our community?

Because we do have a lot of opportunities to see a lot of these things into fruition. What are the steps we need to take regarding community engagement? Community education regarding language? I think we have everything. (Focus Group 1, 26/9/21)

Jayce Chiblow, who works in British Columbia, shared what language strategies she has seen in Indigenous communities there and in Rankin, one of the communities in Batchewana First Nation, near Ketegaunseebee. She also mentioned High Bank, a popular landmark with views over Ketegaunseebee:

I was driving down the highway here, it's called the Sea to Sky Highway. The Squamish folks are really great at reclaiming their language. They have all these signs...[and] I think it's in Rankin, they use stop signs, like slow down or children playing signs. But what that made me think of is using our language for place names. Because on that highway they had all the signs in their language for the name of that area, and every two minutes you drive there's another one. If we want to start collective community learning,

a good way would be to start reclaiming our place names. What's High Bank's name? I don't know, but we all know High Bank. What about the mouth of the river...we must have the name for that. Starting with smaller things, like places that we use, would be a great way for collective community learning and to inspire people. (Focus Group 1, 26/9/21)

On the topic of future community-based and -led initiatives, Elder Barbara Nolan underscored the influence of dominant and deficit language ideologies on ALRR:

There's still some people that say, why do you want to learn the language?...That state of thinking has got to disappear. We have to look at the other side. If we lose our language, we are going to lose more than language. We're going to lose what's in that language. There are some explanations in some of the words in our language that mean a great deal more than the English translation for that word. But that won't come until we create speakers and then the speakers, the newly created speakers, can access that type of education by looking at the words. The other thing is Pierre Elliott Trudeau. In one of his talks when our Chiefs went to see him, he said, if you do not have your first language, then you have no business coming to see me about whatever...And that is so true, because if we lose our language, if it completely disappears...what's going to hold us together as Nishnawbe people when we don't have a language?...We cannot lose our language. That's a bottom line. (Focus Group 1, 26/9/21)

Debra Nolan suggested ways in which ILA and ALRR could be fostered and incentivized within the community and beyond. She gave the example of her daughter and fellow LRC member, Sydney Nolan, who took French immersion until Grade 12:

Why isn't Anishinaabemowin a requirement to hire? I think it would push more people to acquire their language...If there is a more of a need and a want for those higher positions... I sent her [Sydney Nolan] to a French immersion because I was thinking, what would get her the best jobs and what would help her...And it did. She has French as a second language, and she did get hired because she is bilingual. I think if she acquires Anishinaabemowin, that would help her as well. (Focus Group 1, 26/9/21)

During our focus groups for the *TEK-nology* language videos, immersion was identified as a key language acquisition strategy. Elder Barbara remarked, "if you want to acquire language and become a speaker, immersion is the way to go" (Focus Group 3, 28/11/21). She elaborated on the success of French immersion in Canada and its implications for CBLP and ALRR in Ketegaunseebee:

In the mid 60s, I think it was, the government said we're going to have a bilingual country, English and French... So, the people in Saint Lambert, Québec were saying our kids are not coming out of Grade 8 speaking French. We have to do something about that. There were two professors from McGill University who went and helped them with the very first immersion, French as immersion class, kindergarten class...They wanted their kids to get these jobs...all these government jobs that require you to be bilingual. Why

can't us Nishnawbe people do that? But we have to create immersion, kindergarten...All those classes are going to be taught in the language...I don't see a fully Anishinaabemowin immersion school yet. (Focus Group 1, 26/9/21)

Looking beyond bottom-up CBLP, LPP strategies at a macro-level were also discussed. Dr. Bell-Chiblow commented on the success of Maori language immersion and revitalization and its implications for future ALRR initiatives:

The Maori did a 10-year language strategy and now most of the country knows how to speak that language. But the challenge when you look at Turtle Island is there's so many different language groups. I've also heard old people say, don't worry about the dialect. For instance, Anishinaabemowin has different dialects, and they say don't worry about that dialect. Just learn it from someone and the understanding of the differences will then come. So, trying to think about the government, the Truth and Reconciliation Committee said one of their recommendations about language is the government committing to a language strategy, developing a Language Commission, or having a Language Commission. But how do you put a 10-year language strategy into each kind of pocket of community? For instance, I think if we did it from Robinson Huron Treaty territory... if we did it in territories as opposed to communities, then it would be more successful. But is the government willing to commit the funding to those type of activities? (Individual conversation, 3/9/21)

5.4.3 Strengths in community-based education

Participants shared ideas and strategies on what community-driven and -based education can and should be. Karen Bell, Garden River First Nation Band Councilor for the Educational Programs portfolio, who was taught Anishinaabemowin by Elder Barbara Nolan in elementary school in the 1970s, spoke about the role of culturally responsive language education in creating strong individuals:

Just teaching students English is not sufficient. If you have a predominant classroom of Indigenous children, then you better be speaking that language or trying to engage them in speaking the language, because that's when you learn who you are. That's when you learn where you're from, and that's where you learn, from the bottom of your heart and your mind, to connect with each other. This is where you start feeling really good about yourself and your confidence, and all those other things that build strong individuals.

(Individual conversation, 7/8/21)

Participants underscored the strong connections between Anishinaabemowin, community, culture, and identity. Joseph Belleau remarked, “identity in itself is very key in regard to revitalization, not only of language, but of us as Anishinaabe” (Focus Group 1, 26/9/21). Sydney Nolan commented, “language, to me, is defining who you are” (Individual conversation, 16/9/21). In our sharing group, in response to “In what ways can learning Anishinaabemowin build strength in the community?” Elder Barbara Nolan, a residential school survivor, shared,

I think it builds a sense of pride, too. It fills up your identity because that's what we lost at the residential school. We lost the ones who were there for a long period of time, lost their language, they were forbidden. We were forbidden to speak our language, so the ones who were there much longer than I was didn't speak the language when they come out of there after ten years. And they lost their identity. So, this helps strengthen one's identity. You know, when you're learning the language, and you get the piece of yourself back. (Sharing group, 28/11/21)

Land-based, hands-on, experiential learning was identified as key for ALRR and for community education. Jayce Chiblow shared, "There's concepts that come from the land. There's teachings in our language that come from the land" (Individual conversation, 3/9/21). Debra Nolan echoed these words:

As Anishinaabe People, we believe everything has a spirit and carries a spirit. As do I, and I have my name. Each of these plants and medicines that belong to the land have a spirit and a name, and they should be directed as such...whether it be on the land, or Nibi (water), they each have their name...I know the best way I learn is hands-on. I have to see it. I'm more visual. Say [for example], Nibi. Then you hold the water. Nibi...Nibi. (Individual conversation, 8/9/21).

Sydney Nolan, Debra Nolan's daughter, further described the relationship between Anishinaabemowin and the land:

Most of my teachings come from the people around me, or even the plants around me, the animals around me, my teachers are everyone around me...Once you learn the language...most of it has different parts of the land tied into the word. It's very significant. A lot of our language would not be there if it wasn't for the land, because that's where we're most rooted. (Individual conversation, 16/9/21)

On the topic of ILA and ALRR, participants shared context- and community- specific factors that can support language learning, motivation, and progress. Dr. Susan Bell Chiblow remarked:

I think listening, understanding it first is just as important as being able to speak it. Somebody also said that a baby isn't born knowing how to speak a language...Looking at it from that perspective helps me not be so hard on myself if I don't understand the language. (Individual conversation, 3/9/21)

Sydney Nolan shared an interaction she had with her great-aunt, Elder Barbara, while she was learning Anishinaabemowin:

Once I asked her, so how do you spell that? She goes, well, no, write it as you think it sounds because the grammar does not worry. She goes, as long as you know what you're saying, as long as you can pronounce it, that is fine. So, that's where it made me think, I was like, whoa! That is a totally different way of teaching, or that way I was taught for French. It really made me think about, in school with French, it was grammar, verbs, and

then pronouncing, hearing, listening. But with her, it really made me understand more and feel like I was progressing without having to be grammatically correct. That's where I realized...Progress, should it really be categorized? (Individual conversation, 16/9/21)

Elder Barbara Nolan elaborated on her immersive, concept-based teaching approach with young learners in the community:

I speak only the language. I don't translate anything I say to them...I have fun. That's a one way of passing on a language... I don't force them to speak the language, they will speak the language when they are comfortable...One time, I was helping get them ready to go outside to play...This one little guy walks by me, and I said to that little guy, 'Aapiish e-zhaayin?' (Where are you going?). That little guy turns around, looks at me, and he says, 'Gojiing!' (Outside!). He answered me in the language. And my heart was full. (Focus Group 1, 26/9/21)

Several respondents shared in the online survey how the immersive, concept-based language videos we co-created on our CBLP *TEK-nology* pilot project could support ALRR:

"They can help learners learn new words." (Online survey, 24/1/22)

"I learned some new words from the videos and it has me trying to learn more words to work on my conversational abilities." (Online survey, 20/12/21)

"I learned new words/phrases." (Online survey, 19/21/21)

"They are about everyday conversations. Plus they are fun." (Online survey, 19/12/21)

Respondents also commented on how we could branch out more into the wider community using technology-enabled spaces in the future:

“I learned in this project that all of us have the same goals for wanting language to be present within our community.” (Online survey, 31/1/2022)

“I'd like to see more, and hopefully some mobilization in GR [Garden River]” (Online survey, 20/12/21)

“More videos - maybe even a GRFN [Garden River First Nation] website dedicated to videos in the language” (Online survey, 19/12/21)

5.5 Discussion

The *TEK-nology* pilot project explored and conducted praxis-driven CBLP using a self-determined, technology-enabled language acquisition approach rooted in Indigenous educational philosophies and worldviews (Blair, Pelly, & Starr, 2018; Government of Canada, 2019; McCarty, 2018a; Truth & Reconciliation Commission, 2015). The research questions asked what technology-enabled CBLP looks like in practice; how Indigenous community members conceptualize culturally and environmentally responsive LPP and education; and how Indigenous-led CBLP could address systemic inequities in LPP and education. This section will discuss key takeaways from the analysis in response to the research questions: (1) *Indigenous-led, beneficial research*; (2) *Immersive, place-based Anishinaabe language education policy*; (3) *Strength-based and self-determined community-based language planning*.

5.5.1 Indigenous-led, beneficial research

The *TEK-nology* pilot project is an example of CBLP (McCarty, 2018a) conducted entirely through digital and online technologies with implications for status and acquisition language planning (Cooper, 1990; Kaplan & Baldouf, 1997, 2003) and “methodological rich points” in LPP research (Hornberger, 2015). The analysis indicates that technology is a beneficial medium for CBLP where participants can “share their experiences with one another and learn from that” (Online survey respondent, 31/1/2022). The *TEK-nology* language videos, now hosted on public YouTube, made the research co-creation more accessible to participants and potential future community learners. As one online survey respondent remarked, “I feel this is the way to go on language transmission - virtually as a lot of people can be reached” (Online survey respondent, 31/12/2021).

The conversations, interactions, and video co-creations with the LRC on the *TEK-nology* pilot project underscore that CBLP for ALRR should be Indigenous-led and beneficial to the community and beyond (May, 1999, 2006; McCarty, 2018a). Indigenous scholarship stresses the necessity of researcher positionality, or “self-location” prior to embarking on research *with* or *by* Indigenous communities (Absolon, 2011; Kovach, 2009; McGregor et al., 2018; Riddell et al., 2017). Absolon (2011) underscores, “location does matter. People want to know who you are, what you are doing, and why” (p. 73). Elder Barbara invited the question, “What do you expect to get out of the research?” (B. Nolan, 2021, personal communication). Self-location identifies power differentials in LPP and “prompts awareness of the extractive tendencies of (western) research” (Kovach, 2009, p. 112). Acknowledging subjectivity through researcher positionality and self-location is fundamental for future critical LPP work that deems to be beneficial and transformative (Lin, 2015). It is therefore essential that researchers position themselves and

follow community- and culturally- specific protocols for good research, beneficial LPP, and praxis-oriented CBLP (McCarty, 2018a) to: (1) avoid the western “helicopter approach” (Hall et al., 2015) where researchers arrive in marginalized and Indigenous communities, collect data, and rarely ever return; (2) set the stage for equitable research methods and “researchers-in-relation” (Kovach, 2009) which privilege Indigenous ways of knowing and being within LPP and research more broadly; and (3) expand the critical sociocultural paradigm of LPP (McCarty & Warhol, 2011).

As a family member who is not Indigenous to Turtle Island, I self-located and positioned myself in relation to the research (see Methodology) and followed an Anishinaabe research paradigm—Mino Bimaadiziwin (The Good Life)—and decolonizing methodologies. Mino Bimaadiziwin was highlighted as integral to good research by one of the participants (S. Bell Chiblow, 2021, personal communication). The Anishinaabe paradigm helped ensure the research followed ethical parameters, such as the 6 Rs of Indigenous research: respect, responsibility, relevance, reciprocity, relationship, and refusal (McGregor et al., 2018) and Ownership, Control, Access, and Possession (OCAP) standards (FNIGC, 2014). OCAP standards assert that Indigenous communities maintain control over research and are recognized as knowledge holders. The decolonizing methodologies (Biskaabiiyaang and Dùthchas) I followed enabled me to respect and be accountable to existing relationships within my Anishinaabeg family’s community (relational accountability; Reo, 2019; Wilson, 2001) and take an “engaged approach” to LPP which, “focuses on trust-building with the researched communities and on creating an environment where participants can openly discuss multiple and contested language issues (e.g. sociopolitical, educational, and cultural) in education” (Phyak, 2021, p. 222).). I kept a reflexive self-decolonizing and examination journal (Moeke-Pickering et al., 2006) to document my

(re)search learning journey. Strega and Brown (2015) state, “reflexivity—a recognition that the researcher is not separate from but exists in relationship with what s/he is trying to understand—is a core component of ethical research practice” (p. 8). This journal helps me activate inward knowledge as much as possible (Kovach, 2009). The CBLP *TEK-nology* research co-creation process, resulting articles, and the ultimate evaluation and assessment of the language videos were also subject to LRC and Elder peer review and member checking, which served as a form of validity. The LRC also functioned to ensure community participants were language-related decision-makers (Hornberger, 1996; Lewis et al., 2016; McCarty, 2018a), “where this project allowed us to focus on what we wanted” (Online survey respondent, 20/12/21).

5.5.2 Immersive, place-based Anishinaabe language education policy

The CBLP *TEK-nology* pilot project highlights the importance of making language learning a priority. The analysis indicates that technology-enabled CBLP enabled a space, or virtual language planning community (Tollefson, 2017) for “ideological clarification” (Kroskrity, 2004), where participants shared strategies and thoughts on Anishinaabe language education. Participants indicated that there is a need to change the “frame of thought” (Belleau, 2021, personal communication) and “state of thinking” (B. Nolan, 2021, personal communication) which privilege dominant languages, such as English or French, and influence local language-making decisions and language shift (Phyak, 2021). Phyak (2021) elaborates, “it is important to engage language-minoritized communities in dialoguing about the impacts of dominant language policies in their communities” (p. 230). All participants stressed the strengths of the relationships between Anishinaabemowin and the land. In contrast to acquiring or learning dominant or non-endangered languages, ILA is place-based and a process that is inseparable from the land,

culture, community, and worldview (Chiblow & Meighan, 2021; Hammine, 2020).

Intergenerational language *and* knowledge transmission in the local family-school-community nexus is crucial for ILA and CBLP (Corntassel, 2008; McCarty, 2018a; McCarty, 2021).

Indigenous languages transmit highly specialized place-based knowledges, such as Traditional Ecological Knowledge (TEK) and unique medicinal knowledge (Absolon, 2011; Cámara-Leret & Bascompte, 2021; Geniusz, 2009). Indigenous-language immersion (ILI) is the most effective approach to ensure transmission of place- and land- based knowledge alongside language (McCarty, 2018b, 2021). The fluent speaking Elder on the project underscored that “immersion is the way to go” (B. Nolan, 2021, personal communication). Equally as important in Indigenous language education is contesting and counteracting dominant language hierarchies of prestige where Indigenous languages can be relegated to informal language domains and viewed as *only* “marginal” or “local” languages (Liddicoat, 2013). It is necessary for Indigenous languages to be present in formal language domains, such as education, government, and media *alongside* intergenerational transmission in the family and community (May, 2000). Reclaiming place names and making street signs in Anishinaabemowin was given as a suggestion for “collective community learning and to inspire people” (J. Chiblow, 2021, personal communication) to acquire the language. Reclaiming place names and making street signs could raise the status of Indigenous and minoritized languages through “prestige planning” so that “members of the targeted speech community develop a positive attitude toward it” (Kamwangamalu, 2016, p. 158). Participants shared additional strategies to raise the status of the language within the community and beyond, such as the requirement of Anishinaabemowin for jobs (D. Nolan, 2021, personal communication) and a fully immersive Anishinaabemowin school, inspired by the success of parent and community pressure for French immersion (B. Nolan, 2021, personal

communication). As Meades, Pine, and Broad (2019), who researched the regional labour market for Anishinaabemowin, remark, “Indigenous language training is not a frill, but an integral part of meeting the labour force demands of Indigenous communities” (p. 59).

The CBLP *TEK-nology* pilot project has implications for status and acquisition language planning (Cooper, 1990; Kaplan & Baldouf, 1997, 2003) and more equitable and culturally responsive LPP and education that centres Indigenous Peoples, languages, and their communities. CBLP using *TEK-nology* expands the critical sociocultural paradigm of LPP (McCarty & Warhol, 2011); exemplifies further praxis-driven, technology-enabled CBLP research (McCarty, 2018); and illustrates how the engagement of Indigenous and language minoritized communities in LPP (Phyak, 2021) can inform more equitable language policy through “culturally grounded contexts of praxis” (May, 2021). The analysis illustrates that Anishinaabe community members on the *TEK-nology* pilot project are the language-related planners and decision-makers (Lewis et al., 2016; McCarty, 2018a). Anishinaabe community members decide what language is and means for them and center their own community needs rather than externally defined or set goals, such as grammatical fluency (Leonard, 2017) or a digitally “thriving status” (Kornai, 2013).

Ketegaunseebee is one example of an Indigenous community within the Anishinaabek Nation and of the great linguistic and cultural diversity in Indigenous Nations and communities across Turtle Island (Siebens & Julian, 2011; Statistics Canada, 2017). The Anishinabek Nation is a “political advocate for 39 member First Nations across Ontario...[it] is the oldest political organization in Ontario and can trace its roots back to the Confederacy of Three Fires, which existed long before European contact” (Anishinabek Nation, 2020, para. 1). Given the vast diversity of Indigenous communities across Turtle Island, a 10-year territorial language strategy

in Robertson Huron Treaty territory (see Figure 5.1 below) was suggested in our LRC (S. Chiblow, 2021, personal communication) as one way in which CBLP could be developed into broader, wider-ranging culturally and environmentally responsive LPP and self-determined Anishinaabe language education policy. Territorial language strategies have implications for the implementation of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). In Canada, UNDRIP received Royal Assent on 21 June 2021. The UNDRIP Act ensures Canadian federal laws reflect the standards set out in the Declaration, while also respecting Aboriginal and Treaty rights recognized and affirmed in the Canadian Constitution. While one of the main goals of UNDRIP is to support Indigenous Peoples' right to self-determination, its provisions are non-binding for all levels of government and allow nation-states to adopt a "minimalist approach" (Tollefson & Tsui, 2004, p. 6). For example, *Bill C-91: Indigenous Languages Act*, which came into force in 2019 to support the efforts of Indigenous peoples to reclaim, revitalize and strengthen Indigenous languages in Canada, "amounts to nothing more than an aspirational policy statement... with no specific Indigenous language rights and no corresponding positive obligations on the Government to implement those rights" (Fontaine et al., 2019, p. 3). And more recently, in Québec, Bill 96 received assent and became law on June 1 2022. Bill 96 forbids provincial government agencies, municipalities, and municipal bodies in Québec from making use of languages other than French and damages reconciliation efforts with Indigenous Peoples (Serebrin, 2022).

A territorial language strategy for Robinson Huron Treaty territory could inform, facilitate, and enable the enactment of a dynamic "territorial language principle" decided by the Anishinabek Nations of that territory and its language dynamics (Kymlicka, 2001; Morales-Gálvez, De Schutter, & Stojanović, 2022). A territorial language principle "grants language

rights that are limited to a particular territory in order to ensure the maintenance of a particular language in that area” (May, 2018, p. 246). A dynamic territorial language principle—informed by a territorial language strategy such as that identified as part of our LRC and CBLP using *TEK-nology*—can inform more equitable self-determined language education, planning, policy, and legislation for Indigenous Peoples’ (linguistic) human rights and the implementation of the UNDRIP Act in Canada, currently in its Action Plan stage until mid 2023.

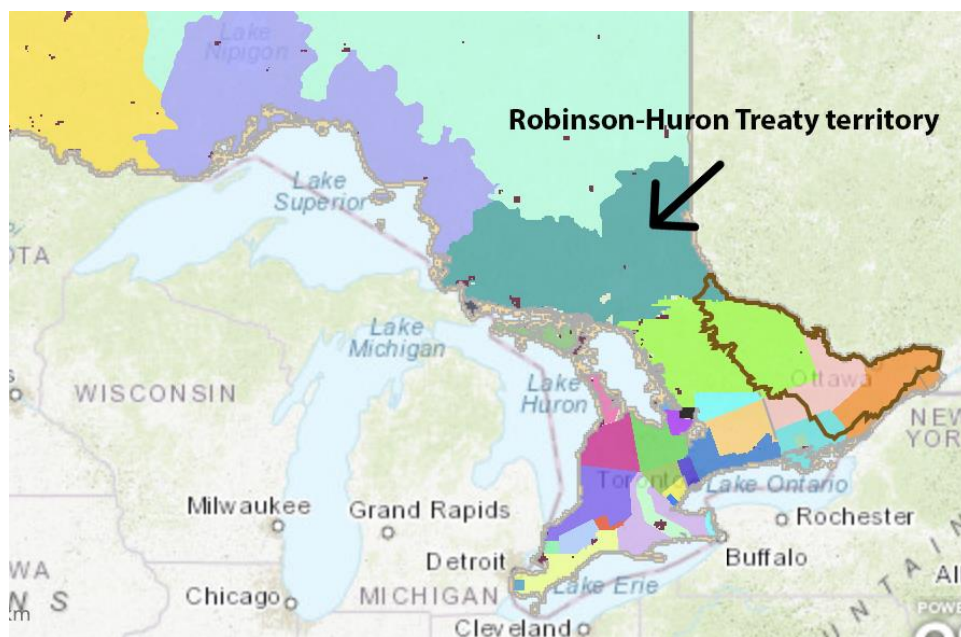


Figure 5.1: Robinson-Huron Treaty Territory

5.5.3 Strength-based and self-determined community-based language planning

Transmission of conversational knowledge is crucial for ALRR and ILR (Assembly of First Nations, 2019). An important study with Indigenous communities in British Columbia reported that, “youth suicide rates effectively dropped to zero in those few communities in which at least half the band members reported a conversational knowledge of their own “Native” language” (Hallett et al., 2007, p. 1). The analysis indicates that the CBLP *TEK-nology* videos can support

learning and intergenerational transmission of conversational Anishinaabemowin among community participants and beyond. The *TEK-nology* videos can enable the fluent Elder to reach more people and foster accessible communities of practice on- and off- reserve (Toth, Smith, & Giroux, 2018).

Participants stressed the strength of the connections between Anishinaabemowin, culture, community, and identity. Monolingual and monocultural English education is not sufficient (K. Bell, 2021, personal communication). Due to the devastating and ongoing impacts of colonization, such as residential schools, reclaiming an Indigenous language can be a traumatic and complex process (Wesley-Esquimaux & Smolewski, 2004). ALRR is a means to “strengthen one's identity...[and] get a piece of yourself back” (B. Nolan, 2021, personal communication). Participants also commented that teachings in the language come from the land. The land is “a data source, a teacher, and spiritual guide” (McGregor et al., 2018, p. 116). Phyak & De Costa (2021) underscore, “Indigenous language education extends beyond language-centric perspectives and includes the reclamation of identity, power, and epistemologies of self-determination” (p. 293). The participants on the *TEK-nology* CBLP project demonstrate that there are self-determined community- and context- specific factors that can support ALRR, language transmission, motivation, and progress. I define these factors as *strength-based language indicators*. *Strength-based language indicators* go beyond mainstream standardized tests, linguicism (Spolsky, 2014), or dominant language categorizations, such as fluent, intermediate, and/or beginner, to include strength-based processes, such as cultural reclamation, language and community pride, and conversational knowledge (Hallett et al., 2007; Leonard, 2012, 2017; Truth & Reconciliation Commission, 2015). Participants indicated, for example, that listening to, or understanding Anishinaabemowin is a motivating and important factor (S.

Chiblow, 2021, personal communication) and that progress and deeper understanding can take place “without having to be grammatically correct” (S. Nolan, 2021, personal communication). Elder Barbara stressed that “I don't force them to speak the language, they will speak the language when they are comfortable” (B. Nolan, 2021, personal communication). Wesley Leonard's (2017) language reclamation framework emphasizes the “cultural, historical, ecological, and spiritual contexts that underlie the way a community defines its language” (p. 17). Language reclamation, and ALRR, “is thus a type of decolonization” (Leonard, 2017, p. 18).

The implications of the CBLP *TEK-nology* pilot project are important for enacting more equitable LPP to address historical and structural inequalities (Tollefson, 1991), “cognitive imperialism” (Battiste, 2013), and “epistemological racisms” (Kubota, 2020). In the Canadian context, the Truth and Reconciliation Commission Report (2015) lists 94 Calls to Action to redress the legacy of residential schools and advance reconciliation. The report stresses the need for mainstream educational reform and increased governmental funding for long-term, community-led and -based ILR and ALRR initiatives, such as CBLP. As highlighted previously, Bill C-91 does not meet the challenge of creating more initiatives that are controlled by the Indigenous language communities they deem to serve. CBLP using *TEK-nology* can help address this imbalance and inform more equitable LPP. At a home, family, and community micro- and meso- level, the *TEK-nology* pilot project could serve as a model for more self-determined CBLP initiatives in Turtle Island and across the globe during the current United Nations International Decade of Indigenous Languages (2022-2032) and beyond. At a macro-level, majority language planning and policy decision makers, such as in the case of English or French in the Canadian context, could adopt and fund more community-based or territory-based language planning initiatives, such as the *TEK-nology* pilot project, to foster more ethical, pluralistic, and equitable

nation-state language policies (May, 2018). Cornthassel (2008) underscores, for “substantive decolonization and community regeneration to take place. . .the identification and implementation of nonstate, community-based solutions should take precedence” (p. 121). The community-led, culturally-grounded, context-specific strategies, pedagogies, approaches, creations, and recommendations identified as part of the CBLP *TEK-nology* pilot project can:

- (1) inform future policy and legislation decisions at a territorial, provincial, federal, and national level
- (2) enable full implementation of UNDRIP
- (3) improve relationships with nation-states, and
- (4) ensure the full recognition of the inherent rights of Indigenous Peoples, including Treaty rights.

5.5.4 Limitations and future directions

More research and funding are required to develop the *TEK-nology* approach and the videos on a larger scale. Some respondents on the online survey remarked that more videos could be made, with more content and activities for diverse age ranges. The project relied on one fluent Elder to lend her expertise as one of the few language and knowledge keepers. The process of creating immersive videos takes significant effort and time, from scripting, coaching learner-speaker participants, to filming, recording, translating, and transcribing. Further research would require more funding going forward to ensure the Elder and the process is appropriately supported.

Elder Barbara suggested in our last focus group that we apply as an ad-hoc committee for funding to carry out a year-long project to further support community-led and -based ALRR.

This funding could enable us to hire a community-based team to support and finance equipment, translations and transcriptions, video making, and more in creating immersive Anishinaabemowin learning videos based on traditional seasonal activities in Ketegaunseebee and the surrounding territory. Building on the CBLP *TEK-nology* pilot project in this way, by branching out more into the wider community over a longer period of time, could help strengthen inter- and intra- community capacity and support ALRR at a territorial level.

5.6 Conclusion

The *TEK-nology* pilot project is an example of Indigenous community-based language planning (CBLP) conducted entirely through digital and online technologies with implications for status and acquisition planning. A group of family and family friends designed and co-created a series of language learning videos for Anishinaabemowin language reclamation and revitalization (ALRR) from scratch during the COVID-19 pandemic. The *TEK-nology* pilot project demonstrates how Indigenous-led, praxis-driven CBLP, using a technology-enabled Indigenous language acquisition approach, can support ALRR, more equitable language planning and policy (Phyak, 2021), and “culturally grounded contexts of praxis” (May, 2021).

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Chapter 6: Discussion and Conclusion

This manuscript-based thesis has explored the role of relational technology, strength-based language education, and community-led language planning and policy research for Indigenous language revitalization and cultural reclamation.

In this thesis, I propose and illustrate the potential of the *TEK-nology* (Traditional Ecological Knowledge and technology) approach to support community-led Indigenous language revitalization and cultural reclamation processes. The purpose of the *TEK-nology* pilot project is to explore the practical application of a self-determined, technology-enabled language and knowledge acquisition approach rooted in Indigenous educational philosophies and worldviews (Blair, Pelly, and Starr, 2018; Government of Canada, 2018; Truth and Reconciliation Commission, 2015). This research explores the impact and implications of self-determined, community-led, and community-defined language processes and the role of technology in those contexts.

The research objectives were to investigate (1) the potential and impact of grounding language acquisition and knowledge transmission in Indigenous worldviews, decolonial technology use, and strength-based language acquisition indicators; 2) ways in which researchers who are not Indigenous to the lands on which they work can collaborate in a more ethical and mutually beneficial manner with Indigenous Peoples and communities; and (3) ways in which federal and provincial language education planning and policy could be improved to address inequities and marginalization of Indigenous Peoples in the educational system.

In response to these objectives, this thesis offers three primary original contributions to the field of language education and language planning and policy at three interconnected and interdisciplinary levels of analysis: (1) *TEK-nology* as a language acquisition and knowledge

transmission approach; (2) Dùthchas as kincentric methodology for community-led research in-relation praxis; and (3) *TEK-nology* as online community-based language planning. As process and praxis, the *TEK-nology* pilot project has introduced and been implemented as a language acquisition *approach*, a research co-creation and in-relation *methodology*, and a *method* for an online, self-determined ideological and implementational language planning space. In this concluding Chapter, I will discuss these three contributions, overarching themes, implications for more equitable language education, research, and policy, and future directions.

6.1 *TEK-nology* as a language acquisition and knowledge transmission approach

The first research objective was to explore the potential and impact of grounding language acquisition and knowledge transmission in Indigenous worldviews, decolonial technology use, and strength-based language acquisition indicators. In this section, I will demonstrate how *TEK-nology* as a language acquisition and knowledge transmission approach addresses this research objective.

A self-determined approach centring the local Indigenous community, land, knowledge system, and worldview is crucial to address colonial incompatibilities, inequities, imbalances, and injustices that have caused language loss and shift. Conceptual and theoretical frameworks currently and mainly used in mainstream western education continue to privilege eurocentric ways of knowing and being which are in stark contrast to Indigenous lifeways (Buendia, 2003; Meighan, 2022b). Moreover, the relational connection of language and place “is not a primary language objective in many English and world language classrooms” (Engman & Hermes, 2021, p. 104). Hermes (2005) quotes an Ojibwe Elder saying, “We are currently teaching Ojibwe language through English thought...Everything in English is taken out of context. Everything

taught about Indians taken out of context is really in English—or in that way of thought” (p. 50). In Chapters 4 and 5, the *TEK-nology* pilot project participants corroborate this statement. The analysis demonstrates that Indigenous language acquisition processes must be grounded in Indigenous worldviews. Elder Barbara Nolan, a fluent Anishinaabemowin speaker and Anishinaabek Nation Language Commissioner, remarked, “We’re too much in the English way of saying things” (personal communication, 2021).

Contributing factors to language loss and shift include: (1) the need for a community-led pedagogical approach which addresses specific sociocultural, linguistic, and emotional needs (Hough et al., 2009; Olthuis et al., 2013; Skutnabb-Kangas & Heugh, 2012); (2) the lack of resources, as many ILR initiatives have to create materials from scratch (McIvor, 2020), are vastly underfunded (Pitawanakat, 2018), and the few fluent speakers involved with them are over 60 years of age (Littlebear, 2007); (3) trauma barriers to Indigenous language acquisition, or “historic trauma transmission” (Wesley-Esquimaux & Smolewski, 2004), since reclaiming a language taken through genocide and linguicide can be a traumatic and complex process; and (4) the importance of immersion in the Indigenous language and an ecocentric and kincentric worldview (Stacey, 2016), where culture, language, and teachings can be learned on the land and holistically (Daniels, Sterzuk, Turner, et al., 2021). Considering these factors and to address the first research objective, I proposed and introduced an immersive, community-led Indigenous language acquisition approach—*TEK-nology* (Traditional Ecological Knowledge (TEK) and technology)—to support Anishinaabemowin language revitalization and reclamation in the Canadian context. Indigenous language acquisition is different from field of second language acquisition in that the “teaching and learning of endangered [Indigenous] languages comprise

features and needs that are different from the teaching and learning of majority or foreign languages” (Hammine, 2020, p. 304; see also Lukaniec & Palakurthy, 2022).

The *TEK-nology* language acquisition approach is an original contribution to knowledge in the field of language education. It is a process-based, relational approach which places an importance on: (1) community language definitions and practices (Leonard, 2011, 2019); (2) the inseparability of Indigenous *languages* and unique land- and place- based *knowledges* (Cámara-Leret, 2021; McGregor, Restoule, & Johnston, 2018); (3) elevating the prestige of Indigenous languages in the eyes of the communities and speakers themselves (Kroskrity & Field, 2009, May, 2014; Phyak, 2021); and (4) reclaiming cultural and linguistic pride (Meissner, 2019; Pitawanakat, 2018). This process-based, relational approach stresses the importance of Indigenous culture and knowledge reclamation alongside Indigenous language revitalization (Leonard, 2011).

To further demonstrate the potential and impact of *TEK-nology* as a language acquisition and knowledge transmission approach, I identify two overarching themes from the thesis and exemplify their implications: (1) *relational technology* and (2) *strength-based Indigenous language acquisition*.

6.1.1 Relational technology

Technology is not neutral and is the extension of the knowledge and belief system which has led to its creation. To undertake a more holistic and nuanced assessment of technology’s social impact on Indigenous language revitalization and reclamation, it is crucial to understand who is enacting technology and for whom. In this thesis, I explored how technology can be part of an “extended ecology” (Steffensen & Fill, 2014) and an extension of Indigenous worldviews as

opposed to an extension of the dominant western worldview which can further appropriate Indigenous knowledges and languages into the neoliberal capitalist agenda (Adam, 2019; Schwab-Cartas, 2018; Hermes, Bang & Marin, 2012; Kukutai & Taylor, 2016).

Technology use that is implemented through a western, non-Indigenous worldview can perpetuate harmful colonial practices on the digital landscape. Social media and the Internet can have drawbacks and significant negatives, such as cyber bullying, cyber racism, cellphone and social media addiction, and colonial appropriation of Indigenous knowledges which could further marginalize and harm Indigenous communities (Rice, Haynes, Royce, & Thomson, 2016; Wagner & Fernandez-Ardevol, 2019). On the other hand, social media and the Internet—for example, through Twitter, YouTube, and Facebook groups—can empower and have enabled Indigenous Peoples to mobilize on vital issues, such as treaty rights and water protection (Carlson & Berglund, 2021; Carlson & Frazer, 2021; Duarte, 2017; Raynauld, Riches, & Boudreau Morris, 2017). There may also be scepticism from some Indigenous Peoples regarding technology. Some Elders may view technology as a negative that is corrosive and antithetical to Indigenous ways of life and culture (Castleton, 2018). As discussed in Chapter 1, this view is understandable given the history and destructive impact of eurocentric beliefs and “colonial logic”. For example, debating treaty rights if communities use non- “pre-contact” modern technology to fish (see also, *Lax Kw’alaams Indian Band vs. Canada [Attorney General]*, 2011) and forms of neoliberalism and capitalism, such as surveillance technology or data mining, which can continue disprivilege and appropriate Indigenous ways of knowing and being into the dominant western knowledge system. Winter and Boudreau (2018) remark that the scepticism could be because of “apprehension towards technologies (such as the camera) yielded by European hands, not the technologies themselves” (p. 46). For these reasons, technology-enabled

Indigenous language revitalization *must* be rooted in Indigenous worldviews and answerable to community dynamics, needs, and protocols. Technology is not neutral nor a panacea and can have positive or negative impacts, depending on which worldview or knowledge system is extended, who is using it, how it is implemented, and for what purpose. The analysis in Chapter 4 demonstrates that technology's role and utility can vary and it "would really fall on the person, the individual, to make sure that they're building those in-person connections" (J. Chiblow, personal communication, 2021).

In Chapter 2, I demonstrate how Indigenous Peoples have moved beyond being recipients of digital information to being digital negotiators and digital creators. Indigenous digital creators counteract negative and western (colonial) stereotypes, such as the "Ecological Indian" (Krech, 2000), which view Indigenous Peoples as being confined to a very specific timeframe in the past (Boudreau & Morris, 2018). Eurocentric binary stereotypes like this perpetuate the "museological context" (Carpenter et al., 2017) which categorizes and broadstrokes Indigenous People into false dichotomies, such as "traditional" as opposed to "modern", and facilitates a western exploitation and "conquest" of the digital world. Carpenter et al. (2017) remark, "articles and reports usually focus on technology rather than on the *use, community or relationships* that underwrite a language context, and thus perpetuate a form of technological determinism that is unnuanced and unhelpful" (emphasis added, p. 17). The analysis in Chapters 3, 4, and 5 exemplifies how participants on the *TEK-nology* pilot project and research co-creation are digital negotiators and creators as part of a language revitalization committee (LRC). The analysis demonstrates how Indigenous-led technology use can create an online language planning community and be an extension of existing intergenerational and kincentric relationships.

Indigenous Peoples should not be relegated to the past as only being traditional. L'Hirondelle (2016) underscores that Indigenous Peoples possess “pre-contact ingenuity as inventors and technologists” and gives the examples of documentary technologies, such as pictorial calendars on tipis and skins, beadwork, and wampum belts (see also Haas, 2008). The digital divide, despite still needing improvements in physical and non-physical access and equitable representation, begins to narrow as more Indigenous Peoples, even in remote areas, have access to a cellphone and use it to interact and communicate (Carpenter et al., 2017; Jany, 2018; Molyneaux et al., 2014; Pulla, 2015). Today, as exemplified in this thesis and the *TEK-nology* pilot project, Indigenous Peoples continue to be “Producers” (Kelly-Holmes, 2019) of Indigenous technological content which helps counteract “colonial assertions about the incompatibility of Indigenous ways of knowing and technology [which] have been used to delegitimize claims to land in the past” (Winter & Boudreau, 2018, p. 42). Jason Lewis, co-founder of Aboriginal Territories in Cyberspace and the Initiative for Indigenous Futures, remarks, “If you are not present in the future imaginary of the dominant culture – you’re in trouble – that means that they don’t imagine you in the future ... So, we have to start proposing images of who we are and where we’ll be” (quoted in Winter & Boudreau, 2018, p. 39; see also Lewis, 2016). The analysis in Chapters 4 and 5 illustrates how community members propose images of who they are as Anishinaabe and the role of technology in the Indigenous language acquisition and knowledge transmission process.

To further counteract colonial assertions and determinations about technology, in Chapter 4 I introduce the term *relational technology*. I define *relational technology* as technology that is in-relation and accountable to the Indigenous community. I argue that technology use that is responsive to the specific contexts and ecologies of the local Indigenous community can foster

more ethical relationships and “relational language technologies” (Taylor et al., 2019, p. 3511) going forward. *Relational technology*, at every stage, is an extension of an Indigenous knowledge system and is accountable to and led by the Indigenous community in accordance with their values, goals, and protocols (Meighan, 2021b). To ensure this, the *TEK-nology* research co-creation process was led by the LRC and the ultimate evaluation and assessment of the language videos were subject to LRC and Elder peer review and member checking, which served as a form of validity. The language and content ideas for the videos emerged from the LRC focus group meetings in which I was an active participant. The video co-creations were part of an emergent process in which community voices and needs were centered and their collective consent and approval were required. These processes provided a form of validity and a way of “reporting back” to Indigenous community members (Smith, 2021, p. 16).

I conceptualized the *TEK-nology* approach to be action-oriented, ecocentric, and reflective of and responsive to Indigenous ways of knowing and being. Indigenous methodologies stress “the assumption that knowledge gained will be utilized practically” (Hart, 2010, p. 9) and accountability to the community and all human and more than human relations for collective, beneficial capacity building (Le & Gobert, 2015; Wilson, 2001). As illustrated in Chapter 2, technology continues to be “decolonized” (Adam, 2019) and “Indigenized” (Zaman, Kulathuramaiyer & Yeo, 2015) with voices, expertise, and creations that have been developed by Indigenous Peoples and communities for their own needs and for their own purposes (Smith, 2021). There are more Indigenous “technologists using technological tools as a path to self-determination” (Gilpin, 2019). The *TEK-nology* pilot project and the analysis demonstrate that *relational technology* is an extended ecology of existing land-based relations as opposed to an extension of (digital) settler colonialism and capitalism which further appropriates Indigenous

expertise, knowledges, and languages (Caranto-Morford & Ansloos, 2021; Haas, 2008). The *TEK-nology* videos can enable the fluent Elder to reach more people and foster accessible communities of practice on- and off- reserve (B. Nolan, personal communication, 2021; Toth, Smith, & Giroux, 2018).

Implications

Relational technology, such as the *TEK-nology* pilot project, has implications for future uses of technology and can inform future technology-enabled Indigenous language revitalization and reclamation initiatives. Many more Indigenous communities and Peoples, especially during the COVID-19 pandemic, have been using digital and online technologies to sustain and continue important initiatives (e.g., McIvor, Sterzuk, & Cook, 2020; McIvor, Chew, & Stacey, 2020). How technology is used now and going forward is therefore even more relevant. *Relational technology* ensures technology use is decolonial, an extension of Indigenous knowledge systems and worldviews, and is accountable to and led by the local Indigenous community in accordance with their values, goals, needs, and protocols at all times. *Relational technology* seeks to safeguard against capitalistic digital and online technologies which can further appropriate Indigenous knowledges and compromise Indigenous Data Sovereignty (Kukutai & Taylor, 2016). *Relational technology* ensures language acquisition and knowledge transmission is responsive to specific local community contexts and ecologies. The Indigenous community, as in the case of the LRC on the *TEK-nology* pilot project, decides how technology is used for language acquisition, informs the relationship between technology and community members, and controls which knowledges are shared and with whom.

6.1.2 Strength-based Indigenous language acquisition

Contributing factors to Indigenous language loss and shift, both inside and outside the mainstream school context, stress the need for a strong, community-led, accessible, emotionally, environmentally, and culturally responsive Indigenous language acquisition approach to address colonial imbalances and injustices.

Mainstream western pedagogies have limitations for Anishinaabemowin language revitalization and reclamation and can perpetuate deficit colonial and neoliberal ideologies (Battiste, 2013; Hinton, 2013; McIvor & McCarty, 2017; Sarkar, 2017). Acquiring Indigenous languages is very different from acquiring dominant, non-endangered languages (Hammine, 2020; Lukaniec & Palakurthy, 2022). Indigenous language acquisition (ILA) is holistic, embodied, and includes the more than human. The analysis in Chapters 4 and 5 indicates that, in contrast to acquiring or learning dominant or non-endangered languages, ILA is place-based and a process that is inseparable from the land, culture, community, and worldview (Chiblow & Meighan, 2021; McGregor, Restoule, & Johnston, 2018). Participants go beyond viewing language as a decontextualized, disembodied code or commodity (Meighan, 2021a) for human-to-human contact or communication. Language animacy in Anishinaabemowin, emphasizing a dynamic, interconnected “vital essence...in all things” (Johnston, 2011, p. 89) beyond a western animate-inanimate binary, was highlighted by participants as a key distinguishing feature of Anishinaabe land-based learning, governance systems, relationships, and the Anishinaabeg worldview (Absolon, 2011; Geniusz, 2009; Johnston, 2011). Participants commented that teachings, concepts, and words in Anishinaabemowin come from the land. The land is “a data source, a teacher, and spiritual guide” (McGregor et al., 2018, p. 116).

The kincentric and relational approach I adopted for the *TEK-nology* project, based on existing intergenerational relationships and friendships, enabled a safe “ideological and implementational space” (Hornberger, 2005) to share more community-led strategies for ILA and Anishinaabemowin language revitalization and reclamation. Elder and Anishinabek Nation Language Commissioner Barbara Nolan identified “teaching concepts, not words...to get the message across” (B. Nolan, 2021, personal communication) as a key process for immersive ILA that is culturally, emotionally, and environmentally responsive. In Chapter 4, I describe and name this process *concept-based ILA*. Teaching concepts accommodates more learning differences. For example, sign languages encode concepts into signs, not words (Borgi et al., 2014). Participants also underscored that humour and storytelling are vital for engaging learners in immersive, technology-enabled and concept-based ILA (Archibald, 2019; Johnston, 2011). The analysis demonstrates that concept-based language acquisition helps convey meaning more easily and engages learners more through the addition of visual-manual modalities, such as the use of laughing emojis, facial expressions, and gestures in the immersive *TEK-nology* videos. The *TEK-nology* language acquisition and knowledge transmission approach therefore sought, and seeks to: (1) underscore “Land as interlocutor” (Engman & Hermes, 2021, p. 101) and “language materiality”³² (Siragusa & Virtanen, 2021); (2) embrace a range of “semiotic repertoires” (Kusters, Spotti, Swanwick & Tapio, 2017); (3) focus on holistic action and meaning making; (4) centre humour and storytelling; and (5) incorporate image, text, emojis, gestures, facial expressions, speech, posture, and the environment.

³² “Language materiality takes into account other-than-human actors and indicates in what ways language practices—as an expression and a mode of experiencing relations between human and other-than-human agencies—are highly intertwined with the material world and how diverse people dwell in and with it” (Siragusa & Virtanen, 2021, p. 2).

Due to the devastating and ongoing impacts of colonization, such as residential schools, reclaiming an Indigenous language can be a traumatic and complex process (Wesley-Esquimaux & Smolewski, 2004). In Chapter 5, I propose and introduce *strength-based language indicators* to address western and colonial imbalances, incompatibilities, and epistemic injustices. I define a *strength-based language indicator* as an expression of a language speaker or learner's self-defined strengths and their own sense of progress during the Indigenous language reclamation and revitalization process. A *strength-based language indicator* is a way to counteract reductive, deficit fluency scales or markers based on western and dominant language acquisition models. Measuring fluency in an endangered Indigenous language using western lexicogrammatical teaching methods and comprehension tests, assessments, or exams does not account for the complexities of reclaiming and revitalizing a language which has been disprivileged or been subjected to genocide (Truth and Reconciliation Commission, 2015) or linguicide (Skutnabb-Kangas & Phillipson, 1996) in western, eurocentric schools, such as residential schools. The analysis demonstrates that monolingual and monocultural English education is not sufficient (K. Bell, 2021, personal communication). Participants stressed the strength of the relationships and connections between Anishinaabemowin, culture, community, land, and identity that must be maintained for Anishinaabemowin language revitalization and reclamation.

Strength-based language indicators encompass the emotional, the environmental, the physical, and the cultural elements of Indigenous language revitalization and cultural reclamation. *Strength-based language indicators* include, but are not limited to, conversational Indigenous language knowledge, well-being, healing, pride, and improved relationships with self, land, environment, fellow humans and more than humans. Indigenous language proficiency and progress is therefore viewed more holistically and as more of a *process* in contrast to western

understandings, assessments, and external measurements of progress or “results”. The First Nations Information Governance Centre (2020) in their publication *Strengths-based approaches to Indigenous research and the development of well-being indicators* remarks, “strengths-based approaches focus on identifying and supporting the various strengths, motivations, ways of thinking and behaving, as well as the protective factors—within the person or the environment—that support people in their journeys toward well-being” (p. 7). In Chapter 4, participants on the *TEK-nology* project demonstrate that there are self-determined, community- and context-specific *strength-based language indicators* that can support Anishinaabemowin language revitalization and reclamation, acquisition and knowledge transmission, motivation, and progress. Participants indicated that being able to listen along and understand Anishinaabemowin is a motivating and important factor (S. Chiblow, 2021, personal communication) and that progress and deeper understanding can take place “without having to be grammatically correct” (S. Nolan, 2021, personal communication). Elder Barbara stressed that “I don't force them to speak the language, they will speak the language when they are comfortable” (B. Nolan, 2021, personal communication).

Implications

Strength-based language indicators have implications for future Indigenous language revitalization and reclamation initiatives, the teaching of Indigenous languages, majority languages with colonial legacies, such as English, and more equitable multilingual and multicultural language education, research, and policy. *Strength-based language indicators*, as part of the *TEK-nology* approach, center the experiences, needs, perspectives, and existing

knowledges that a learner or speaker of an Indigenous language has. The First Nations Information Governance Centre (2020) states,

Strengths-based approaches to research have specific relevance to understanding and promoting health and well-being in Indigenous contexts. The attention to social, cultural, and ecological factors highlighted in these approaches are consistent with philosophies of living a good life found in many Indigenous cultures. While traditional philosophies and current ways of life vary across Indigenous peoples, an emphasis on recognizing and respecting the interrelations between all aspects of the person, the community, and the environment is found at the heart of Indigenous knowledge and values in many different cultures and communities. (p. 7)

In Chapters 4 and 5, I illustrate how the *TEK-nology* language acquisition and knowledge transmission approach can support Indigenous language speakers and learners by moving beyond decontextualized western learning objectives and embodying the “cultural, historical, ecological, and spiritual contexts that underlie the way a community defines its language” (Leonard, 2017, p. 18). The *TEK-nology* approach centres community needs rather than externally defined or set goals, such as grammatical fluency (Leonard, 2017) or a digitally “thriving status” (Kornai, 2013, p. 1). Leonard (2017) calls this a framework of “language reclamation” which “centers community definitions of language at every stage, and thus prioritizes Indigenous needs and ways of knowing in the academic research, language pedagogies, and other work that underlie a given community’s language efforts” (p. 18).

The analysis in Chapters 4 and 5 indicates that the *TEK-nology* approach can support learning and intergenerational transmission of conversational Anishinaabemowin among participants and beyond. Participants stated they learned new words and phrases during the project and were motivated to learn more. To further support intergenerational transmission and ILA, Elder Barbara stressed the need to address “thinking English” by “decolonizing our language” (B. Nolan, personal communication, 2021). That is, what is “correct” and what is “wrong” in ILA and Anishinaabemowin language revitalization and reclamation is community and context dependent and should not be determined or measured by external standards or forces (Leonard, 2017). The Indigenous language, not English or another dominant language, should be the primary transmitter of knowledge and be at the center of the language acquisition process to ensure we are not “force fitting” Indigenous languages and knowledges “into an English way of expressing thoughts” (Mary-Ann Corbiere, as cited in Pitawanakat, 2018, p. 465). ILA is not “one-size-fits-all”; ILA is place-based and community-centered, where language, land, culture, and identity are inseparable (Leonard, 2017; McGregor, 2004). Phyak & De Costa (2021) underscore, “Indigenous language education extends beyond language-centric perspectives and includes the reclamation of identity, power, and epistemologies of self-determination” (p. 293).

Strength-based language indicators, concept-based language acquisition pedagogies, linguistically unique Indigenous knowledges, and the relational and embodied connection of language and place (Engman & Hermes, 2021) can inform more equitable, culturally, environmentally, and emotionally responsive language education. The *TEK-nology* approach can inform federal, provincial, and family language policy by addressing deficit-based approaches and colonial ideologies (FNIGC, 2020; Meighan, 2022b) and focusing instead on strength-based

approaches that center Indigenous and minoritized speaker communities, their expertise on language, and their sociopolitical and ecological realities.

6.2 Dùthchas as kincentric methodology for community-led research in-relation praxis

The second research objective of this thesis was to explore ways in which researchers who are not Indigenous to the lands on which they work can collaborate in a more ethical and mutually beneficial manner with Indigenous Peoples and communities. In this section, I will demonstrate how Dùthchas as kincentric methodology for community-led research in-relation praxis addresses this research objective.

Disrupting traditional, western concepts of what counts as research and knowledge is fundamental, especially for Indigenous contexts where the academy has exploited Indigenous knowledge systems through unethical collaboration and has dismissed their holistic approaches to knowledge as “primitive”. In Indigenous research, worldview matters (Absolon, 2010; McGregor, Restoule, & Johnston, 2018). Worldview directly impacts the researcher, the research process, and the research methodology chosen (Absolon, 2010). A key principle valued and shared by Indigenous Peoples and communities is that of a relational onto-epistemology which values the interconnectedness of all human, nonhuman, and more than human entities (Held, 2019). Centring holistic Indigenous ways of knowing and being—such the inseparability of land, culture, and language identified in the analysis and throughout this thesis—in any research paradigm when collaborating with Indigenous Peoples and communities is therefore essential.

Fostering and respecting relationships is an integral part of relational accountability (Reo, 2019; Wilson, 2001) and an ethical guideline for conducting research with Indigenous Peoples. Relationships are an intrinsic part of the kincentric value and belief systems of Indigenous

Peoples (Salmón, 2000). Relational accountability stresses the responsibility of the researcher to maintain and foster long-lasting and accountable relationships with the community, both human and more than human (Reo, 2019; Wilson, 2001; Wilson & Wilson, 1998). As discussed in Chapter 1, one of the major incompatibilities between western and Indigenous research paradigms and worldviews is the lack of *relationality* in the former which has led to extractive, harmful research practices and a “helicopter approach” (Hall et al., 2015), where researchers arrive in communities, collect data, and rarely ever return. Indigenous paradigms always include axioms that are relational (Chilisa, 2012; Held, 2019; Louis, 2007; Wilson, 2008). Opaskwayak Cree scholar Shawn Wilson (2001) explains that knowledge is always relational in Indigenous research paradigms and emanates from profound connections between humans, nonhumans, the land, all of creation and the cosmos. Métis educator and scholar Cora Weber-Pillwax (1999) echoes the importance of relationality and interconnectedness and lists seven key principles that should be considered before implementing an Indigenous research methodology:

1. The interconnectedness of all living things,
2. The impact of motives and intentions on person and community,
3. The foundation of research as lived Indigenous experience,
4. The groundedness of theories in Indigenous epistemology,
5. The transformative nature of research,
6. The sacredness and the responsibility of maintaining personal and community integrity,
7. The recognition of languages and cultures as living processes. (p. 21-32).

Following principles of interconnectedness and relationality in methodological approaches is a non-negotiable for researchers seeking to work in an ethical and mutually beneficial manner with an Indigenous community or Nation. Mi'kmaq/Abenaki scholar Lorelei Lambert (2014) notes that this is the case for Indigenous and non-Indigenous researchers working with communities or Nations that may or may not be their own. Lambert explains that the goal of research is not to tell the community's reality, stories, nor enforce a research framework, but rather to empower the community's voice and expertise. The *TEK-nology* participants in the analysis in Chapters 4 and 5 underscore that respecting and maintaining relationality and interconnectedness is crucial for good, mutually beneficial research and technology use.

Researcher positionality and self-location are essential to work and collaborate with Indigenous Peoples and communities in an interconnected and relational way. Positionality and self-location enable the researcher to be transparent about their motives and intentions, avoid perpetuating colonialism, and build trust with Indigenous Peoples and communities so they can decide whether to consent, or refuse to participate in any research collaboration (McGregor, Restoule, & Johnston, 2018). A fundamental component of positionality and self-location is clarifying a researcher's own relationships and intersections with colonialism and embarking on a process of self-decolonization (Geniusz, 2009). In Chapter 3, I introduce and demonstrate how Dùthchas—a millennia-old Scottish Gaelic concept, worldview, and way of life—has guided my self-decolonization processes, enabled me to conceptualize and conduct research as part of a greater Anishinaabe research paradigm, Mino-Bimaadiziwin (The Good Life), and to be in-relation to lands, peoples, and kin where the research project took place.

To further illustrate the impacts and implications of Dùthchas as a methodological approach, I identify *Dùthchas as kincentric praxis* as an overarching theme.

6.2.1 Dùthchas as kincentric praxis

Indigenous scholarship stresses that everything is interconnected (Archibald, 2008; Craft, McGregor, Seymour, & Chiblow, 2020; McGregor, Restoule, & Johnston, 2018). Many western methodological approaches to research with (or on) Indigenous communities have demonstrated little to no relationality and interconnectedness. They have largely emanated from a positivist paradigm which assumes the researcher and the research can and should be “objective” and “neutral” (Colorado, 1988; Ermine, Sinclair, & Jeffrey, 2014; Leonard, 2017; Denzin & Lincoln, 2018; Meyer, 2001; Smith, 2021; Tuck & Yang, 2012). The search for “objectivity” and “neutrality”, however, severs the researcher(s) from the research interpretation and assumes that research is conducted in a vacuum (Braun & Clarke, 2021). As discussed in Chapters 1 and 3, the reason for this severance resides in hegemonic western human-centred worldview which attempts to separate emotion or “subjectivity” from “objectivity” in research and beyond. Gregory Bateson (1972), in his book *Steps to an Ecology of the Mind*, notes that this is an example of the western epistemological error since “we are most of us governed by epistemologies we know to be wrong” (p. 461). Chickasaw scholar Eber Hampton (1995) expands on the importance of acknowledging subjectivity and the role of the researcher in research:

Humans – feeling, living, breathing, thinking humans – do research. When we try to cut ourselves off at the neck and pretend an objectivity that does not exist in the human

world, *we become dangerous, to ourselves first, and then to people around us.* (emphasis added, p. 52)

To avoid being dangerous to ourselves and to people around us, it is imperative to acknowledge subjectivity exists in research. Anishinaabe scholar Nicole Bell (2019) notes, “The Medicine Wheel teaches the *balance* in all things, including research. The researcher must balance objectivity and subjectivity to ensure *integrity* in their work” (emphasis added, p. 182). The acknowledgment of researcher subjectivity, that no research or education is neutral, is crucial for addressing epistemic (in)justices towards Indigenous Peoples and colonial imbalances, incompatibilities, and inequities discussed throughout the thesis. People do research, people enact policies, people enact technology, people language. In short, imbalances and inequities are caused and perpetuated by people, not abstractions. Acknowledging subjectivity—*the who*—through researcher positionality and self-location therefore is fundamental for future research and work that seeks to be mutually beneficial, ethical, and transformative (Lin, 2015; McCarty, 2018b). The analysis in Chapters 4 and 5 demonstrates that researcher positionality, intentions, and following community- and culturally- specific protocols are essential for good research. Johnston, McGregor, and Restoule (2018) remark, positionality enables the researcher to become “‘knowable’ to research participants, thus disrupting the power dynamics inherent in conventional Western research relationships” (p. 11). The analysis illustrates how the acknowledgement of researcher subjectivity through positionality and self-location enables research participants to assess researcher credibility and influences the validity of the research and the interpretation of the whole (Johnston, McGregor, & Restoule, 2018; Smith, 2021).

As articulated throughout the thesis chapters, I self-location and position myself as a Gàidheal (re)searcher family member who is not Indigenous to Turtle Island nor from Ketegaunseebee and respectfully followed overarching Anishinaabe protocols and methodologies on the *TEK-nology* pilot research project. Unlike typical western methodologies, as Māori scholar Linda Tuhiwai Smith (2021) remarks, “Indigenous methodologies tend to approach cultural protocols, values and behaviours as an integral part of methodology...to be declared openly as part of the research design” (p. 16). I followed an Anishinaabe research paradigm—Mino Bimaadiziwin (The Good Life)—to be responsive and in-relation to the Anishinaabeg community where the research took place. Anishinaabe Mino Bimaadiziwin emphasizes a spirit-centered path to knowledge and integrates the “past, present, and future of Good and respectful approaches to life” (Debassige, 2010, p. 11) into the research process. The Anishinaabe paradigm helped ensure the research followed ethical parameters, such as the 6 Rs of Indigenous research: respect, responsibility, relevance, reciprocity, relationship, and refusal (McGregor et al., 2018) and Ownership, Control, Access, and Possession (OCAP) standards (FNIGC, 2014). OCAP standards assert that Indigenous communities maintain control over research and are recognized as knowledge holders, which is crucial for Indigenous Data Sovereignty (Duarte, 2017; Kukutai & Taylor, 2016). The analysis in Chapter 5 demonstrates that Mino Bimaadiziwin is integral to good Anishinaabe community-led research (S. Bell Chiblow, 2021, personal communication).

For the *TEK-nology* project, I followed an Anishinaabe community-led, decolonizing, participatory methodological framework, Biskaabiiyang, or “Return to Ourselves” (Geniusz, 2009). Anishinaabe scholar Wendy Makoons Geniusz, in articulating Biskaabiiyang methodology, highlights the need for the researcher to decolonize themselves to conduct

meaningful research with the Anishinaabe community. Decolonizing research and methodologies are crucial to spur forward systemic, structural, and institutional change for ethical and mutually beneficial research relationships with Indigenous and marginalized peoples and communities.

Smith (2021) explains that,

Decolonization is a *process* which engages with imperialism and colonialism at multiple levels...Decolonization, however, does not mean and has not meant a total rejection of all theory or research or Western knowledge. Rather, it is about *centring our concerns and world views and then coming to know and understand theory and research from our own perspectives and for our own purposes*. (emphasis added, pp. 22-43)

Processes are core to the *TEK-nology* approach and pilot project for Indigenous language revitalization and reclamation. Furthermore, Indigenous methodologies stress that “one seeks knowledge because one is prepared to use it” (Kovach, 2021, p. 114) and “includes the assumption that knowledge gained will be utilized *practically*” (emphasis added, Hart, 2010, p. 9). In other words, *praxis*, which I define as theory and knowledge that are continually enacted, embodied, and realized in tangible ways, is a fundamental component of good and beneficial research. As such, in Chapter 3, I introduce and operationalize *Dùthchas*—a millennia-old Scottish Gaelic concept and way of life—as (1) a guide for my ongoing self-decolonizing processes as a Gàidheal, and (2) a kincentric methodology for community-led research in-relation praxis.

Dùthchas is a Scottish Gaelic cultural conceptual tool that predates the formation of the United Kingdom and nurtures an ethical and relational relationship with place (McFadyen &

Sandilands, 2021; Mackinnon, 2011; Newton, 2019; Ní Mhathúna, 2021; Oliver, 2021). In Chapter 3, I exemplify how Dùthchas affirms dynamic and complex kincentric and land-based relationships that bond people, extended kin, and community together beyond biological ties alone (Charles-Edwards, 1993; Newton, 2019) and enabled me to foster a more personal, holistic, and respectful foundation for my researcher “self-in-relation” (Graveline, 1998, p. 52). I identify five principles: *interconnectedness*, *responsibility*, *respect*, *ecological balance*, and *kinship* to operationalize Dùthchas as a research methodology.

The Dùthchas principles informed my kincentric approach to the stages of the Anishinaabe community-led *TEK-nology* pilot project. Kinship has always been a core foundation of Gaelic social organization and networks, such as clans, and the Gaelic worldview (Newton, 2009). Kinship, also known as Càirdeas in Gàidhlig, radiates beyond the researcher and human-to-human interactions to actively consider the wider community and more than humans (MacKinnon, 2011; Newton, 2009; van Horn, Kimmerer, & Hausdoerffer, 2021; Whyte, 2020). In Chapter 3, I stress that kinship guides ethical research conduct and praxis by strengthening bonds among and responsibilities towards all entities in *every* environment and setting (Charles-Edwards, 1993; Cox, 2009; Ó Tuama, 1985; Whyte, 2021). Kinship fosters a deeper understanding of and loyalty towards a common goal to which all participants and researchers on the research journey can feel attached and accountable. In Chapters 3, 4, and 5, I demonstrate how *Dùthchas as kincentric praxis*, as part of the community-led *TEK-nology* pilot project, enabled me to: (1) acknowledge my own self-location and subjectivities as Gàidheal (re)researcher “self-in-relation” (Graveline, 1998); (2) operationalize the five Dùthchas principles I identified; (3) continue deepening and respecting existing kincentric relationships with family and friends I know; (4) better understand nuanced factors within those relationships that may

have influenced intergenerational language transmission; and (5) consider and respect the dynamic role of the land, community, and more than human kin in the research co-creation process as a whole. *Dùthchas as kincentric praxis*, being a dynamic and fluid ontology, is emplaced ethical relations (Oliver, 2021) and, as such, is a way to be in-relation with the lands on which one is located. Wilson and Hughes (2019) stress that, “as researchers, we are not separate from the process, but rather participate in relationship with what we are learning” (p. 9).

Implications

Dùthchas as kincentric praxis has implications for the conceptualization and operationalization of future emplaced in-relation methodologies and ways in which researchers who are not Indigenous to the lands on which they work can collaborate in a more ethical and mutually beneficial manner with Indigenous Peoples and communities.

Dùthchas as kincentric praxis seeks to inform ways in which we can foster, improve, and uphold emplaced ethical Indigenous—non-Indigenous to Turtle Island (research) relations (Truth and Reconciliation Commission, 2015). Potawatomi climate and environmental justice scholar Kyle Powys Whyte notes that alliance-building between Indigenous communities and non-Indigenous groups needs to be constructed upon ontological pluralism and mutual respect and reciprocity (Whyte, 2013). And Anishinaabe scholar Rachel Arsenault (2019) notes with regards enacting treaty rights for research and education in Treaty 3 territory in Canada, “the Anishinabeg wanted non-Indigenous peoples to learn Anishinaabe language, tradition, and culture. Anishinaabe leaders hoped that newcomers would learn to respect Anishinaabe ways of being, leading to healthier interactions between treaty partners over time” (Luby et al., 2019, p. 206). I illustrate how the decolonizing methodologies, Biskaabiiyang and Dùthchas, enabled me

to respect and be accountable to existing relationships within my Anishinaabeg family's community (relational accountability; Reo, 2019; Wilson, 2001), reclaim Gàidhlig and start learning Anishinaabemowin, follow Anishinaabe protocols, and take an "engaged approach" to the research which, "focuses on trust-building with the researched communities and on creating an environment where participants can openly discuss multiple and contested language issues (e.g. sociopolitical, educational, and cultural) in education" (Phyak, 2021, p. 222).

Dùthchas as kincentric praxis exemplifies how researchers can locate and articulate their own assumptions, beliefs, and intersections with colonialism to be respectfully in-relation with the Indigenous communities and peoples involved with the research. The five Dùthchas principles identified are examples of "methodological rich points" (Hornberger, 2013) that can inform more ethical and equitable language education and research. Hornberger explains, "methodological rich points are those times when researchers learn that their assumptions about the way research works and the *conceptual tools* they have for doing research *are inadequate to understand the worlds they are researching*" (emphasis added, p. 102). In Chapter 3, I demonstrate how I conceptualized and operationalized Dùthchas as a methodology to be more representative of my worldview as a Gàidheal, to guide my personal self-decolonization process, and to conduct emplaced ethical research relations (Oliver, 2021) with my family's Anishinaabe community. The Dùthchas principles are culturally- and context- specific to me as a Gàidheal with my own lived experiences, and it is not intended that these principles are to be simply "copy-pasted" into future methodological approaches without researcher critical reflection, self-location, and ongoing self-decolonization. However, *Dùthchas as kincentric praxis* could inform the conceptualization and implementation of future *in-relation* methodologies. Researchers could draw inspiration from the Dùthchas principles and critically self-reflect on what their own self-

decolonizing processes would entail, or how kinship could be enacted as methodology in a context-specific manner based on their own lived experiences, positionality, and self-location. As the Truth and Reconciliation Commission of Canada (2015) states, “reconciliation is about establishing and maintaining mutually respectful relationships between Aboriginal and non-Aboriginal peoples in this country” (p. 6).

6.3 *TEK-nology* as online community-based language planning

The third and final research objective of this thesis was to explore ways in which federal and provincial language planning and policy (LPP) in Canada and beyond could be improved to address inequities and marginalization of Indigenous Peoples in the educational system. In this section, I will demonstrate how *TEK-nology* as online community-based language planning addresses this research objective.

The *TEK-nology* pilot project is an example of community-based language planning (McCarty, 2018a) conducted entirely through digital and online technologies. Community-based language planning is bottom-up, grassroots, and emphasizes the agency and autonomy of Indigenous Peoples and communities in language-related decision making (Hornberger, 1999; Lewis et al., 2016; McCarty, 2018a). Nation-state medium-of-instruction policies have long been a driving force of language shift (Tollefson & Tsui, 2004). Mainstream western education and colonial, restrictive policies have attempted to “‘erase and replace’ linguistically encoded knowledges and cultural identifications with those associated with dominant-class ideologies, values, and practices” (McCarty, 2018b, p. 356). These policies have led to educational and socioeconomic inequities for Indigenous peoples, such as poverty, low rates of educational attainment, and teen suicide (Castagno & Brayboy, 2008). In Canada, Indigenous linguistic and

cultural heritage has been compromised either through overt force and genocide, as in residential schools (Truth & Reconciliation Commission, 2015), or in more covert forms, such as present-day monocultural, monolingual school environments, such as English- or French- only classrooms in Canada.

“One-size-fits-all” approaches do not work given the great cultural and linguistic diversity and vast geographic span of Indigenous Peoples and languages across Turtle Island. According to the most recent Census data, there are 169 Indigenous languages in the United States (Siebens & Julian, 2011) and more than 70 in Canada (Statistics Canada, 2017). Throughout this thesis, I highlight that due to colonization, deficit language ideologies, and extreme language shift (Ó hIfearnáin, 2015), strong, self-determined and culturally appropriate approaches are required that build on existing Indigenous and local family-school-community nexus (López & García, 2016; McCarty, 2018a, 2021). Indigenous-language immersion is the most effective approach in which to safeguard community interests while reclaiming and revitalizing Indigenous languages (McCarty, 2018b, 2021). This immersive approach must be grounded in community-led language reclamation initiatives, or an “effort by a community to claim its right to speak a language and to set associated goals in response to community needs and perspectives” (Leonard 2012, p. 359). Indigenous language revitalization initiatives can only succeed if the community is significantly involved in language planning and policy development (Hornberger 1999; May, 1999, 2006). The analysis in Chapter 5 confirms that “immersion is the way to go” (B. Nolan, 2021, personal communication) for Anishinaabemowin language revitalization and reclamation.

The literature in Chapter 5 underscores that LPP needs to be community-, culture-, and context- specific, which includes “language planning [with] virtual communities” (Tollefson,

2017, p. 2). Tollefson (2017) points out, “language planning may take place in schools and other institutions, in families and workplaces, or in any social group—including virtual communities—in which verbal communication takes place” (p. 2). To further illustrate the impact and implications of *TEK-nology* as online³³ community-based language planning, I identify *online self-determined sites of praxis* as an overarching theme.

6.3.1 Online self-determined sites of praxis

Indigenous languages barely receive “ideological and implementational space” (Hornberger, 2005) in mainstream western education. Throughout this thesis, I stress that, to prevent further marginalization of Indigenous languages and communities and to enact more equitable language education and policy, work is required at macro-, meso-, and micro- levels and through multiple interconnected processes. Extensive scholarship underscores that government-led, top-down LPP implementation *must* take place with community-led, bottom-up LPP (King, 2001; Lin & Yudaw, 2016; McCarty, 2018a; Meek, 2011; Ricento & Hornberger, 1996; Shohamy, 2006; Spolsky, 2004). Research demonstrates that Indigenous language reclamation and revitalization are most effective when they are community-led and responsive to local contexts and needs (Leonard, 2012; May, 1999; McCarty, 2018a; Ricento & Hornberger, 1996). Conversational knowledge of an Indigenous language can save Indigenous lives, raise community capacity, and foster deep social, emotional, and spiritual wellbeing (Hallett et al., 2007; Kirmayer et al., 2016). Youth suicide rates effectively drop to zero with conversational knowledge of an Indigenous language (Ball et al., 2013; Hallett et al., 2007).

³³ I prefer to choose the term *online community* as opposed to virtual community to differentiate from virtual environments, such as virtual reality, where there is no real-life nor in-person community.

While work to ensure top-down LPP occurs alongside bottom-up LPP is essential and ongoing, language ideologies and attitudes continue to influence the beliefs and feelings held by language speakers (Kroskrity & Field, 2009; Tollefson, 2006). Dominant languages and speakers are privileged by supportive governmental, macro-level policies, billion-dollar funding, and ideologies that favor languages already in power atop “hierarchies of prestige” (Liddicoat, 2013). In settler colonial contexts and in the case of Canadian neoliberal multiculturalism, dominant, nation-state languages and knowledge systems—such as English or French and eurocentrism—are “valued” for their linguistic, economic, or cultural capital (Nakagawa & Kouritzin, 2021; Phyak, 2021; Phyak & Sharma, 2021). I have argued elsewhere that this privileging of dominant colonial knowledges, languages, and neoliberal valorizations of diversity in education is an example of coloniallingualism (Meighan, 2022b). Indigenous and minoritized languages can “end up being treated as mere resources, important only for their exchange value rather than cultural significance” (Pennycook & Makoni, 2020, p. 98). Indigenous languages can be viewed as “unhelpful” or “unnecessary”, not only by dominant language speakers but by Indigenous speakers and communities themselves (May, 2014). There is a need for a “ideological clarification” (Kroskrity, 2004) and more context-specific, community-based and community-led safe spaces where community members can discuss their views, mobilize knowledge, and share expertise together on language reclamation and revitalization beyond dominant hierarchies, external, generic, or monolithic “one-size-fits-all” spaces, and deficit ideologies. Phyak (2021) elaborates, “it is important to engage language-minoritized communities in dialoguing about the impacts of dominant language policies in their communities” (p. 230). Participants on the *TEK-nology* pilot project remark that there is a need to change the “frame of thought” (Belleau, 2021, personal communication) and “state of thinking” (B. Nolan, 2021, personal communication)

which privilege dominant languages, such as English or French, and influence local language-making decisions and community language shift to the detriment of Anishinaabemowin. The analysis in Chapter 5 indicates that *TEK-nology*, as online community-based language planning, enabled an *online self-determined site of praxis*. I define an *online self-determined site of praxis* as a community-led online space in which Indigenous community members and invitees can meet to converse, critically reflect, share strategies, and enact knowledges in a practical way for the benefit of the Indigenous community. The LRC is an example of an *online self-determined site of praxis* where participants shared strategies, expertise, and thoughts, such as on strength-based Anishinaabe language education and “what language means for us” (J. Belleau, personal communication, 2021), and co-created the immersive *TEK-nology* videos that are now hosted free-to-access online.

An additional important factor in contesting and counteracting dominant language hierarchies of prestige is ensuring Indigenous languages are not relegated to informal language domains and viewed as *only* “marginal” or “local” languages (Liddicoat, 2013). Just as top-down and bottom-up LPP is essential, so too is the presence of Indigenous languages in formal language domains, such as education, government, and media alongside intergenerational transmission in the family and community (May, 2000). The analysis demonstrates that the LRC further served as an *online self-determined site of praxis* wherein participants could brainstorm ideas and strategies for “prestige planning” (Kamwangamalu, 2016), such as place name reclamation and street signs in Anishinaabemowin for “collective community learning and to inspire people” (J. Chiblow, 2021, personal communication) to acquire the language. Participants shared additional strategies to raise the status of the language in formal language domains within the community and beyond, such as the requirement of Anishinaabemowin for jobs (D. Nolan,

2021, personal communication) and a fully immersive Anishinaabemowin school (B. Nolan, 2021, personal communication).

Implications

Online self-determined sites of praxis, as part of *TEK-nology* as community-based language planning, have implications for status and acquisition language planning (Cooper, 1990; Kaplan & Baldouf, 1997, 2003) and more equitable and culturally responsive LPP and education that centres Indigenous Peoples, languages, and their communities.

TEK-nology as online community-based language planning and *self-determined site of praxis* expands the critical sociocultural paradigm of LPP (McCarty & Warhol, 2011); exemplifies further praxis-driven community-based language planning research (McCarty, 2018); and illustrates how the engagement of Indigenous and language minoritized communities in LPP (Phyak, 2021) in community-based language planning can inform more equitable language policy through “culturally grounded contexts of praxis” (May, 2021). The analysis shows how Anishinaabe community members on the *TEK-nology* pilot project are the language-related planners and decision-makers (Lewis et al., 2016; McCarty, 2018a). Anishinaabe community members decide what language *is* and *means* for them and center their own community needs rather than externally defined or set goals, such as grammatical fluency (Leonard, 2017) or a digitally “thriving status” (Kornai, 2013). The analysis in Chapter 5 demonstrates that “this project allowed us to focus on what we wanted, and included immersion!” (Anonymized online survey response, 20/12/21). The LRC, as part of an *online self-determined site of praxis*, illustrates how Anishinaabe community members set culturally

responsive goals and objectives for the creation of the immersive *TEK-nology* language acquisition videos.

Community-based language planning often begins with a small group, as in the case of the LRC on the *TEK-nology* pilot project, or even with an individual (McCarty, 2018a). These efforts by individuals and families have led to changes in national and state-level language policies. McCarty (2018a) elaborates, “it was a small group of Indigenous parents and elders who established the first Kōhanga Reo and Pūnana Leo in the early 1980s, at a time when Māori and Hawaiian were predicted to ‘die’” (p. 373). In Chapter 5, given the vast diversity of Indigenous communities across Turtle Island, a 10-year *territorial language strategy* in Robertson Huron Treaty territory (refer to Figure 5.1) was suggested in our LRC (S. Chiblow, 2021, personal communication) as a way in which Anishinaabe community-based language planning could be mobilized and scaled into broader, wider-ranging culturally and environmentally responsive LPP and self-determined Anishinaabe language education.

Territorial language strategies have implications for the implementation of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) in the Canadian context and linguistic human rights (LHRs). Adopted by the UN General Assembly on 13 September 2007, UNDRIP affirms the “minimum standards for the survival, dignity and well-being of the Indigenous Peoples of the world”. In Canada, UNDRIP received Royal Assent on 21 June 2021, and immediately came into force. The UNDRIP Act ensures Canadian federal laws reflect the standards set out in the Declaration, while also respecting Aboriginal and treaty rights recognized and affirmed in the Canadian Constitution. Joffe, Hartley, and Preston (2010) note that UNDRIP, “can be further used to advocate for a *new approach to policy* - one that reflects the *indivisibility and interconnectedness of human rights* - leading to better outcomes for Indigenous people,

including women and children” (emphasis added, p. 191). Phillipson, Rannut, and Skutnabb-Kangas (1995) introduce the concept of LHRs by bringing together language and human rights,

Linguistic rights should be considered basic human rights. Linguistic majorities, speakers of a dominant language, usually enjoy all those linguistic human rights which can be seen as fundamental, regardless how they are defined. Most linguistic minorities in the world do not enjoy these rights. It is only a few hundred of the world's 6-7,000 languages that have any kind of official status, and *it is only speakers of official languages who enjoy all linguistic human rights.* (emphasis added, pp. 1-2)

While one of the main goals of UNDRIP is to support Indigenous Peoples’ exercise of the right to self-determination, its provisions are non-binding for all levels of government and allow nation-states to adopt a “minimalist approach” (Tollefson & Tsui, 2004, p. 6). That is, “nothing in the federal legislation prevents provinces or territories from developing their own plans and approaches for implementation of the Declaration, or require them to do so” (Department of Justice Canada, 2021, p. 5). In Québec, Bill 96 received assent and became law on June 1 2022. Bill 96 forbids provincial government agencies, municipalities, and municipal bodies in Québec from making use of languages other than French and damages reconciliation efforts with Indigenous Peoples (Serebrin, 2022). In Ontario, the Canadian province where the *TEK-nology* pilot project took place, English and French, Canada’s official languages, are the only languages of instruction permitted by provincial law in schools (Bale, 2016, p. 242; Ontario Education Act, 1990). It is only the speakers of these official languages who enjoy all the LHRs highlighted by Phillipson, Rannut, and Skutnabb-Kangas (1995) in Canada. Fernand de Varennes, United Nations Special Rapporteur on Minority Issues, observes that,

Any policy favouring a single language to the exclusion of all others can be extremely risky ... because it is then a factor promoting division rather than unification. Instead of integration, an ill-advised and inappropriate state language policy may have the opposite effect and cause a levée de bouclier [outcry]. (1996, p. 91)

A territorial language strategy for Robinson Huron Treaty territory could inform, facilitate, and enable the enactment of a dynamic “territorial language principle” decided by the Anishinabek Nations of that territory and its language dynamics (Kymlicka, 2001; Morales-Gálvez, De Schutter, & Stojanović, 2022). A territorial language principle “grants language rights that are limited to a particular territory in order to ensure the maintenance of a particular language in that area... prominent examples [are] Belgium, Québec, Switzerland, Wales, Catalonia, and the Basque Country” (May, 2018, p. 246). A dynamic territorial language principle—informed by a territorial language strategy such as that identified as part of our LRC and *online self-determined site of praxis*—could inform more equitable self-determined language education, planning, policy, and legislation for Indigenous Peoples’ (linguistic) human rights and the implementation of the UNDRIP Act in Canada, currently in its Action Plan stage until mid 2023. More *online self-determined sites of praxis* to dialogue the potential of territorial language strategies or principles both in Canada and worldwide could also help ensure the UNDRIP principles of “free, prior and informed consent” (FPIC) are enacted to uphold “the rights of Indigenous peoples and [ensure] that there is effective and meaningful participation of Indigenous peoples in decisions that affect them, their communities, and territories” (Department of Justice Canada, 2021, p. 2). May (2018) remarks,

The recognition of language rights can and does support, rather than undermine, wider social and political stability in modern nation-states. In other words, nation-states can and should move beyond the historical preoccupation with linguistic homogeneity, arising from the politics of nationalism, in order to adopt a more plural and inclusive approach to minority groups. Continuing to ignore such demands, as we have seen, is only likely to escalate them. More positively, if nation-states are reimagined in more plural and inclusive ways, there is potential for the recognition of not only greater political democracy but greater ethnocultural and ethnolinguistic democracy as well. Thus, far from undermining democratic principles—a common assumption among opponents of minority rights—the accommodation of cultural and linguistic group-based rights may well extend them. (p. 250)

In addition to the protection of LHRs and the implementation of the UNDRIP in Canada, the Truth and Reconciliation Commission Report (2015) lists 94 Calls to Action to redress the legacy of residential schools and advance reconciliation. The report stresses the need for mainstream educational reform and increased governmental funding for long-term, community-led Indigenous language revitalization initiatives. According to Fontaine et al. (2019), the *Bill C-91: Indigenous Languages Act*, which came into force in 2019 to support the efforts of Indigenous peoples to reclaim, revitalize and strengthen Indigenous languages,

Amounts to nothing more than an aspirational policy statement... with no specific Indigenous language rights and no corresponding positive obligations on the Government

to implement those rights...It leaves intact the Government's bureaucratic control over funding of all Indigenous language initiatives, including the trap of block funding which forces communities to compete with each other for available dollars. On the key issue of new dollars for immersion schools, the Bill is silent, speaking only about "immersion programs", not schools... Of course, the teaching of Indigenous languages poses significant pedagogical challenges when speakers are dwindling in number, certified teachers are not necessarily speakers and culturally appropriate materials must be developed, sometimes from scratch. Bill C-91 does not meet this challenge by creating national or regional Indigenous Language Institutes controlled by the language groups or communities they would serve, as repeatedly recommended. Instead, Bill C-91 makes the bizarre suggestion that communities seek help from the Commissioner of Indigenous Languages, a Government appointee. (pp. 3-4)

As highlighted above, Bill C-91 does not meet the challenge of creating more initiatives or institutes that are controlled by the Indigenous language groups or communities they deem to serve. While one of the main goals to address inequities and the marginalization of Indigenous Peoples and their languages in education is to "enact the right of Indigenous parents to educate their children in their ancestral languages in publicly-funded immersion *schools*" (emphasis added, Fontaine et al., 2019, p. 2) and not only "programs", *online self-determined sites of praxis* can, in the interim, inform more equitable LPP. At a home, family, and community micro- and meso- level, *online self-determined sites of praxis*, as in the case of the *TEK-nology* pilot project, could serve as a model for more self-determined, community-led, and community-controlled initiatives in Turtle Island and across the globe during the current United Nations International

Decade of Indigenous Languages (2022-2023) and beyond. At a macro-level, majority language planning and policy decision makers, such as in the case of English or French in the Canadian context, could adopt and fund more community-based or territory-based language planning initiatives, such as *TEK-nology* pilot project, to foster more ethical, pluralistic, and equitable nation-state language policies (May, 2018). *Online self-determined sites of praxis* and the community-led and context-specific strategies, pedagogies, approaches, creations, and recommendations identified therein can (1) inform future policy and legislation decisions at a territorial, provincial, federal, and national level; (2) enable full implementation of UNDRIP; (3) improve relationships with nation-states; and (4) ensure the full recognition of the inherent rights of Indigenous Peoples, including treaty rights. As Corntassel (2008) underscores, for “substantive decolonization and community regeneration to take place. . .the identification and implementation of nonstate, community-based solutions should take precedence” (p. 121). The analysis in Chapters 4 and 5 indicate that Indigenous-led, praxis-driven community-based language planning, such as the *TEK-nology* pilot project and *online sites of praxis*, can support Anishinaabemowin language revitalization and reclamation processes and more equitable, self-determined LPP.

6.4 Limitations

More research and funding are required to develop the *TEK-nology* approach and the language acquisitions videos on a larger scale with more community members and over a longer timeframe. The *TEK-nology* pilot project took place over 12 weeks, a relatively short timeframe, and during the COVID-19 pandemic when in-person restrictions were in place. Some respondents on the anonymized online survey remarked that more videos could be made, with

video content and activities tailored to diverse age ranges. More seasonal videos could have been made on the land, during summer, since the videos were filmed in late fall and early winter 2021. The project relied on one fluent Elder, with limited time and an already very busy schedule, to share insights and lend her expertise as one of the few language and knowledge keepers. The process of creating immersive videos takes significant effort and time, from scripting, coaching learner-speaker participants, to filming, recording, translating, and transcribing. As such, further research would require more funding going forward to ensure the Elder and the process is appropriately and robustly supported.

6.5 Future Directions

The *TEK-nology* pilot project, as introduced, discussed, and explored in this thesis, is not intended to be viewed as a finished “product”, but rather as a self-determined, iterative, participatory *process* which (1) empowers Indigenous community voices, expertise, capacity, and autonomy in language education, planning and policy; (2) enables more online self-determined sites of praxis where Indigenous community members can dialogue and discuss how Indigenous education, language revitalization, and cultural reclamation can and should be delivered in the community; and (3) supports community-led and context-specific language revitalization and reclamation processes and needs in an accessible, culturally, emotionally, and environmentally responsive way.

To develop the *TEK-nology* approach and build on the pilot project into the future, Elder Barbara Nolan suggested in our last LRC focus group of the pilot project that we apply as an ad-hoc committee for funding to carry out a year-long project—in-person and using the affordances of digital and online technologies—to further support community-led and -based

Anishinaabemowin language revitalization and reclamation. Accessing extra funding would enable us to hire a community-based team to support and finance equipment, translations and transcriptions, video making, and more in creating immersive Anishinaabemowin learning videos based on traditional seasonal activities in Ketegaunseebee and the surrounding territory. Building on the *TEK-nology* pilot project in this way, by branching out more into the community and engaging more community members over a longer period of time, could help strengthen community capacity while supporting Anishinaabemowin language revitalization and reclamation processes. Further exploring the impacts of the *TEK-nology* approach over time could also lend more insights the impacts and benefits of community-specific strength-based language indicators and concept-based language acquisition, such as the use of visual-manual modalities and conveying meaning through concepts not words. Future research could explore how these processes complement and bolster existing land-based, community-led, and in-person Indigenous language revitalization initiatives, pedagogies, and methodologies, especially after COVID-19 restrictions have been dropped and in-person activities are resumed.

More future interdisciplinary and trans-systemic research is also required to support the full implementation of the UNDRIP Act in Canada and ensure the inherent rights of Indigenous Peoples, including treaty rights, are implemented in social, political, legal, and educational institutions, structures, and systems. As Skutnabb-Kangas and May (2017) remark,

Even today, interdisciplinary engagement remains nascent. Few lawyers know much about language or education, for example. Many sociolinguists and educationists, who are today writing about linguistic human rights, know too little about international law, political theory, or economics. Most political scientists who discuss language and

citizenship actually know little about language or education, even when they profess to. The first multidisciplinary book about linguistic human rights appeared in the mid-1990s. This is a fast growing area where major concept clarification and further transdisciplinary engagement – traversing sociolinguistics, international law, education, and political studies – is still urgently needed. (p. 128)

As discussed in this thesis, ongoing inequities and marginalization of Indigenous Peoples and their languages in education and beyond continue to this day. Interdisciplinary engagement and research are still urgently needed to support Indigenous language revitalization and reclamation processes and will be crucial for more equitable (language) education, policy, research, legislation, and the full implementation of the UNDRIP in Canada going forward.

6.6 Conclusion

This manuscript-based thesis has explored the role of relational technology, strength-based language education, and community-led language planning and policy research for Indigenous language revitalization and cultural reclamation.

In this thesis, I introduced and investigated the potential of the *TEK-nology* (Traditional Ecological Knowledge and technology) approach to support community-led Indigenous language revitalization and cultural reclamation processes with participants from my Anishinaabe family's community. This empirical research explores the impact and implications of self-determined, community-led, and community-defined language processes and the role of technology in those contexts. The research demonstrates: (1) the potential and impact of grounding language acquisition and knowledge transmission in Indigenous worldviews, decolonial technology use,

and strength-based language acquisition indicators; 2) ways in which researchers who are not Indigenous to the lands on which they work can collaborate in a more ethical and mutually beneficial manner with Indigenous Peoples and communities; and (3) ways in which federal and provincial language education planning and policy could be improved to address inequities and marginalization of Indigenous Peoples in the educational system.

This thesis offers three primary original contributions to the field of language education and language planning and policy at three interconnected and interdisciplinary levels of analysis: (1) *TEK-nology* as a language acquisition and knowledge transmission approach; (2) Dùthchas as kincentric methodology for community-led research in-relation praxis; and (3) *TEK-nology* as online community-based language planning. A key feature of the *TEK-nology* approach is a focus on processes that lead to praxis and practical applications of theory and knowledge. The *TEK-nology* pilot project has introduced and been implemented as a language acquisition *approach*, a research co-creation and in-relation *methodology*, and *method* for an online self-determined site of praxis. Smith (2021) elaborates,

In all community approaches process – that is, methodology and method – is highly important. *In many projects the process is far more important than the outcome.*

Processes are expected to be respectful, to enable people, to heal and to educate. They are expected to lead one small step further towards *self-determination*. Indigenous community development needs to be informed by community-based research that respects and enhances community processes. (emphasis added, p. 149)

The community-led *TEK-nology* pilot project has implications for more equitable and self-determined language education, language planning and policy research, and community-led methods and methodologies. The *TEK-nology* pilot project is an example of Indigenous community-based language planning conducted entirely through digital and online technologies. A group of family and family friends designed and co-created a series of language learning videos for Anishinaabemowin language revitalization and reclamation from scratch during the COVID-19 pandemic. More self-determined approaches centring local Indigenous community processes, the land, Indigenous knowledge systems and worldviews are crucial to address colonial and imperial incompatibilities, inequities, imbalances, and injustices that have caused genocide, linguicide, language loss, and language shift. The *TEK-nology* approach and pilot project demonstrates that community-led, relational technology and immersive strength-based and concept-based Indigenous language acquisition can support Anishinaabemowin language revitalization and reclamation and foster more equitable multicultural and multilingual education practice and policy in the Canadian context. The research analysis also illustrates how *TEK-nology* serves as an online self-determined site of praxis and community-based language planning model that can inform more community-led Indigenous language revitalization and reclamation initiatives worldwide and more equitable language policies and legislation to address educational inequities. Finally, the implications of Dùthchas as in-relation methodology and kincentric praxis can inform ways in which researchers can foster, improve, and uphold enmeshed ethical and mutually respectful Indigenous—non-Indigenous to Turtle Island (research) relations.

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