Repairing Socioecological Relationships: *Landguaging* the Imperial L2 Classroom

Rhonda Chung

A Thesis

In

the Department

of

Education

Presented in Partial Fulfillment of the Requirements

For the Degree of

Doctor of Philosophy (Education) at

Concordia University

Montréal, Québec, Canada

July, 2025

CONCORDIA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

This is to certify that the thesis prepared

By: Rhonda Chung

Entitled: Repairing Socioecological Relationships: *Landguaging* the Imperial L2 Classroom

and submitted in partial fulfilment of the requirements for the degree of

Doctor Of Philosophy

complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by the final Examining Committee:

_____ Chair
Dr. Pavel Trofimovich

_____ External Examiner
Dr. Sunny Lau

_____ Arm's Length Examiner
Dr. Suzie Beaulieu

_____ Examiner
Dr. Mela Sarkar

_____ Examiner
Dr. Diane Querrien

_____ Thesis Supervisor
Dr. Walcir Cardoso

Approved by _____
Dr. Walcir Cardoso, Graduate Program Director

August 22, 2025 _____
Date of Defense Dr. Pascale Sicotte, Dean of Arts and Science

Abstract

Repairing socioecological relationships: Landguaging the imperial L2 classroom

Rhonda Chung, PhD

Concordia University, 2025

This two-manuscript dissertation explores how two imperial and non-Indigenous languages in Canada (English and French) can resist replicating monolingual and colonial traditions though plurilingual pedagogies and online tools. In Chapter 1, an overview of the ecolinguistic framework that all chapters are rooted in is presented. It explores how multimodal and plurilingual activities build learners' relationships to their nested macro- to micro-sized socioecosystems. This framework is then extended to a discussion of ecological technologies and pedagogies.

Chapter 2 (Manuscript A) focuses on the struggles that language learners experience when engaging with speakers of different language varieties. This difficulty is often explained by a lack of exposure to sociophonetic variability in classroom materials with the emphasis instead on teaching the (usually invariable) standard variety. Focusing on the French second language (FSL) context, our understanding of sociophonetic variation in the classroom comes primarily from textbook studies; little empirical evidence has quantified the amount and kind of social speech markers (e.g., age, race, region, native speaker status) found in FSL audiovisual curriculum. Using a comparative case study, this chapter examines the audiovisual materials of two FSL classroom contexts: the university and the government sponsored *francisation* course. Interviews and questionnaires elicited FSL instructors' criteria for selecting materials, and their experiences with and attitude towards including social speech marker variation in their curriculum. Additionally, audiovisual materials from each instructor collected over a semester

were categorized and analysed by five social speech markers and clip length. Results showed that instructors held positive viewpoints towards including variation; however, audiovisual materials from both settings were invariant across the markers of age, race, region, native speaker status and sourced mostly from mass media. Specifically, the materials excluded elderly, adolescent, children, racialized, non-native speakers and varieties from regions other than Québec. Suggestions for incorporating more varied materials in the curriculum are highlighted and form the basis of the second manuscript.

To address the lack of variation found in the imperial L2 curriculum in Chapter 2, Chapter 3 (Manuscript B) introduces *Parlure Games*, a computer-assisted language-learning tool that promotes exposure to and interaction with those speakers absent from audiovisual materials (e.g., elderly, racialized) using non-mass media and online mapping. *Parlure Games* has three teaching goals: exposure to sociophonetic variation, development of plurilingual competencies, and opportunities to visualize and critically discuss imperialism's territorial expansionism. Following a four-level chronological framework, Manuscript B reports on the first three stages: (1) the development of *Parlure Games* in alignment with high variability phonetic training (HVPT) methods; (2) an exploration of its pedagogical affordances based on ecolinguistic principles; and (3) its suitability for achieving the three teaching goals, as evaluated through the Technology Assessment Model-2 (TAM2). While the first two levels are conceptual and design-oriented in scope, the third is empirical: Drawing on TAM-2-informed data, seventeen undergraduate TESL teacher candidates rated Parlure Games highly, suggesting strong adoption intentions. Based on these findings and user feedback, we provide a revised model for the tool's in-classroom implementation, preparing it for deployment for the final stage of the adopted chronological framework.

In the final chapter, the main findings of each manuscript are reviewed, and the value of plurilingual ecolinguistic tools for enhancing the teaching and learning of imperial languages ecologically is reaffirmed. The studies' limitations are outlined, followed by a set of plurilingual ecopedagogical, *Landguaging* activities that address the entanglement of language and land in imperial language teaching contexts, repairing imperialism's sociecological relationship with land.

Acknowledgements

How do I begin talking about Dr. Walcir Cardoso? I struck supervisor gold twice: once as your MA student, and again as your PhD student. We have now known each other for over a decade, discussing everything from phonological theories to punk rock—what more could I ask for? Thank you for continuously supporting me on this academic adventure by helping me shape my ideas into workable experiments, providing feedback on my drafts (often on short notice), and training me to be a better scholar. I have been in the university milieu long enough to know how incredibly lucky I am to have a supervisor, and friend, like yourself. Let's see how much more good trouble we can get ourselves into!

To my committee members: Thank you, Dr. Laura Collins, for those first few years of the dissertation. Your feedback has always challenged me and kept me on my toes! I hope you are enjoying your much-deserved retirement. Thank you, Dr. Mela Sarkar, for taking me under the BILD wing back in 2017! I consider BILD a pivotal point in my academic life. Those afternoons in the Coach House spent critically discussing readings, eating your baked creations, and figuring how our blog could give voice to and connect with more people forever changed my relationship to applied linguistics. BILD provided me with the colleagues and space to challenge my thinking as well as a blog to document the process—thank you for enabling all of this! As I write this, you have officially begun retirement. Woohoo! Thank you, Dr. Diane Querrien, for accepting to be part of my doctoral journey. Although, we are comparatively newer to each other, I value your queries that challenged my thinking and your supportive feedback that encouraged my intellectual growth. I look forward to more years of collaboration. Thank you, Dr. Sunny Lau, for accepting to be my External Examiner and for providing, as always, nuanced feedback that tries to bring the best parts of my ideas to life. There is a reason that you have such

a great reputation among graduate students! Thank you, Dr. Suzie Beaulieu, for accepting to be my Arm's Length Examiner. While we are also newer to one another, I deeply appreciate your willingness to engage with my ideas and point me in the direction of supportive resources. Thank you, Dr. Pavel Trofimovich, for agreeing to serve as the chair of my defense. I have come a long way since our time at New Sounds! I consider your psycholinguistics class a highlight of my academic career; it created the blueprint for how I came to understand cognition and provided me with the basis to expand on that learning.

To my colleagues: Thank you, Dr. Norman Segalowitz, for your kindness and your unparalleled enthusiasm during our talks about the limits of computational-based learning, and the possibilities of an ecological psychology. It is because of you that I began exploring ecolinguistics. Thank you to Orenda Konwawennontion Boucher-Curotte, Dr. Donna Kahérakwas Goodleaf, Dr. Liz Fast, Kahawíhson Horne, Rose Stiffarm, Sarah Paul, Victoria May, Jason Sikoak, Marlene Hale, the pē-kiyokētan collective, and so many more folks for each taking the time to share aspects of your specific Indigenous culture with me, giving me critical feedback, and trusting me with your stories. I extend my sincere thanks to Dr. Charity Anne Hudley, Dr. Mary Bucholtz, and Dr. Christine Mallinson for their invaluable support. Their acceptance of my chapter and constructive feedback were instrumental in fueling my determination to further develop the *Landguaging* theory. I also thank Dr. John Wayne dela Cruz for agreeing to co-author this chapter with me and all of our spirited talks on colonialism! A major thank you to Nadine Wright—the very heart of the Applied Linguistics program. Since meeting at the Open House, you've been my guide through the university's red tape. Your support during tough times, and there were some doozies, was invaluable—you are simply irreplaceable! Finally, a special shout-out to the ever-plucky Joanne Beaudoin at the School of

Graduate Studies for her years of support while I was working, studying, and learning how to juggle all of this as a new mother.

To my family: The biggest thank you goes to my partner, Simon. From meeting at Boa, to dancing at Zoobizarre, saying yes in Sausalito, and exchanging vows in Hawai'i, you have always been by my side, cheering me on. How could this adventure ever have been possible without you? Thank you for always meeting my "should I…" with a "hell yeah", for the *chicanes* over commas, and for our helmet-headed child. Can you believe those kids from MySpace are raising a son together? Thank you to my best bud, Willem-Loup, whom I have loved since you were a flutter in my tummy. You have been part of my entire graduate school adventure! Thank you for teaching me about *Landguaging* through your observations and our conversations. The best part of my life has been getting to love you, and I am so lucky that I get to be your mother. I hope the three of us meet again and again in all our lifetimes—I love you both. To my parents, Margo and Trevor, thank you for the lifetime of love and support. You have been there for me at every stage of life, loving me through my fears, and laughing with me through my highs. I couldn't have asked for better parents—I love you both. Thank you to my grandparents, Metarita, Julie, and both Josephs for sharing your love, your stories about our family, and your incredible resilience. No one will ever make better pine tarts and patties than you!

Contribution of Authors

This manuscript-based dissertation consists of four chapters. The first chapter is an introduction that provides the framework and rationale for the two main manuscripts, which consists of Chapters Two (Manuscript A) and Three (Manuscript B). Chapter Four concludes the research program. A portion of Manuscript A was presented at Pronunciation in Second Language Learning and Teaching Conference (PSLLT) in 2021 and published in its proceedings in 2022. The full manuscript is currently being prepared for journal submission. A portion of Manuscript B was presented at the European Association for Computer Assisted Language Learning (EUROCALL 2022) and published in *Intelligent CALL, granular systems, and learner data: EUROCALL 2022*. The full manuscript was subsequently published in 2024 in *TESL Canada* (Special issue: *Preparing Teachers to Support Multilingual Learners and Counter Raciolinguistic Ideologies in Teacher Education*, edited by S. Rajendram & J. Bale).

CRediT author statement (Manuscript A) – Rhonda Chung: conceptualization; methodology; validation; formal analysis; investigation; resources; data curation; writing – original draft; writing – review & editing; visualization; project administration; funding acquisition. Walcir Cardoso: conceptualization (supporting); writing – review & editing (supporting); visualization (supporting); co-supervision. Laura Collins: conceptualization (supporting); writing – review & editing (supporting); co-supervision.

CRediT author statement (Manuscript B) – Rhonda Chung: conceptualization; methodology; software; validation; formal analysis; investigation; resources; data curation; writing – original draft; writing – review & editing; visualization; project administration; funding acquisition. Walcir Cardoso: conceptualization (supporting); methodology (supporting); formal analysis (supporting); investigation (supporting); writing – review & editing (supporting); visualization (supporting); supervision.

Table of Contents

List of Figures

List of Tables

Chapter 1

Introduction

Canada was founded on the Doctrine of Discovery, a concept based on a series of papal encyclicals issued by Pope Alexander VI on May 4, 1493 (e.g., Inter caetera). It stated that Christian nations had a right to claim and control territories inhabited by non-Christians, viewing their lands as terra nullius [empty land]. This became the legal means for European evangelization and expansionism to claim "rights of sovereignty, property, and trade" over a seized territory; processes that have "smoothly transitioned" into current international law (Reid, 2010, p. 336). Canada was established during what Veracini (2022) calls the third wave of colonialism, defined as allochthonous (non-Indigenous) people appropriating foreign lands to live independently from their motherland with the goal of replacing autochthonous (Indigenous) peoples and gatekeeping out other allochthonous peoples (e.g., previously enslaved peoples, immigrants, or other empires). In 1867, the British North American (BNA) Act, which officialized Canada as a nation-state independent from its European motherlands (e.g., France and England), also cemented its status as a settler colonial nation.

From a linguistic perspective, settler colonialism expansionism involves "deterritorializing" the imperial language from its ancestral homeland (i.e., France and England), and "reterritorializing" it onto foreign territories (Motha, 2014), ensuring linguistic "homogeneity" across the seized territory (Veracini, 2022, p. 76). This linguistic imperialism, defined as using military force to promote structural (e.g., socioeconomic trade, signage) and ideological (e.g., racial and religious policies) elimination of other languages found in a territory (Phillipson, 1992), is employed through several measures, including restricting language use to the allochthonous imperial variety alone in public signage (Irvine & Gal, 2000), assigning

allochthonous toponyms (i.e., exonyms) to erase evidence of the pre-existing autochthonous people (Woodman, 2007), ultimately endangering the local Indigenous ecosystems—peoples, animals. In this dissertation, we focus on imperial language learning in the Canadian second language (L2) curriculum, where language learning has historically been restricted to teaching the allochthonous languages of English or French, particularly their standardized varieties (Lau, 2022; Sterzuk, 2015). This pedagogical move eliminates other dialects (e.g., Indigenized Englishes; Sterzuk, 2011) and languages (e.g., from immigrants) also found on the territory from being discussed, resulting in "homogeneity" or monolingually-oriented" pedagogies that stigmatize learners from exploring other languages (including their home languages), and being viewed as deficient speakers of the imperial variety (Li & García, 2022). Despite calls dating back to the 1920s to pluralize imperial L2 classrooms (Hormann, 1947) and decades of research showing how crucial high-variability language training is for developing robust language skills (Barriuso & Hayes-Harb, 2018), imperial L2 curriculum in Canada continues to favour monolingually-oriented pedagogies (Galante & dela Cruz, 2024; Lau, 2022; Sterzuk, 2015), resulting in low-variable learning that may compromise successful communication.

Calls have now amplified to decolonize the L2 classroom (Macedo, 2019), which in Canada involves disrupting education's settler colonial history of perpetuating barriers for learning about Indigenous languages and cultures (Battiste, 2013). Creating inclusive pedagogies, defined as "a process that helps to overcome barriers limiting the presence, participation and achievement of learners" (UNESCO, 2017, p. 7), necessitates curriculum shine a light on "underrepresented" and "under-served" varieties also found within settler colonial communities to reduce linguistic barriers in the L2 classroom, addressing how and why educational institutions have historically and contemporarily "misrepresented" and "disserved"

these communities (Charity Hudley, 2023, p. 218). To promote inclusive pedagogies that do not replicate monolingual and colonial traditions, the goal of this dissertation is to advocate for the plurilingual learning of imperial languages, like English and French, across its multiple dialects, while also sensitizing imperial L2 teachers and their learners to the relationship between empires and land, using critical ecological technology-based pedagogies.

To further examine this issue in-depth, this manuscript-based dissertation is divided into four chapters. Chapter one, the introduction, is comprised of four parts: (i) part one provides an overview of the theoretical framework underpinning this dissertation: critical ecological computer-assisted language learning (CALL); (ii) part two reviews key terms and concepts used throughout (e.g., language, dialect, voice); (iii) part three situates the ecolinguistic context of imperial L2 teaching and learning in Canada (i.e., settler colonial), which serves as the backdrop for this research; and (iv) part four briefly overviews these objectives as it relates the two studies (Manuscript A and B) in this dissertation.

Chapter two, or Manuscript A, is a descriptive, instrumental case study exploring two imperial L2 settings: a French L2 (FSL) classroom in the university and another in the provincially-funded *francisation* course, both in the urban context of Montreal, Québec. Teachers are interviewed and their audiovisual materials analyzed to identify the social speech markers of each voice (i.e., physiologically distinct linguistic and social features conveyed through speech), providing insights into the sociophonetic diversity of imperial L2 curriculum. Based on these findings, Chapter three, or Manuscript B, follows Cardoso's (2022) four-stage chronological framework for CALL tool development, and tracks the development, pedagogical affordances, and suitability ratings of Parlure Games, a critical ecological online mapping tool

that uses audiovisual materials from the voices identified to be missing from imperial L2 curriculum (i.e., Manuscript A).

Based on results from both manuscripts, Chapter four concludes the dissertation by re-visiting key findings, detailing limitations of these studies, and then providing future directions for ecological CALL's inherent critical and plurilingual/multi-modal learning that involves other non-human interlocutors beyond technology, like land. I propose Landguaging as a means of sensitizing imperial language users to the role that land plays in their L2 teaching and learning experiences, and provide three pedagogical activities that support them in reconciling and repairing their ecological relationship with the territory they live upon, supporting decolonizing agendas.

In sum, this dissertation promotes critical ecological perspectives on learning an imperial language within a settler colonial context with the aim of repairing the socioecological damage linked to its reterritorialization process using plurilingual and land-sensitizing activities. In doing so, this research responds to Pennycook's (2018) call for applied linguistics to widen its anthropocentric focus of communication to include interactions with non-humans (e.g., technology, land), moving it in an anti-oppressive, anti-imperial direction (Anya, 2021; Pennycook, 2022), and towards a liberatory model that recognizes and values inter-community knowledge, allyship, and solidarity (Charity Hudley, 2023).

Positionality statement: Welcome to the *Chungle*

As discussed by Kramsch and Steffensen (2008; see Ecolinguistic Pedagogical Challenges below), embarking on ecological research requires a positionality statement to strengthen the study's internal validity. I now provide this information, focusing on the

intersection of land and educational institutions, as these are the objects of study in this dissertation.

My parents and grandparents were born in Abya Yala (South America) on the territories of Georgetown, Grove (East Bank Demerara), Pomeroon, Meten-Meer-Zorg (West Coast Demerara), Bachelor's Adventure (North coast), and Morawhanna (North West coast)—areas traditionally stewarded by the Wai Wai, Macushi, Patamona, Lokono, Kalina, Wapishana, Pemon, Akawaio, and Warao First Nations. Collectively, these territories were first colonized by the Dutch in 1581 as a resource extraction and plantation colony, then briefly occupied by the French, before being signed over to the English in 1796. It was reterritorialized as British Guiana, differentiating it from the neighboring Spanish Guayana (Venezuela) to the west, Dutch Guiana (Suriname) and French Guyane to the east, and Portuguese Guiana (Amapá, Brazil) to the south. For centuries, these European-based empires exchanged colonies, colluding to extract natural resources for their societies' mutual economic benefit at the expense of local Indigenous communities. My mixed ancestry is directly related to the colonial manipulation, chiefly by the British, among the Arawak-Lokono peoples, as well as those in Guangdong China, Madeira, India, and West Africa (see Chung, 2019; 2022 for overview and discussion of my ethnic heritage). My parents' and grandparents', who are all still alive during the writing of this dissertation, immigrated to Canada in the 1970s, marking their global south diaspora from the West Indies (i.e., the English-speaking Caribbean), and making me the first generation born this far north in the Americas.

I was born in a region called Tsí Tkarón:tó kén:ton tsí, a territory traditionally stewarded by the Kanien'kehá:ka First Nation. They are the most easterly members of the Six-Nation Rotinonhsión:ni (or Haudenosaunee) Confederacy on Turtle Island (North America), and are the

keepers of its Eastern Door, including its Great Lakes region, along with the Huron/Wendat and Anishinaabeg First Nations. I grew up near Kaniatarí:io [beautiful lake], one of five great lakes that form an important hydraulic system known across Turtle Island as a source of great "power", teeming with a biodiversity that draws humans towards it (Sacred Land Film Project, 2015; Kimmerer, 2013). The British began colonizing the region in the late 1700s for long-term settlements, reterritorializing the area and anglicizing it as "Toronto" and the nearby lake and province as "Ontario". Growing up in an anglophone colony was familiar to my parents, grandparents, aunties, and uncles, meaning that, unlike other children of immigrants, I did not need to translate or act as their linguistic or cultural broker in Canada. My older brother and I were monolingual English speakers who attended Catholic elementary and secondary schools, learning core French as our second language. I earned an Ontario Academic Credit in French, which I used for my undergraduate applications. I completed my undergraduate degree at the University of Toronto, a secular university today, but originally founded by the Church of England in 1827.

Shortly after graduation, I decided to move from Toronto, heading east towards the island of Tiohtiá:ke, another territory stewarded by the Rotinonhsión:ni Confederacy, which has served as a traditional natural stopping point for many local First Nations travelling along the Kahrhionhwa'kó:wa waterway. Despite still being on Kanien'kehá:ka territory, I now had to learn a different settler colonial language: French. In 1535, this island was explored by Cartier to create a permanent religious settlement, and in 1634 was reterritorialized with the exonym "Montreal". By 1842, Jesuit colonization had established Loyola College, later transformed into Concordia University, the institution that certifies this doctoral degree, including my MA and French certificate. Concordia's own territorial acknowledgement uses the word "unceded",

which the author (Waháhshon Shiann Whitebean) explains on the website is because "there are no agreements or treaties that have transferred title from any Indigenous Nation to Settler ownership or control; the land was occupied without permission". I also obtained a degree from McGill University, which was implanted on the island in 1821 by Scotland-born James McGill, who, according to the University's website, amassed his fortune from activities in the fur and slave trades that included the West Indies. Despite being an immigrant, his fortune represented "the normality of the practice of whites accruing such wealth from the aggressive capitalist exploitation of Africans and Natives in order to establish academic institutions across North America" (Nelson, 2016, p. 167). In addition to my settler colonial primary, secondary, and tertiary education, I also enrolled in *francisation* courses at Centre Saint-Louis in Montreal, helping me build French fluency. Finally, on a personal level, I am married to a Francophone, born in Montreal to Québecois and Acadian parents, with his primary and secondary education occurring in the French system in East Africa (Djibouti). Together, we have lived in Montreal for 19 years and have one child who currently attends a once Catholic, but now secular, Francophone elementary school. As can be seen repeatedly throughout my positionality statement, my ancestral, linguistic, educational, and intergenerational experiences have all been marked by the colonizing activities of Christian, English, and French nation-building empires for centuries.

My investigation into the nature of imperial language learning involves, therefore, both an insider's perspective of these colonial forces, since I was born and acculturated for multiple generations into European Christian society, as well as an outsider's perspective, as the majority of my ancestries lays outside of this region/belief. Therefore, I count myself as one of millions of people living in diaspora from their Caribbean, Asian, African, and Mediterranean heritages

because of colonialism's displacement and forced migration. After a few generations, many of us no longer speak our ancestral language(s) or celebrate our yearly ceremonies, having had them been replaced by the imperial language and Christian religion iconized in the region. Nevertheless, my graduation from multiple Christian-based institutions and my fluency in European-based languages (English and French) demonstrate my involvement in ongoing colonial projects on Turtle Island, where I am a settler. My positionality in imperial language teaching and learning, therefore, is one where my ancestors were forced into their language and culture, and which I now replicate, evidencing my ongoing complicity with the English, French, and allochthonous settler colonial project in Canada.

Therefore, the purpose of this dissertation is to examine how imperial language learning classrooms present diversity in their curriculum (Manuscript A) and promote opportunities that expand the learning to other varieties and cultures found within that language (Manuscript B), resisting imperialism's effacing nature. This analysis overlaps with personal goals for challenging imperialism's effacing nature and shifting colonial language learning pedagogies in a liberatory direction, one that repairs imperialism's relationships, not just with other languages and cultures, but with land itself, which I detail in the conclusion using *Landguaging* (see Chung & Cardoso, in press).

Theoretical Framework

This dissertation follows an ecological framework for understanding the acquisition of an imperial language (e.g., English, French, or Spanish in North America) with global reach. The first section provides an overview and definition of ecological learning theory. The second section connects ecological learning to L2 acquisition theory (i.e., ecolinguistics), detailing four challenges to this research. The final section explores the principles of an ecological L2

classroom, particularly how it pertains to curricular materials, and focuses on audiovisual learning materials in the what is now called critical ecological computer-assisted language learning (CALL) pedagogies, which serve as the basis for Parlure Games—the mapping tool created in this dissertation for learning diverse varieties of an imperial language (see Chapter Three).

Ecological Learning Theory

An ecological perspective is "ecocentric or geocentric, and assumes, similar to the belief systems of [I]ndigenous peoples, that humans are part of a greater natural order, or…living system" that includes non-animate interlocutors (e.g., land, signs, technology; van Lier, 2000, p. 251). Ecological theory is divided into shallow and deep ecology (Naess, 2017). Shallow ecology's central objective is related to the health of people, mostly in developed countries, with issues related to combatting pollution or resource depletion. Deep ecology involves shallow ecology, but also larger ecosophical issues related to relationship-building between animate and inanimate elements, enhancing diversity intergenerationally, and eliminating class-based hierarchies by employing complexity and chaos theories as they relate to local contexts. Ecosophies form the theoretical backbone of ecolinguistics and involves critiquing an individual's social cognition (i.e., their culture-specific knowledge) "in order to explicate an ethical, value-based evaluation […] of the texts and the underlying stories" to which they have learned (Steffensen, 2024, p. 7). This dissertation explores deep ecological perspectives, focusing on aspects of linguistic diversity (Chapter Two) and relationship-building between land and language (Chapter Three) through a critical socioecological process called Landguaging (Conclusion).

Ecological perspectives revolve around the concept of emergence and affordances, describing how one element in an ecosystem can serve multiple functions for its co-inhabitants. For example, a boulder in a rushing river is an obstacle for salmon to swim around, a prized lookout point for famished bears, or an important landmark for the hiking human. Affordances describe how an object in the environment facilitates a potential "relationship between an organism and its environment", that either "instigates" or "inhibits" action to realize a goal (van Lier, 2004, p. 4). For bears or humans, the boulder facilitates action leading to a potential meal or navigating a terrain, while for salmon, it inhibits their movement. Emergence occurs when elements in the environment combine to "reorganize themselves into more complex, more intelligent systems", a phenomenon that cannot be reduced to the event's basic elements (van Lier, 2004, p. 81). Learning is viewed as emerging in context-specific, non-linear patterns that are noticeable and useful for different members of the ecosystem; this explains why the presence of the boulder results in different outcomes for different species. In the language classroom, learning materials (e.g., online videos) equally serve multiple functions that can either facilitate relationship-building through discussion or inhibit dialogue if there is disinterest in the content.

To analyze these different perspectives, ecological learning uses scales and levels. Scales observe changes in spatial (e.g., a classroom or garden) and temporal (e.g., a semester or a season) dimensions, operating on small (e.g., internal mental processes) or large (e.g., a cultural era) domains at slow or fast cycles. This means that changes in one scale can take longer/faster to have an effect on other scales (van Lier, 2004, p. 13). Processes that occur on short timescales can accumulate and affect longer timescale processes (Blin, 2016). Levels are conceptual systems that are dependent on scales and explain what occurs within them (e.g., individual vs. group test scores). In nature, levels are non-hierarchical; humans, however, often organize them

into hierarchies (van Lier, 2011), like Westerners (Steffensen, 2024). In sum, ecological theory focuses not just on what's inside a learner's head, but what their head is inside of (Mace, 1977), widening the scope of inquiry for what constitutes learning a language. In this dissertation, language learning is understood as emerging at the level of individual language users and materials on a classroom scale, affording curricular opportunities to examine diverse language varieties across place and space, providing potential relationship-building moments that may support target language acquisition.

Ecological Language Learning (Ecolinguistics)

First coined by Norwegian linguist Einar Haugen in 1972, ecological language learning, or ecolinguistics, broadly describes the interaction of language with its natural environment (Zhou, 2021). Since the 1970s, ecolinguistics has gone through five major turns (critical, environmental, ecological, epistemological, and scientific), and the current "radical turn" focuses on embodied cognition of ecological issues (Chen, 2016). This turn analyzes the connection between culture, language, and ecology through the interplay of timescales ranging from micro-systems ("homoscalar"; single timescale events that examine intercultural differences, like cultural greetings) to macro-systems ("heteroscalar"; multiple timescale events involving systems of people over time, like ceremonial practices or ancestral recipes; Steffensen & Bagg, 2024). Halliday's (1990) keynote at the World Conference of Applied Linguistics, where he made connections between language use and environmental consequences, is widely considered the tipping point for ecolinguistics' mainstream visibility. Ecolinguistics is defined as exploring:

"linguistic phenomena found in inter-language, inter-human, and human-nature relationships from the perspective of...ecosophy--the commitment to ecological equilibrium, which...rejects the separation between human beings and nature...and proposes that ecological

crises require not only scientific solutions but also moral introspections of anthropocentric activities" (Chen, 2016, p. 109)

For example, ecolinguistic research has observed that regions with abundant rainfall (e.g., coastal cities) tend to draw humans towards them, engendering plurilingual communities, compared to arid regions, which are more monolingual (e.g., deserts in the polar north; Nettle, 1996). Extending this notion, the studies in this dissertation take place on an island whose landscape has provided multiple access points for Indigenous settlements, and allochthonous military and commercial ports during colonization (Nelson, 2016), equally engendering plurilingualism to thrive.

In addition to intellectual turns across time, ecolinguistics involves at least four different approaches to language research including: symbolic ecology (how speakers in multilingual settings integrate two or more languages); sociocultural ecology (educational and societal processes, like language planning); natural ecology (negative effects of the entanglement of language and the ecosystem); and, cognitive ecology (how language affects human agents in ways that have environmental implications) with a growing emphasis on the latter two, given our ecological crisis (Steffensen, 2024, p. 2). Ecolinguistics, therefore, touches upon issues of language maintenance, loss, revitalization, and diversity (i.e., bilingualism and plurilingualism; Steffensen & Kramsch, 2017). The two case studies in this dissertation focus on symbolic and sociocultural ecolinguistics, and, in our concluding chapter, we explore cognitive ecolinguistics directions with the development of the Landguaging theory, which attempts to "green" applied linguistics by focusing on land (Steffensen, 2024, p.30).

In all instances, ecological learning occurs within an ecosystem that is interactive, affording potential relationships between the learner and elements in their social environment

that either "instigate" or "inhibit" interaction to realize a communicative goal. Interaction, or can-do activities, is a core concept of ecolinguistics because it enables emergence or "the personal, the situational, and the cultural [to] merge…and language [to] unfold" (Kramsch & Steffensen, 2008, p. 19). This view of ecological language acquisition represents an important expansion in applied linguistics from being an input-based concept of receiving and processing a fixed code (i.e., the mind as a machine) to a social activity-based acquisition focused on relation-building affordances (van Lier, 2004). Ecolinguistic acquisition, therefore, involves multimodal and multilingual learning, which is considered sociocognitively beneficial and socioculturally ethical for learners (Kramsch & Steffensen, 2017; Ramírez et al., 2021; Steffensen & Bagg, 2024; van Lier, 2004;), enhancing the learner's social, spatial, and embodied knowledge (sometimes referred to as "hexis"; Pennycook, 2025, p. 111) of their communicative—not purely linguistic—repertoire (Li & García, 2022). To accomplish this multi-dimensional research, ecolinguistics generally draws upon three major theories: perceptual learning, developmental psychology, and complex systems theory, which all "transcend the cognitive-social debate" by integrating both elements (Blin, 2016, p. 40). We explore each of these theories as it relates to the dissertation next.

Ecolinguistic Theories. In perceptual learning, Gibson's (1966; 1979) theory of direct perception, originally devised to explain visual learning, posits that stimuli (e.g., a signal) can be directly perceived from the environment via the senses (e.g., visually), without mediation from past knowledge. This theory was extended to apply to oral language learning, meaning that an acoustic signal can be directly perceived from the environment without mediation from past linguistic knowledge, thereby picking up on available affordances (Steffensen & Kramsch, 2017). Related to concepts like noticing and attention, this "first-level affordance" means that

interlocutors can immediately notice speech characteristics, like gestures or tone of voice, providing a basis for whether a communicative relationship can be instigated; whereas, other sociocognitive and affective measures occur after this initial direct perception, and are mediated by context and engage meaning-based learning (e.g., cultural learning; van Lier, 2004, p. 100).

This view challenged contemporary cognitive-centered theories related to memory, representation, and schema (van Lier, 2004), which viewed perceptual learning as a computational process that stripped away the sociophonetic detail of past linguistic experiences, storing only abstracted representations (e.g., prototypes; Pierrehumbert, 2016). Later research found that learners not only directly perceive sociophonetic information but can also recall its social context and speaker's physiological traits (e.g., voice; Pisoni et al., 1994). For this reason, direct perception was criticized for excluding the internal processes of language learning and for not being specific enough about what features of the environment are relevant for learners (van Lier, 2004); the latter is addressed in the section entitled "Ecolinguistic Pedagogical Challenges" below. Since language is directly perceived by multiple senses, the studies in this dissertation focus on audiovisual materials to better understand what kinds of sociophonetic information learners are being exposed to for later recall.

In the field of developmental psychology in education, Bronfenbrenner (1979; 2005) criticized his field's decontextualized laboratory experiments, questioning their ecological validity for social learning, and proposing instead that learning occurs within four nested socio-ecosystems of varying scales and levels. The microsystem, one of the settings explored in this dissertation, is the smallest scale (e.g., classroom, office, home), and describes patterns of activities and interpersonal relations that occur within a specific context and have physical, social, and semiotic features that instigate or inhabit engagement. The mesosystem consists of

linkages and processes between two or more settings implicating the learner (e.g., classrooms in the school). Attention is focused on "synergistic effects" created by the "instigative or inhibitory" processes of each setting (van Lier, 2004, p. 208). The exosystem, another setting explored in this dissertation, also consists of linkages and processes between two or more settings implicating the learner, but with at least one setting not containing the learner, and where internal events directly influence the learner (e.g., mass media; educational policies). Finally, the macrosystem is the largest scale and contains the patterns of the micro-, meso-, and exosystems characteristic of a given culture, encompassing its societal beliefs and attitudes (e.g., government policy).

Language acquisition, therefore, occurs on different spatio-temporal scales, and although each socioecosystem has its own set of stakeholders and artifacts, the linkages underscore the relationships between them, which allow for tracking what instigates or inhibits action between ecosystems. For example, vernacular (language used in the microsystem of the home; Labov, 2006) is similar to but unique from language use in the microsystem of the classroom or office, and different still from language in the mesosystem of mass media (van Lier, 2004). For an ecolinguist, language learning is shaped by the specific socioecosystem in which it emerges and is intended to be used. The studies in this dissertation primarily focus on the microsystem of the classroom; however, examining audiovisual materials, like those sourced from mass media, for example, extends the scale to the exosystem, highlighting how classroom materials may contribute to "instigative or inhibitory" relationship-building in L2 learning.

The last theory commonly drawn upon in ecolinguistics is complex systems theory, which emerges from a set of interacting and interdependent components that self-organize to form an integrated (i.e., unreducible) whole, bigger than the sum of its parts (Larsen-Freeman &

Cameron, 2008). It is a dynamic (e.g., in constant flux) and open system of varying spatio-temporal scales that is interconnected with specific social contexts, and adaptive to changes therein (Larsen-Freeman, 2020). A key property of complex and dynamic systems is that, despite their apparent randomness or chaos, they nevertheless follow patterns and rules where even small variations in the initial state of a system may trigger a disproportionately large response on its final state (Blin, 2016). These characteristics underscore that L2 research cannot operate on dichotomies of cause and effect or performance and competence, but as one of many semiotic systems that learners use in their communication (Steffensen & Kramsch, 2017). Instead, focus needs to be on interconnections between scales, like how local language use in textbooks is connected to global geopolitical events (Kramsch & Steffensen, 2008). Complex systems are particularly useful in applied linguistics research that involves collaborative computer use (e.g., students co-contributing to completing a computer-based task, like completing a wiki), as this involves "multicomponential" systems where changes arise from interacting components (Chapelle, 2009, p. 748). For this reason, Manuscript B focuses on the development of an interactive dialect-learning tool that supports collaborative computer use. Complexity theory, therefore, enables a wider discussion of phenomena that would be difficult to have through linear models and prediction.

In sum, ecological perspectives on language learning are not neutral and explicitly involve a non-passive relationship between the language user and their environment, adding an ethical and moral dimension to L2 acquisition (van Lier, 2004). With language no longer tethered to just mental representations or laboratory settings, communication is viewed as a practice-oriented social activity called languaging (Wei & García, 2022) composed of an "assemblage" of different elements (e.g., signs, material objects, space) subject to ebb and flow

(Pennycook, 2025). This embodied communicative repertoire includes emotional intelligence, knowledge of physical gestures, the arts (e.g., calligraphy, dance), global events (e.g., pandemics), and other semiotic resources, which all emerge from interaction within nested social environments (Wei & García, 2022). Because ecolinguistics involves multi-disciplinary theory, it presents particular challenges to research and pedagogy, an issue we turn to next.

Ecolinguistic Pedagogical Challenges. Ecolinguistics widens the field of inquiry, taking a holistic approach towards communicative learning with both human and non-human interlocutors, but presents four pedagogical challenges that L2 learning must take into account: historical, cognitive, methodological, and ethical issues (Kramsch & Steffensen, 2008). The first involves acknowledging learners' previous sociocultural history, and the second takes into account learners' cognitive socialization from their first language (L1), which gives them a "surplus of meaning" by way of other modalities (p. 25), which can all be capitalized on in the L2 curriculum. The third issue involves methodological issues. Since L2 learners navigate multiple languages and speech communities, it becomes difficult to document all aspects of their L2 acquisition. Qualitative, longitudinal data that entail positionality statements from researchers are encouraged, providing more internal validity (i.e., ecological validity) than external validity (i.e., generalizability) or reliability (i.e., consistency of outcomes). Emic-based case studies, used in both manuscripts, are encouraged because they are able to measure multiple subjective experiences over time, and provide fuller details about an ecosystem via interviews, surveys, and test scores for human elements, and field notes related to observations about the environment or curricular materials for non-human elements (Lafford, 2019). Finally, ethical issues are raised when L2 use is measured through L1 models, which is problematized in ecological learning.

In this dissertation, I address these theories and challenges in the following way.

For the theories, I assert that L2 acquisition involves direct perception, and that L2 learners notice speech characteristics, or voices (see definition in "Social speech markers" section below), using multiple modalities (e.g., visual, aural). I focus on the affordances of computer-based audiovisual materials for the teaching and learning of imperial L2 classrooms, and take into account exosystem factors, like mass media and educational policies. This allows me to consider complex systems, like how imperial languages used in audiovisual curriculum are connected to global geopolitical events, and the role that "multicomponential" systems, like computer-based learning, can play in interactive L2 learning.

I address the four pedagogical challenges as follows. For historical issues, the first study (Manuscript A, Chapter Two) involves a biodata questionnaire, which takes into account L2 teachers' previous experience with different varieties of the target language and other languages. For example, early experience with multiple dialects in the L1 is linked with better perception (Clopper & Pisoni, 2004a), such experience may lead to better perceptual gains when encountering new speakers with novel dialects (Clopper & Pisoni, 2004b). I also extend the notion of history to non-human interlocutors, providing a territory's history (see Study Context below) or previous iterations of a technology to be accounted for. For the second study (Manuscript B, Chapter Three), the proposed plurilingual online mapping tool (Parlure Games) recounts the reterritorializing history inherent in imperial languages, using pre-existing technology. For cognitive issues, in the first study, I account for the diversity of voices found in imperial L2 audiovisual materials, enabling a conceptualization of how learners' "surplus of meaning" may be engaged in the curriculum. Based on these results, the development of Parlure Games in the second study includes any voices found to be missing from the curriculum,

enabling L2 learners to capitalize on differences in the target language suited to their personal preferences, enhancing potential meaning-making.

For methodological issues, as recommended by Ecolinguistic Pedagogical approaches (e.g., Kramsch & Steffensen, 2008; van Lier, 2004), both studies are case studies. In the first study, I use teacher interviews and observations about the institutional settings and audiovisual curriculum to identify which voices comprise these materials. In the second study, I use teacher survey ratings (via the Technology Acceptance Model 2; Venkatesh & Davis, 2000; see Appendix B) and written feedback related to using the "multicomponential" Parlure Games. Finally, regarding ethical issues, Parlure Games is an interactive online mapping tool designed to expose learners to audiovisual materials from diverse voices of the imperial language, focusing on those identified to be absent from the imperial L2 classroom. It promotes plurilingual-oriented learning, as it relates to ecocentric issues in imperial L2 acquisition, with the aim of enhancing learners' communicative repertoire using critical discussions. To action this research, I provide below a more in-depth analysis of the ecology of L2 classrooms.

Ecological L2 Classroom

Each classroom is a microsystem that operates independently, but is nested within larger socioecosystems, like the greater mesosystem of its institution, and the larger macrosystem of the province that funds it. In the ecological L2 classroom, student communication is either dyadic, occurring between two or more human interlocutors (e.g., between teacher and students or student groups), or triadic, occurring between human dyads and non-human interlocutors (e.g., materials, signs, technology, computers, environment; van Lier, 2000; 2004). Effective ecological activities and materials afford relationship-building between learners and the target language, instigating interaction to realize a communicative goal useful for navigating naturally

occurring linguistic and cultural variation (Guerrettaz et al., 2022). Relationship-building is the first of ten principles that van Lier (2004) outlined, later refined (van Lier, 2011), and is recommended (Lafford, 2009) for conducting ecological L2 classroom pedagogies and research (see Manuscript B, Table 2 for an overview). Each principle outlines the elements of an ecological pedagogy, which involves choosing materials or activities that: engage learners' ethical and moral stance towards the language they are learning to embody (principle five); are relevant to their interests and stimulate them intellectually and emotionally (principle six); are critical (principle seven) and plurilingually-oriented (principle eight), and promote learners' agency to use the language autonomously (principle ten). In observing these principles, van Lier (2004, 2011) posits that they provide sociocognitive advantages to L2 learners and develop their attunement and communication skills.

Materials. This dissertation focuses on curricular materials, defined as "any artifacts that prompt the learning and use of language in the classroom" (e.g., textbooks, workbooks, pictures, realia, virtual artifacts, computers, web sites; Guerrettaz & Johnston, 2013, p.779). All materials have an ideological charge that is "inextricably entangled with all other aspects of the pedagogical context" in complex ways (Guerrettaz et al., 2022, p. 550). They serve to manipulate and focus the L2 learning, either "constraining" language inputs (e.g., reading poems over novels; listening to a movie over a commercial) and outputs (e.g., writing a fill-in-the-blank quiz over an email; acting in short dialogues over giving a speech), or "stretching" learners' language in creative ways (Tin, 2012). Selecting materials represents the planning and sequencing of linguistic content for a course, which shapes classroom discourse (e.g., by theme or by linguistic feature), thereby becoming "participants by proxy" in the ecological classroom (Guerrettaz & Johnston, 2013, p.792). Building on this, ecological L2 researchers have specifically advocated

for computer-based materials because they facilitate both dyadic and triadic communication, mediating interaction with texts or online videos (Hubbard, 2019; Lafford, 2009; 2019; Ramírez et al., 2021; van Lier, 2000; 2004; 2011).

Computer-assisted Language Learning (CALL). Since the 1960s, computers have mediated curriculum, but it would take until the 1980s for it to be consistently used in L2 teaching and learning classrooms (Hubbard, 2019). Garrett (1991) overviews early technological use as a teacher-focused tool used to manage and transmit grammatical information and for evaluation (e.g., feedback on computer-based tasks). Referred to as computer-assisted language instruction (CALI), the computer's appeal was that it served as both a management system for presenting authentic language, promoting "efficacy" (e.g., helping learners communicate in the target language) through tutorials and drills, and fostering linguistic and sociocultural proficiency (Garrett, 1991, p. 74). Decades later, a student-centered approach to technology use emerged, referred to as computer-assisted language learning (CALL), which supported learning at learners' own pace, and provided them with flexibility to choose their own learning materials or author their own content (e.g., blogs, videos; Garrett, 2009). Currently, CALL is defined as "learners learning language in any context, with, through, and around computer technologies" (Egbert, 2005, p. 4). CALL tools are technologies that allow for "accessing content, aiding comprehension, supporting production or enabling communication with others" that improve language skills (learning efficiency), enable deeper associations (learning effectiveness), or permit studying and practising across a wider range of times and places (convenience; Hubbard, 2024a, p. 21). Tool adoption follows a cycle where their affordances, constraints, and limitations are explored by teachers and students alike (Hubbard, 2019), a cycle that we discuss in Manuscript B.

Today, computers are so ubiquitous, or "normalized", that it is difficult to find control groups who do not have experience using them (Lafford, 2009). As a result, CALL has called for expanding the notion of communicative competence to include technological know-how in both student evaluations and L2 teacher training (Chapelle, 2009), sometimes referred to as digital fluency, "proficiency and comfort in achieving desired outcomes using technology" (Ortega, 2017, p. 3030). It has also become increasingly common for students to be more technologically savvy than their instructors, particularly for Web 2.0 tool, defined as user-generated content that promotes interaction and social networking (e.g., wikis, blogs, Instagram; Lafford, 2009), and likely Web 3.0 or "intelligent" tools, defined as technologies that involve virtual representations of humans (e.g., augmented reality, artificial intelligence, cloud computing; Dominic et al., 2014). Some L2 teachers report a lack of confidence in their computer-based skills, which may lead to classrooms being out-of-touch with, and potentially uninteresting for, their learners (Kessler, 2007). As Hubbard (2024b) describes, keeping up with technological trends is rarely possible, particularly when L2 teacher education programs do not have clear objectives or established methodologies for technological training standards. In response, Hubbard recommends L2 teachers have a flexible mindset towards technological integration, which involves a willingness to experiment with new tools in addition to well-established ones and a critical analysis of and reflection on how this technology can be used to encourage active participation. Lafford (2009) advises L2 teachers to use tools, applications, and devices that are familiar across generations or to survey students and incorporate their already established Web 2.0 and 3.0 tools, language learning applications (e.g., Duolingo), and mobile devices (e.g., smart phones) into the additional language learning curriculum. For example, in this dissertation,

Manuscript A involves surveying what imperial L2 teachers use in their classroom, and Manuscript B involves the use of familiar Web 2.0 social media platform tools, Google-based applications, and laptop devices.

Ecological CALL. Ecological CALL describes the totality of interconnected relationships in the language learning process (e.g., teachers, students, materials, environment) as it pertains to multimodal (e.g., aural, visual, tactile) and semiotic (e.g., signs) technological devices and resources (e.g., computers, applications, and platforms; Blin, 2016), affording dyadic, triadic, and multimodally-oriented communication. These pedagogies are emergent and not designed for linear learning. For example, using online hypermedia materials involves cross-referencing information to secondary sites, like online dictionaries to check definitions or text-to-speech sites to hear pronunciations; this use of multiple sites within a task constitutes non-linear learning (Lafford, 2009; Ramírez et al., 2021), aspects used in creating Parlure Games (Manuscript B). This encourages creative remixing and hybridization, "taking existing linguistic, semiotic, and/or cultural materials and recombining them to create new meaning" (Thorne et al., 2009, p. 804). As digital fluency increases, L2 learners are coaxed past instrumental learning desires (e.g., employment or educational opportunities), into becoming more open-minded in these digital spaces toward multiple cultures and languages (Ortega, 2017). This promotes ecological validity in L2 education, particularly as it relates to preparing students for developing communicative skills to participate in the superdiversity found outside classroom contexts (Thorne, 2013). As a result, ecological CALL focuses less on generalizations in L2 learning and more on qualitative perspectives from L2 teachers and students as to how they adapt technology to "understand the complex paralinguistic factors" of their local linguistic context, promoting agency and autonomy (Lafford, 2009, p. 692).

Critical Ecological CALL. Criticality in L2 teaching and learning is defined as problematizing normalized assumptions about knowledge and social practices, questioning power and inequality, and focusing on broader issues that seek visions for change, equity, and inclusivity, using self-reflexivity in teaching and learning practises, and when applied to "tools, technologies, space, and all bio life in the environment" invokes post-humanist perspectives (Lau, 2022, p. 11). Because ecological CALL requires holistic approaches, it involves observations from multiple vantage points, making it inherently critical. For example, van Lier's (2011) seventh principle of ecological CALL classrooms, critical perspective, examines how the sociopolitical structures of institutions affect L2 education, and advocates for transformative research and pedagogies that are "oriented toward understanding and actively improving humanity in a sustainable world" (p. 389). This involves classroom activities focused less on prescriptive learning, and more on noticing why one linguistic feature from a community is used over another (i.e., a standard variety), therefore requiring exposure to authentic language use and materials from diverse socioecosystems, while orienting language learning to question power and digital divides (e.g., technological access and disparity) with ultimate goal of repairing relationships and promoting equity (Ortega, 2017). This could involve pedagogical activities that repair environmental relationships via sustainability (i.e., CALL projects that implicate society, the environment, and the economy or business, like e-learning; Blin et al., 2016) or through sensitizing users of imperial languages to the local Indigenous flora and fauna (Chung & Chung Arsenault, 2023).

Integrating CALL into the critical ecological classroom necessitates that instructors undergo a process of "becoming", a reflective process related to context-specific events within language teaching and learning, that are understood as a system of complex, dynamic, "ongoing,

singular, and unpredictable transformations of [teaching and learning] potentials that cannot be reproduced" (Bangou, 2022, p. 3). This could involve teacher reflection exercises that focus on the relationship between land and language (Chung & dela Cruz, 2024). According to Lafford (2019), critical ecological CALL pedagogy is facilitated when there is access to and transparent usage of technology, adequate training, and ease in using the tool, and when activities task students to reflect on the relationship they are building with the target language/culture via their "criteria, perspectives, practices and products" (p. 137). Such activities can involve examining learning software and materials for diverse representation (the basis for Manuscript A), reviewing the use of social media for misinformation, or involving translanguaging activities, "the fluid mixing of semiotic codes irrespective of named languages" through and with technology (Ortega, 2019, p. 31). Criticisms of critical ecological CALL include pedagogies that do not lead to concrete action, driving social change learners or that reflect superficial understanding of linguistic and cultural differences, perpetuating stereotypes (Lafford, 2019).

To address these criticisms, Ramírez and colleagues (2021) created a critical ecological CALL manual with rubrics that check for social justice orientations in lesson planning, and provide examples of specific socially-justice oriented tasks, like telecollaboration with marginalized communities, equity in teacher and student training on technology, and translanguaging activities via social media. For CALL to survive as a field, Hubbard and Colpaert (2019) state that it must continue to be transdisciplinary (i.e., encompassing diverse theories, models, and frameworks), so as to "understand and control the mediating function of technology in language learning and teaching" focusing on institutional structures in education (p. 87).

In this dissertation, I follow a critical ecological CALL framework for examining imperial L2 teaching and learning. In the first study (Manuscript A), I interview instructors of imperial languages and analyze their computer-based audiovisual materials for representation of diverse speakers, which examines their ideological charge. In the follow-up study (Manuscript B), I follow van Lier's (2011) ten principles to develop Parlure Games, a critical CALL tool that presents authentic material from diverse voices of the L2, visualized on a map. Activities are focused on perceiving differences in the target language and discussing these perceptions as they relate to the ethics of learning an imperial language with such geographic sprawl, cultivating a moral stance toward teaching and learning that language.

The audiovisual materials used in Parlure Games are hosted on Google-based applications (e.g., Google maps, Google forms), which are familiar to learners, and are presented in non-linear ways (i.e., via hypermedia links to content), promoting efficacy as it relates to multimodal learning (aural, visual, tactile) and facilitating dyadic and triadic communication, thereby improving communicative competence (digital fluency). Following Lafford's (2019) observation that ease of use facilitates critical ecological CALL pedagogies, Parlure Game users complete the Technology Acceptance Model 2 (Venkatesh & Davis, 2000) survey, which measures user behaviours (i.e., "perceived ease of use" and "perceived usefulness) toward a new technology. This model is widely recognized for its reliability in predicting the acceptance of a technology at pre-and post-implementation (e.g., Johnson & Cardoso, 2024; Sundberg & Cardoso, 2022). In order to describe what constitutes L2 learning in a critical ecological CALL classroom, an in-depth overview of key terms and concepts used in this dissertation must first be defined.

Key Terms and Concepts

In this section, I introduce and define several important terms and concepts essential to this dissertation. In the first part, I define language, relating it to individual voices and then to dialects. In the second part, I describe the process of language learning as a differentiation skillset, review the two language models that demonstrate how it functions, discuss current audiovisual L2 research in high variability phonetic training (HVPT) methodologies, and connect these issues to current L2 teaching goals focused on intelligibility.

Language and Dialect

Language is discussed in three ways: first, the faculty of language, its relationship to social speech markers (i.e., voice), and how it is connected to dialect.

Faculty of Language. Linguistic anthropologists cannot confirm with certainty how human language first emerged. Many theories have evolved from observations on older, non-human primates (e.g., monkeys) with whom we share broad faculties, like sensorimotor skills (e.g., vision, gestures, and vocal utterances), which enable us to multimodally navigate our environment, sharpening our perception (Rauschecker, 2018). For example, we share the skill of perceptual categorization—the ability to identify boundaries in and differentiate between colours, gestures, or sounds (e.g., those that distinguish meaning in a language - phonemes; Kuhl, 2000). Linguists claim that what truly differentiates man from monkey is our narrow language faculties, specifically the "computational mechanism for recursivity", enabling us to express limitless strings of syntax via the choreographed articulations of our intricate voice boxes and written communication (Hauser et al., 2002, p. 1569). While this dissertation focuses on narrow issues of spoken language, it provides a more ecological perspective by also including

broad-based skills (e.g., visual perception), sometimes referred to as non-linguistic information, discussed next.

Social Speech Markers. Focusing on narrow issues of human speech, spectrogram measurements show that no speaker produces the same utterance with identical phonetic patterns (Shankweiler et al., 1977), making speech a highly variable signal. The speech signal is comprised of both linguistic (i.e., the message) and non-linguistic information. An individual's "voice" is their acoustic fingerprint, marking the linguistic contents of their speech with unique non-linguistic information, called social speech markers (Laver & Trudgill, 1979). Building on Abercrombie's (1967) notion of physiologically and socially embodied indexicality, social speech markers are co-learned and shared with other interlocutors in the community, indicating membership within a group (Pitts & Gallois, 2019), and can also be abstained from or changed to mark independence from a group (van Lier, 2004).

Social speech markers are generally divided into extralinguistic markers, inherited and unlearnable physiological traits (e.g., vocal tract size, age), and paralinguistic markers, learnable and mimicable social traits (e.g., education, class) that adapt to changes in physical (e.g., stuffy nose) or emotional (e.g., excitement) states (Laver & Trudgill, 1979). The linguistic contents of the speech signal cannot be separated from its speaker or the social context, meaning that language emerges out of a social need to communicate within a given space (Labov, 2006). Chapter two of this dissertation focuses on the social speech markers in audiovisual materials and considers their role in L2 acquisition, a learning process involving social context (van Lier, 2004), like the physical environment (Steffensen, 2024), something that dialects allow us to consider.

Dialect. Some language researchers maintain that there is no definitive way to distinguish languages as discrete units (Saraceni, 2010); however, for dialectologists, language is an umbrella term for its many dialects (Chambers & Trudgill, 1998). Dialect has multiple meanings across languages. In English, dialect has been historically used to devalue and stigmatize the language used by tribal peoples, with the term patois specifically used for African languages (Phillipson, 1992). In French, *dialecte* is a regional variety with a literary canon, differentiating it from a patois, a spoken regional ethnolect with no such canon (Hall, 2018). In German, *dialekt* denotes a speaker with no knowledge of the standard (Trudgill, 2011), and in Italian, *dialetto* speakers are often unintelligible to one another (Wardhaugh & Fuller, 2015). Dialectal differences are naturally occurring, and analyzable in according to geography (diatopic), generation (diachronic), social class (diastratic), stylistic choice/formality (diaphasic), and medium (diamesic; Vincent, 2012), resulting in a continuum of dialects within a language (Wardhaugh & Filler, 2015). Linguistically, these differences can be measured by the unique choreography of phonetic (e.g., accent), lexical (e.g., words or expressions), grammatical (e.g., syntax), modal (e.g., gestures), and pragmatic (e.g., situational context) features that make it socioculturally distinct from another dialect (Nycz, 2015). For example, from a phonetic standpoint, the accent of a dialect is viewed as a clustering of phonologically-consistent patterns by members of a speech community located in a particular area who author changes to it over time through socialization (Pierrehumbert, 2016). The regional and social dialects of an imperial language, however, might involve naturally occurring differences, but are the consequence of reterritorialization from its ancestral territory and transplanting itself onto foreign lands (Saraceni, 2010).

By contrast, the standard dialect is not naturally occurring (see full definition below); it is prescriptive, and its pronunciation and spelling are often codified in dictionaries and academies (Fairclough, 2015), making it resistant to change (Spolsky, 2002), and as a result, tacitly accepted as the norm within a given region or social space (Ender, 2022). This makes the standard easily identifiable from other social or regional dialects, and has sometimes been employed by speakers of a local dialect when addressing immigrants to their region (Ender, 2017). Raciolinguistic research demonstrates that standardized dialects of imperial languages, like English or Spanish, is often centered on the speech voiced by white (extralinguistic), middle-class (diastratic) speakers in the local urbanized environment (diatopic; Curzan et al., 2023), and deemed a socioculturally advantageous register (diaphasic) compared to social dialects in other regions (Valdman, 1989), like those voiced by racialized and/or L2 speakers (Flores & Rosa, 2015; Rosa & Flores, 2023). This inseparability between the extralinguistic marker of race with imperialism, particularly within settler colonial contexts, often results in L2 teachers internalizing and inadvertently replicating racism in their pedagogical practices (Bale & Lackner, 2022).

Finally, dialectal speakers are often mutually intelligible, commonly sharing lexical, grammatical, and phonological inventories, differing only in certain words, phrases, or pronunciations at the segmental (e.g., consonants or vowels) or suprasegmental (e.g., prosody; Nycz, 2019) level. For example, Parisian and Québec speakers share a high level of grammatical similitude, but the latter group differentiates itself phonetically by diphthongizing vowels, like the /ɛ/ in fête becoming /aɪ/, compared to their Parisian counterparts (e.g., Riverin-Coutlée & Roy, 2022). In instances where mutual intelligibility is low, interlocutors are viewed as speaking in different languages. However, communities can still form over non-linguistic features, like

shared geography or culture. For example, even though Mandarin is unintelligible to Cantonese speakers, interlocutors nevertheless consider themselves to be speakers of differing dialects, not languages, sharing similar cultures and inhabiting a common territory: China (Wardhaugh & Filler, 2015). However, even when geography is shared and mutual intelligibility is high, sociopolitical changes (e.g., balkanization of states or independence movements) can cause speech communities to view each other as speakers of different languages, as is the case with Serbian and Croatian, who share a 98% similitude for their phonological, syntactic, and morphological features (Bailyn, 2010).

In this dissertation, spoken dialect is the unit of analysis in both manuscripts, focusing on both natural (e.g., regional or social) and prescriptive (e.g., standard) dialects, and their linguistic (e.g., accent, lexis) and non-linguistic (e.g., physiology, region) features. In the following section, I turn to the theories and models related to acquiring a second dialect or language.

Language Learning

We listen twice as much as we speak, three times more than we read, and five times more than we write (Weaver, 1972), making the act of listening a critical skill that significantly influences other language skills and the reason it is focused upon in this dissertation. In this section, I examine four dimensions of language learning: first, the importance of differentiation skills; second, how L2 learning models demonstrate the acquisition of this attunement skillset; third, a review of optimal L2 oral speech training methodologies (e.g., HVPT); and finally, the intelligibility goal for current L2 teaching and learning practises.

Differentiation Skills. Differentiating between diverse languages, dialects, and individual speakers is a foundational cognitive skill, and without it, all languages would be indistinguishable (Larsen-Freeman, 2020). The perceptual magnet effect explains that this

differentiation skillset is developed in utero with the prosodic patterns of the mother's speech reverberating through her bones, "warping" her infant's aural-neural network in tune with her speech patterns (Kuhl, 2000, p.11850). By one year old, the acoustic network is sufficiently warped to differentiate between segmental (consonants and vowels) contrasts in the first language, a process achieved by pruning back—not eliminating—other contrasts not attested in the L1 (Werker, 1995). Since the general process of auditory discrimination remains intact, L1 acquisition cannot be framed as a loss of perception for other languages; rather, it is viewed as a sum of the learner's aural experiences that creates a "phonological filter" through which all additional varieties are perceived (Flege & Bohn, 2021). "Army brats" (children of military personnel), a highly mobile population routinely moving to different cities and countries, are an example of how early multi-geographical social experiences warp the phonological filter, resulting in differentiation skills that are more accurate than their comparatively less mobile, and more monodialectal counterparts (Clopper & Pisoni, 2004a). This depicts the phonological filter as in constant flux and socially adaptive to each communicative experience (Larsen-Freeman, 2020), a process sometimes referred to as exemplar-based learning, which involves sociophonetic learning that clusters in analyzable patterns, defining the speech of a particular community or ecosystem (Pierrehumbert, 2006).

L2 Learning Models. Models help to explain and demonstrate language learning (VanPatten & Williams, 2015), and differentiation has been described as an attunement process for sociophonetic variation. For example, the Perceptual Assimilation Model describes how in the early learning stages, direct perception of the environment transforms adults' phonological filter, resulting in a "naive" assimilation process that unfolds in predictable steps when confronted with non-native phones (Best, 1995). This learning stage focuses on honing

attunement skills for the L2's phonetic constellation (Best & Tyler, 2007), mapping the phonological space with the L2's acoustic highs, and particularly its lows (i.e., vowels; Pierrehumbert, 2016). Once adults have garnered sufficient attunement experience with diverse speakers, they reach an intermediate stage, whereby the Revised Speech Language Model describes the L2 filter as able to "delink" and work independently from the L1; a phonetic process that ultimately affects L2 pronunciation (Flege & Bohn, 2021).

Communicative interactions provide crucial attunement opportunities for L2 perception and production, and for forming social bonds (i.e., accommodating one's speech to the community) or establishing distance (i.e., not accommodating one's output; Nycz, 2019). Both L2 models incorporate exemplar-based sociophonetic learning where linguistic content is inseparable from its speaker and social context, and which occurs in noticeable patterns that are socially significant for L2 learners (Foulkes & Doherty, 2006), updating their phonological space (Pierrehumbert, 2016). In Manuscript A, I examine what kinds of dialectal variation are used in imperial L2 audiovisual materials, which provide a glimpse into the kinds of speech communities learners are expected to attune their phonological filters to and to form social bonds with. Exemplar learning, however, has ceiling effects (saturation point) and also cannot account for learning that occurs from a single exposure (i.e., fast-mapping), prompting advocacy for hybrid learning models (Bybee, 2001).

HVPT. All sensorimotor skills (e.g., visual, aural) benefit from attunement training that is highly variable (Raviv et al., 2022). Developed by a trio of studies, high-variability phonetic training (HVPT) is a computer-based methodology that focuses on aural attunement for L2 phones not attested in learners' L1, and is linked with more accurate L2 perception that transfers

to new voices and novel words (Lively, et al., 1993; 1994; Logan et al., 1991). HVPT forms the basis for the CALL tool used in Manuscript B: Parlure Games.

To develop this methodology, this trio of studies partially replicated Strange and Dittman's (1984) methodology, using the same bank of English words that contain the /r-l/ contrast (i.e., rock/lock), a contrast known to be difficult for Japanese ESL learners as these phones do not exist in their L1. Strange and Dittman used synthetic training inputs (i.e., computer-manipulated voices that exaggerated the voice onset timing for /r-l/) and found that ESL learners were able to extend this learning for discrimination and identification tasks, an outcome they attributed to using real words which provides positive evidence of the phonetic contexts that /r-l/ naturally occur in. However, this phonetic learning did not transfer to stimuli voiced by humans. By replacing computer-manipulated voices with several human voices speaking real words, the trio of studies trained L2 listeners to acoustically habituate to the diverse and fluctuating extralinguistic and paralinguistic social speech markers, shifting their attentional resources from individual talker-specific idiosyncrasies to understanding the linguistic contents of the speech signal (Pisoni et al., 1994), supporting intelligibility (see below). As later research would find, speech sounds induce a stronger response from the brain, making them easier to remember than non-speech sounds (Johnson & Sjerps, 2021).

This methodological change by the trio resulted in five important characteristics of HVPT training that stimuli: (1) include real words, (2) be voiced by humans, (3) be comprised of at least five voices, (4) involve multiple exposures and immediate feedback to stimuli presented in identification over discrimination tasks (as the former requires more cognitive resources and are better candidates for long-term learning), and finally, (5) ensure that training conditions align with testing conditions to validate L2 learning outcomes for learners. Later HVPT research

revealed that this perceptual attunement for difficult phones transfers to L2 production (Bradlow et al., 1999), and also to learning second dialects in the first language (Clopper & Pisoni, 2004b), underscoring that the mechanisms involved in learning a second dialect are the same ones engaged when learning an L2, making interlocutors multi-dialectal in their respective languages (Major, 2001). Ultimately, what constitutes successful acquisition of a second dialect or second language varies from the ability to notice a particular linguistic feature, to producing for specific communicative needs, or having it replace a previously learned feature (Siegel, 2010), all of which vary according to stylistic register and across different points in the L2 learners' lifetime (Pierrehumbert, 2016).

While HVPT training lengths have varied over time (Barriuso & Hayes-Harb, 2018), the size of training sets is encouraged to be relatively large and include more than just difficult phones, as this allows for attunement to a "wider range of auditory parameter combinations [… that provide] a richer learning opportunity […] to increase learners' awareness of differences" (Nishi & Kewley-Port, 2007, p. 1507), thereby developing the phonological space. In fact, using HVPT training to explore and sharpen dialectal attunement skills was specifically advocated for by Schoonmaker-Gates (2017) to support learning L2 regional dialects and improving their phonetic discrimination and comprehensibility ("the listener's perception of how easy or difficult it is to understand a given speech sample"; Derwing & Munro, 2009, p.478), known issues for L2 learners (Lam & O'Brien, 2014; Walz, 1986).

Current HVPT research has moved past focusing solely on segmental and suprasegmental (e.g., prosody) features of oral speech, towards multimodal research involving audiovisual processing (e.g., facial expressions; Hardison & Pennington, 2021). This transforms the once linguistic repertoire into a communicative one, where acoustic perception is part of a suite of

multi-sensorial, affective, and semiotic (e.g., signs, music, technology) mechanisms that learners use for social navigation and expression (Wei & García, 2022). To date, HVPT findings remain largely tethered to the laboratory setting with researchers trying to extend its multi-speaker learning principles to L2 classrooms (Barriuso & Hayes-Harb, 2018). As we discussed in Chapter Three, the development of Parlure Games provides such a means to incorporate HVPT methodologies into the L2 classroom.

Intelligibility Principle. Finally, the goal of current communicative language teaching pedagogies has shifted from a focus on achieving native-like control to an intelligibility principle, defined as "the degree to which a listener understands a speaker's intended message" Levis, 2020, p. 277), ultimately reflecting the relationality between speakers (Saraceni, 2010). Speech is considered intelligible at the lexical level when individual words can be identified and decoded, and at the utterance level when the content and intent of the message are understood (i.e., illocutionary force; Levis & Silpachai, 2022). Intelligibility can be assessed via answering comprehension questions or true/false statements about content (activities used in the development of Parlure Games), dictations (e.g., counting percentage of correctly transcribed words), and producing summaries (Derwing & Munro, 2009). Levis (2020) also contends that intelligibility supports comprehensibility and the learning of accentedness ("how different a pattern of speech sounds compared to the local variety", often affected by speech rate; Derwing & Munro, 2009, p.478). While the former is assessed by the amount of time or effort it takes to process the utterance, the latter by how heavy or light the accent is considered to be, both can be assessed via Likert scales (Derwing & Munro, 2009). Intelligibility, comprehensibility, and accentedness are related constructs, and the first two are highly correlated; however, speakers who are perceived as strongly accented can also be highly intelligible (Levis, 2020).

While L2 proficiency generally supports better discrimination between L2 dialects, it does not predict higher intelligibility (Lam & O'Brien, 2014). Studies show that L2 learners often exhibit greater comprehension of standardized dialects because it is what they are mostly exposed to and tested on (Genesee, 1987). For example, ESL listeners in New Jersey (USA) demonstrated better listening comprehension for standard and regional (e.g., Southern American English) dialects compared to African American English (AAE) and international dialects (e.g., Australian; sub-continental Indian; Major et al., 2005). Even when ESL learners produce elements of a particular social dialect (e.g., AAE), they nevertheless rate the standard as more intelligible and likable than AAE and regional dialects like New Yorkese (Eisenstein, 1986). Researchers advocate for more dialectal exposure and explicit cross-linguistic analysis between learners' first and second language (see chapter eight of Ehrlich & Avery, 1992, which provides an overview of segmental and suprasegmental differences between English and 15 world languages). Such approaches are noted for their sociocognitive benefits in supporting intelligibility (Pierrehumbert, 2016; van Lier, 2004).

In this dissertation, attuning to sociophonetic diversity is what defines language learning. This process occurs through interactive experiences at the dialectal level, operating within an exemplar-based model that shapes learners' phonological space for better L2 attunement (Tyler et al., 2024). HVPT supports multi-dialectal and multilingual learning by habituating learners to diverse speech markers, shifting their attention to understanding linguistic content, and promoting robust L2 perception and production skills, both linked to increasing intelligibility. As such, the curricular tool developed in this dissertation, Parlure Games, is HVPT-based and supports noticing sociophonetic differences between dialects, responding to calls for L2 education to provide multidialectal classroom materials (Baker & Smith, 2010; Curzan et al.,

2023; Lam & O'Brien, 2014; Schoonmaker-Gates, 2017; Siegel, 1999; van Lier, 2011; Wolfram et al., 2023). Using this interactive audiovisual learning tool also includes answering comprehension questions related to content, thereby supporting current L2 intelligibility goals. However, implementing this critical ecological and plurilingual tool in the classroom is complicated by the imperial history of L2 teaching and learning in Canada, a topic we explore next.

The Ecolinguistics of Imperial L2 Teaching and Learning in Canadian Classrooms

To examine imperial L2 teaching and learning practises in Canadian classrooms, I first define linguistic imperialism (including the role of media imperialism), then situate Canada's settler colonial context within the larger waves of colonialism, and finally describe how it is connected to standard language teaching and learning in the context of Québec, where this study takes place.

Linguistic Imperialism

The bulk of our knowledge about L2 acquisition comes from research on learning imperial languages like English, French, and Spanish (Levis, 2021; Macedo, 2019); empires which have established diverse colonies across the globe (e.g., penal, plantation, settler; Veracini, 2022). Historically, empires use military force for the purpose of "civilizing" or educating the Indigenous members of a foreign territory, a process it refers to as "modernization" (Phillipson, 1992, p. 44, 50). Imperial languages are defined by their ability to deterritorialize from their ancestral homeland, and reterritorialize onto foreign lands, spreading the language through hierarchical structures and policies, eliminating other languages also found on the territory (Motha, 2014). This reterritorialization, or "relocating" of imperial languages, results in a rise in regional and social varieties that reach different levels of stabilization and recognition

and have been viewed as both detrimental and facilitatory towards global communication (Saraceni, 2010, p. 131). Reterritorialization is viewed as a three-pronged semiotic process involving iconization (indexing behaviours, activities or features as inherent to a particular group and normalizing them), which spurs fractal recursivity (a "dichotomizing and partitioning" action that creates sub-categories with other groups in the region), and aims at the erasure of any aspect "inconsistent with the ideological scheme" (Irvine & Gal, 2000, p. 38), including the use of genocide (Wolfe, 2006). Monolingual policies (e.g., English-only or French-only) have long been a strategy for iconizing an imperial language onto foreign lands, ensuring its intergenerational survival.

Imperial policies both officialize and restrict language use. For example, section 133 of the British North American Act (1867) and the Official Languages Act (1966) officialize English and French in Canada, and Québec's Bill 101 French signage laws restrict the visibility of other languages on public signs, mandating the predominance of French to promote and protect it. Controlling signage on the linguistic landscape is a common reterritorialization strategy of imperial expansionism to claim ownership over unceded lands, like the Nazi Lebensraum did to expand their territory in Europe. This often involves assigning allochthonous toponyms (geographic names) to erase evidence of the pre-existing autochthonous people (Woodman, 2007), ultimately endangering local Indigenous ecosystems—peoples, animals, plants, and waterways (Skutnabb-Kangas, 2003). Exonyms refer to geographic names differing from the name used by those well-established in that area, often imposed by allochthonous peoples (e.g., Londres is a French exonym for London; Kadmon, 2007). For example, "new" England, "nouvelle" France, or "nueva" España, all erase evidence of Indigenous inhabitants. Endonyms are toponyms derived by those autochthonous to the region (Kadmon, 2007), but whose

pronunciations are often altered to the phonotactic constraints of allochthonous residents, obscuring Indigenous names (Jordan et al., 2007). Canada, for example, can be considered an endonym of the Kanien'kehá word "kanata", referring to the lieu-dit of Kanien'kehá:ka Chief Donacona's village (Stadacon) along the St-Lawrence Valley region (Government of Canada, 2025). Canada's linguistic reterritorialization of the northern section of Turtle Island coupled with its use of endonyms and exonyms demonstrates how French and English imperial structures have been implanted in the macrosystem, serving to obscure the over 630 First Nations, Inuit, and Métis communities (Statistics Canada, 2024) who continue to survive ongoing colonization.

Currently, linguistic imperialism is considered "a variant of linguicism operating through structures (e.g., socioeconomic trade, signage, media) and ideologies (e.g., racial and religious policies), and entails unequal treatment for [other linguistic] groups" (Phillipson, 2009, p. 131), resulting in a prestigious dominant centre (e.g., inner circle English) and less prestigious peripheries (e.g., outer and expanding circle English; Kachru, 1985). Media imperialism, sometimes referred to as a form of cultural imperialism, emerged in the 1960s during colonial liberation movements and is defined as:

> A diversity of complex…private and public institutions…systems, industries, and products of older empires (e.g., British, French), and once subalternized or peripheral countries (e.g., China, Brazil)…spread[ing] from countries that evince considerable media ownership, distribution, and impact, within a given geocultural zone but are themselves [influenced] by other imperial powers [across time] (Boyd-Barrett & Mirrlees, 2020, p. 1-2).

Mass media, a type of media imperialism, is characterized as a multi-billion dollar "propaganda model" with five pillars designed to "inculcate individuals with the values, beliefs, and codes of

behaviour that will integrate them into the institutional structures of larger society", and its highly filtered content legitimizes (or iconizes) which classes are "worthy" of broadcasting time (Herman & Chomsky, 2002, p.1, 37). Therefore, unlike traditional imperialism, mass media imperialism does not require territorial annexation for its expansion. In this dissertation, I focus on structural aspects of French (Manuscript A) and English (Manuscript B) imperialism through the analysis of audiovisual materials, which are drawn from diverse media sites, including mass media.

Waves of Colonialism

In this section, I recapitulate Veracini's (2022) description of colonialism (derived from the Latin *colere*, to cultivate, p. 7), which refers to the implantation of allochthonous peoples and policies to expand the empire. Starting from the 1400s, Veracini traces six waves of global colonialism, with each wave building on another, and all waves principled on "unequal relationships predicated on displacement […] and violence" (p.1). The first wave of colonialism involves mass resource extraction that often involves the enslavement of the local Indigenous population (e.g., gold mining in what is now called Mexico). The second wave involves the development of a plantation system, requiring technological advancements, and highly orchestrated trade routes to traffic items and people (e.g., plantations in Brazil shipped sugar to North America and Europe while trafficking people from West Africa via the Transatlantic Slave Trade, which was responsible for the socioeconomic development of The Americas). Both waves are conceptualized via a binary relationship between Indigenous versus non-Indigenous peoples, resulting in a massive reduction in Indigenous populations through extreme violence and germ warfare (e.g., smallpox, influenza). The third wave, settler colonialism, involves the total appropriation of a foreign territory, so that colonizers can live independently from their ancestral

homelands and replace the local Indigenous population. The binary relationship becomes a triangular one "simultaneously pitted against Indigenous…and against a variety of exogenous (non-Indigenous) peoples", like previously enslaved peoples from the second wave or newly arriving immigrants sourced from outside the motherland (p. 76). The fourth wave marks a neo-mercantile era of free trade among the network of extraction, plantation, and settler colonies, located in their metropolises, ushering in a fifth wave, which involves capitalist systems that exclude competitors, leading to repressively driven socioeconomic operations. The final wave of colonization is composite, involving neocolonial experiments (e.g., pre-revolutionary Cuba), colonial alliances (e.g., League of Nations Mandates), and a marked rise in fascist aggression to enforce colonial borders. Veracini (2022) describes decolonization not as an end to these waves, but as a process involving the recovery of pre-colonial traditions and a unification among diasporic peoples (e.g., Pan-Africanism) who were repressed by colonizers.

As noted in the introduction, Canada is a settler colony where French and English colonists asserted independence from their European motherlands by seizing a foreign territory and claiming it as their own. This involved the violent dispossession, displacement, and genocide of Indigenous peoples using exclusionary policies (e.g., Indian Act) and institutions (e.g., Residential and Day schools) to strip them of their land rights. Settler colonial languages are allochthonous and iconize the linguistic landscape using policies that marginalize (i.e., enact fractal recursivity) for other allochthonous (e.g., immigrant) languages, but specifically aim to erase and obscure evidence of those Indigenous to the territory (Sterzuk, 2011; 2015; 2020). Despite declaring itself multicultural in 1988, Canada still only officially recognizes English and French, ensuring the intergenerational survival of Eurocentric languages at the expense of all other languages on the territory (Haque, 2012), resulting in the linguicide of over 400 Indigenous

languages and the endangerment of the remaining 50 languages (Wernicke, 2021), as well as the marginalization of non-imperial allochthonous languages. Settler colonial nations, therefore, are historically uninterested in linguistic diversity because it threatens their nationhood (Oakes & Peled, 2018), making it purposely difficult to implement multilingual policies, particularly in the language classroom—a topic I explore next.

Standard Language Learning and Language Education

As mentioned in the Dialect section above, the standard is not naturally occurring. As Fairclough (2015) explains, this middle-class, urban dialect is used to edge out a competing dialect or language from a delimited territory and is connected to the nation's capitalist ventures, described as a "long process of colonization [… taking] over major social institutions" (p. 84). For example, the Ordinance of Villers-Cotterêts of 1539 officialized French as the language of France, replacing Latin. This spurred a uniformizing policy and, in 1635, the Académie française was created to monitor the language from incorporating allogeneous (i.e., non-French) features, and restricting the teaching of regional dialects (e.g., Alsatian, Corsican; Offord, 1996). Standardization involves codification (e.g., academies, dictionaries) and diffusion (e.g., mass media, textbooks) methods for its pronunciation and spelling, a process that stabilizes a dialect over time and during imperial expansion (Spolsky, 2002), making it resistant to change or koineization (mixing, leveling, and simplifying features from several varieties into a new variety via the realization of phones, morphology, and syntax; Kerswill, 2013). This results in the dialect being kept "pure" (Curzan et al., 2023, p. 25), that is, exhibiting low variation in its social speech that it is often indexed to its white native speakers (Flores & Rosa, 2015; Sterzuk, 2015), thereby socioculturally lacking localized features known to be important for social belonging (Kuo, 2006). As such, standards are considered a "supra-regional" norm (Ender, 2022, p. 63), and often

positioned as a lingua franca (Ender, 2017), that are supposed to serve as a bridge for learning about regional and social varieties (Valdman, 2003).

Within L2 education, the standard is sometimes referred to as a pedagogical grammar (Spolsky, 2002), and is associated with academic success (e.g., TOEFL testing; Fairclough, 2015, p. 84), engendering positive attitudes towards it, and facilitating its acquisition (Major et al., 2005). For decades, researchers have specifically advocated for its use in classrooms, explaining that learners are socially disadvantaged by their L2 status, so raising their social capital should entail teaching them the most prestigious dialect (Valdman,1989; 2003), meaning that introducing natural dialects, like regional, social and situational variation, is often delayed or wholly negelected.

There is considerable debate within L2 teaching and learning research regarding "the complexity learners can handle and the adequate amount of linguistic variation" that should be introduced (Ender, 2022, p. 61). Some advocate for it being introduced as early as possible, particularly for stylistic variation (e.g., register; Etienne & Sax, 2009), using tasks like transcribing spoken languages (e.g., noticing the deletion of "ne" in negative oral constructions of French; French & Beaulieu, 2020). Others state that variation should be reserved for intermediate levels—a time when learners are theorized to have already achieved a great deal of sociophonetic experience with the language (Flege & Bohn, 2021)—and when a perceptive tolerance, "the ability to cope with different kinds of sociolinguistic variation without irritation and difficulties, understand language as a means of power and control, and get a positive and reflected stance toward linguistic diversity" (Ender, 2022, p. 65), has been reached.

This dissertation cannot resolve this issue; however, L2 research shows that when intermediate-level L2 students are trained on phones that do not exist in their first language,

phonetic learning is more accurate when this training occurs for the full-set of foreign phones over training on a sub-set (Nishi & Kewley-Port, 2007a), even when the training is staggered over different time periods (Nishi & Kewley-Port, 2008), or when training reserved for only "difficult" phones (Nishi & Kewley-Port, 2007b). This suggests that exposing learners to a wider variety of social, regional, or situational variation from the get-go may benefit their L2 attunement rather than reserving variation for a later learning period. In sum, while a pedagogical norm is viewed as the more socioeconomically and socioculturally prestigious dialect to acquire (van Lier, 2004; Valdman, 2003), it cannot offer diverse enough phonological attunement opportunities that contribute to intelligibility, or afford social interaction with diverse voices; therefore, serving to perpetuate the very inequalities that it was designed to avoid.

Hormann (1947) observed that "the aim of establishing standard English can actually be best accomplished by a more complete understanding and appreciation of the local dialect" (p. 76). Hormann was, in fact, responding to twenty years of criticism that Hawai'ian ESL classrooms promoted class and race-based learning focused on a foreign, specifically haole (white "Western foreigners", like missionaries and capitalistic entrepreneurs; Trask, 2004, p. 11) standardized dialect, which stigmatized the local Hawai'ian English Creole that has socially bonded many islanders over the generations, calling it a "desecration" (Hormann, 1947, p. 75). Within Canadian L2 education programs, pedagogies have also historically focused on standardized varieties of English and French language learning (Lau, 2022; Sterzuk, 2015), with teachers largely viewing their students' first or other known languages as less socially valuable or as interference, making them deficient L2 speakers (Wei & García, 2022). Such monolingualism reduces opportunities for phonologically attuning to diverse social speech

markers, a skillset linked to robust L2 learning (Barriuso & Hayes-Harb, 2018), and required for social navigation in multilingual environments, like cities (Pennycook & Otsuji, 2019).

Despite current research supporting Hormann's observation that multi-dialectal learning is sociophonetically (Clopper & Pisoni, 2004a), socioculturally (van Lier, 2004), and multi-modally (Wei & García, 2022) advantageous to developing robust L2 skills, monolingual orientations persist in L2 teaching programs in both the United States and Canada because their languages are settler colonial ones (Battiste, 2013; Macedo, 2019; Pennycook, 2021). Plurilingualism typically does not advance imperial interests; rather, it threatens them, making it in the colony's best interest to maintain assimilationist ideologies (e.g., monoculture) for its intergenerational survival (Irvine & Gal, 2000; Oakes & Peled, 2018). It is the goal of this dissertation to challenge these notions. In the classroom, sociophonetic learning, or the attunement of the phonological filter (Best, 1995; Flege & Bohn, 2022), involves teachers deciding how much and what kinds of variation are appropriate for their learners. This was the motivation behind Manuscript A, which investigates how much and what kinds of variation (i.e., social speech markers) L2 learners of an imperial language are exposed to via their audiovisual materials. Based on these results, Manuscript B describes the development of an interactive online tool that supports sociophonetic learning of varieties identified to be missing from the audiovisual input.

Study Context

This dissertation analyzes imperial (i.e., French and English) L2 teaching and learning in Canadian classrooms. Despite conflicts, both the English and French have colluded since contact to displace and divvy up the unceded territory from a mari usque ad mare into provinces and territories, imposing their allochthonous Eurocentric sociocultural norms via hierarchical

structures and intergenerational policies. Canadians descended from early English and French habitations, referred to as “old stock” or “pure laine”, are considered founders of the colony (Oakes & Peled, 2018), with their longer length of residence on the unceded territory viewed as the most legitimate in the settlement. I focus on L2 teaching programs in the province of Québec—the only official monolingual-French settler colony in Turtle Island. Québec is a gallicized Algonquin endonym, meaning “narrow passage” or “strait” (Government of Canada, 2025). Like most Indigenous languages, this endonym encodes waterborne geographical knowledge (Stringer, 2024), but does not specify which of the nine Algonquin First Nations language it originates from (Abenaki, Anishinaabe, Attikamekw, Eeyou, Cree, Malecites, Innus, Mi'qmaq and Naskapi), and excludes the Iroquoian (Kanien’kehà:ka; Huron-Wendat) toponym for the region, serving to simplify and obscure the diversity of autochthonous people in the delimited territory. In fact, Québec has a history of gallicizing Indigenous toponyms, a reterritorialization move that promotes French domination in the province and is aimed at l’élimination des noms autochtones « barbares » et leur remplacement par des toponymes français « cultivés » [eliminating “barbaric” native names and replacing them with “cultivated” French toponyms] (Di Gangi, 2010, p. 2). As a result of continued French dominance in the province, the other settler colonial language in the region (English) is relegated to L2 learning in francophone primary and elementary schools, where ESL teachers must additionally pass a French proficiency test for their certification (Riches & Parks, 2022), making teachers functionally bilingual.

Specifically, the studies in this dissertation take place on the island of Tiohtiá:ke (reterritorialized as Montréal in 1634), which serves as a natural stopping point for many of the aforementioned First Nations travelling along the Kahrhionhwa'kó:wa, the largest waterway in

the territory because of the kahnawà:ke (rapids) around the island, engendering a multilingual space. As described earlier, during colonization, the island landscape provided multiple access points for several military and commercial ports (Nelson, 2016), equally supporting multilingualism of diverse allochthonous groups. Although Montréal has the most trilingual speakers in Canada, with residents having fluency in both settler colonial languages and another allochthonous language (Statistics Canada, 2021), it is nevertheless referred to as "une ville française, pluriethnique et plurilingue" (Laporte, 1993, p.3). The ongoing monolingually-oriented teaching and learning of French and English in Canada constitutes ongoing settler colonial reterritorialization.

The studies in this dissertation, briefly described below, both reject the monolingual orientations of imperial L2 teaching and learning because they inhibit robust L2 learning and perpetuate ongoing colonialism, and instead specifically advocate for an inclusive curriculum, defined as reducing barriers to classroom participation (UNESCO, 2017), including linguistic barriers. To action this, pedagogical focus is not on standards of the local settler colonial language alone but on differences between multiple dialects using cross-linguistic analyses involving multimodal materials (e.g., interactive audiovisual materials, online mapping comprehension questions), so as to "counter dominant, seemingly unassailable [imperial] ideologies in non-confrontational ways" (Wolfram et al., 2008; p. 1109). When these plurilingual pedagogies involve learning about the people, stories, and languages Indigenous to the territory the imperial L2 classroom is implanted upon, it interrupts Canada's ongoing reterritorialization, unsettling the settler and moves towards the goal of decolonizing the classroom by Indigenizing the curriculum (Battiste, 2013; Tanchuk et al., 2018), an issue we discuss in Chapter three.

In sum, to avoid replicating the monolingual reterritorialization inherent in imperial L2 pedagogies, the goal of this dissertation is to promote plurilingual learning of the imperial languages of English and French across dialects, while also sensitizing imperial L2 instructors and learners to the relationship between land and empire via critical ecological CALL pedagogies. To accomplish this, the two studies in this dissertation (overviewed in the section below) are designed to first analyze how linguistically diverse the imperial L2 classroom is, by focusing on the voices found in the audiovisual materials (Manuscript A), and in response to these findings, to then develop a critical ecolinguistic technology (i.e., Parlure Games) featuring voices identified to be missing from that curriculum using an online map (Manuscript B). This plurilingual land-sensitizing pedagogy, termed Landguaging (see concluding chapter), is part of a larger movement in critical ecopedagogies that advocates for place-based learning (Steffensen, 2024) and enables criticality of education's settler colonial history (Calderon, 2014), working towards the aim of repairing the land-based relationships that imperialism harmed.

Overview of Chapter 2: Variation in the Imperial L2 classroom (Manuscript A)

Chapter Two addresses core concepts related to speech perception in first and L2 acquisition, focusing on the extralinguistic (e.g., unlearnable aspects of speech related to physiology) and paralinguistic (e.g., learnable aspects of speech, like pronunciation) social markers of speech in the audiovisual curriculum of an L2 imperial language. Taking place in Montréal, Québec, where French is the official language, I use a descriptive case study ("present[ing] a complete description of a phenomenon within its context"; Duff, 2008, p. 32) through teacher interviews, their curriculum, and their institutional context. This case study is also instrumental ("provid[ing] insight into an issue…and facilitates our understanding"; Duff, 2008, p. 49) as it addresses the gap regarding the use audiovisual material in FSL teaching and

learning (Duchemin & Reid, 2024), and serves an exploratory purpose ("questions and hypotheses [for] a subsequent study or [to] determine[e] the feasibility of [a] desired research procedure" (Duff, 2008, p. 32), helping to develop the pedagogical tool for Manuscript B. I focus on two French L2 (FSL) educational institutions: the well-studied university and the comparatively understudied provincially-funded *francisation* setting, and pose the following research questions (RQs):

RQ1: How do FSL instructors decide what kind of audiovisual materials to use for their classrooms? Specifically, what are FSL instructors' attitudes towards including diverse social speech markers related to: age, sex, race, regional dialect, and native speaker status?

RQ2: What is the duration of these five social speech markers in FSL instructors' audiovisual materials?

Data derived from RQ1 provides insights into how L2 instructors of an official language choose audiovisual content for their courses, and specifically tracks their attitudes towards including diverse social speech markers. Data derived from RQ2 identifies which social speech markers are heard most in the FSL classroom and which are absent. Together, the data analyzes whether instructors' stated teaching beliefs match their classroom practices (Farrell, 2015) and how inclusive their audiovisual curriculum is of diverse voices. I conclude this chapter with a discussion as to how FSL teachers' attitudes and pedagogical practices in Québec are either distinct from or the same as other L2 imperial teaching and learning contexts. Social speech markers identified to be absent from the audiovisual materials form the basis for chapter three, which describes the development of Parlure Games, an online mapping tool for critically teaching and learning the multiple varieties of an imperial language.

Overview of Chapter 3: Development of *Parlure Games* (Manuscript B)

To address the known monodialectal and monolingual orientations of imperial L2 teaching pedagogies, chapter three details the development of Parlure Games (PG), an online mapping tool that follows high variability phonetic training characteristics (HVPT; Logan et al., 1991) and ecological L2 learning principles for teaching variation inclusively. HVPT is a laboratory-based methodology that uses computers with automated feedback to train L2 learners on phones not found in their first language using multiple speakers; it is linked to robust L2 perceptual and production skills (Barriuso & Hayes-Harb, 2018). Ecological L2 classroom pedagogies specifically involve using multi-speaker and multicultural learning to sharpen language skills (van Lier, 2011), often mediated by technology (e.g., computers; Ramírez et al., 2021).

To assess the viability of HVPT methodologies in an ecological L2 classroom, in this chapter, I follow Cardoso's (2022) four-level chronological framework for developing CALL tools, and report on PG's development and design (Level One), its pedagogical affordances (Level Two), and assessment ratings by users for its suitability for in-classroom use (Level Three). Specifically, the goals of PG are three-fold:

(1) To expose learners to high-variability social speech markers using diverse audiovisual material (e.g., online videos) to promote robust L2 learning;

(2) To develop plurilingual competencies for processing multiple speakers to encourage plurilingual and pluricultural learning; and,

(3) To afford opportunities to discuss the reterritorializing sprawl of imperial languages by using land-sensitizing activities (e.g., mapping) to facilitate criticality.

To substantiate these three goals, the following research questions are posed:

RQ1: Using the Technology Acceptance Model 2 (TAM2), to what extent do perceived usefulness and perceived ease of use influence L2 imperial instructors' acceptance of Parlure Games as a pedagogical tool in their classrooms?

RQ2: What are L2 instructors' perceptions of Parlure Games for its three goals?

Data from RQ1 includes ratings from the TAM2, which predicts users' acceptance of a technology at pre- and post-implementation (Venkatesh & Davis, 2000). To qualify these ratings, data from RQ2 provides written feedback related to the tool's three goals and its overall design. I conclude this chapter with a discussion on improving PG before implementing Cardoso's (2022) fourth level, in-class implementation, and testing of the tool's pedagogical effectiveness.

As an HVPT tool, PG pluralizes the audiovisual curriculum, exposing listeners to diverse voices (i.e., social speech markers) of the imperial language within different ecosystems (e.g., city or country), providing attunement opportunities that sharpen their audiovisual skills and plurilingual competencies, which are linked to robust L2 learning. As an ecological CALL tool, PG uses a land-based medium (i.e., online map) to afford visualizing and critically discussing imperial sprawl across land, problematizing normalized assumptions about learning imperial languages. Therefore, this dissertation's socioecological tool pluralizes imperial L2 curriculum and advocates for learning that is inclusive, not assimilative, and promotes the development of robust language learning skills aimed at repairing imperialism's historically monolingual and environmentally harmful relationship to L2 teaching and learning (Pennycook, 2022).

Chapter 2

Attuned to the français d'icitte? Learning French in Tiohtiá:ke

We listen twice as much as we speak, three times more than we read, and five times more than we write (Weaver, 1972), making the act of listening the most frequently used skillset in oral communication. Differentiating between linguistic stimuli is a key component for language learning, and without it, all linguistic varieties would be indistinguishable (Larsen-Freeman, 2020). Research consistently shows that listening to the social speech markers (e.g., age, region) of diverse voices has cognitive advantages for perceiving and producing linguistic features in learners' second dialect (Clopper & Pisoni, 2004b) and second language (Barriuso & Hayes-Harb, 2018), promoting robust language learning. Calls to diversify the L2 curriculum have been made since the 1920s (Siegel, 1999), and current research shows how the inclusion of variation expands learners' sociocultural knowledge and validates their relationships to their other languages and cultures (Wei & García, 2022). Despite these known sociocognitive benefits, Canadian English and French L2 classrooms continue to promote monolingual (e.g., French-only) pedagogies because they are settler colonial languages (Lau, 2022), which are ideologically antithetical to promoting variation as it endangers the regime's linguistic dominance (Irvine & Gal, 2000; Oakes & Peled, 2018). The ongoing use of monolingual pedagogies, and its limits on interacting with diverse voices, raises questions about their social utility, particularly for learners living in the L2 environment, where navigating diverse talkers is required for social survival (Pennycook & Otsuji, 2019).

This paper focuses on the L2 learning of the imperial language of French in Québec, the only Canadian province where French is the sole official language. Using a descriptive, instrumental case study (Duff 2008), and following L2 teacher and curriculum reflection

protocols (Borg, 2018; Farrell, 2015), I conduct interviews with French L2 (FSL) instructors from two institutions: the well-studied university and the comparatively understudied government-sponsored *francisation* settings. I report on how and where FSL instructors gather their audiovisual materials, discuss their views on including diverse social speech markers (e.g., age, gender, race, region, native speaker status), and analyse their audiovisual materials for inclusion of these markers. To understand the implications of these results, I first review research regarding L2 perceptual attunement skill development for social speech markers, noting the role that high variation plays in robust L2 learning, and connect this to the FSL classroom context in the settler colonial location of Montréal, home to the most trilingual speakers in Canada (Statistics Canada, 2021), focusing the analysis on audiovisual materials.

Background

Attuning to "the chorus of voices": A Multi-Sensorial Experience

According to Kuhl (2000), the ability to differentiate between phonetic stimuli occurs because of the perceptual magnet effect, which "warps" our aural-neural network in response to linguistic stimuli (p.11850). This effect begins in utero with the prosodic patterns of the mother's speech warping her infant's auditory perception towards the first language (L1). By one year old, the network is sufficiently warped to reliably differentiate between phonemic contrasts in the L1, a process achieved by pruning back—not eliminating—other contrasts not found within the L1 (Werker, 1995). Auditory discrimination remains relatively intact throughout a learner's lifetime, meaning that the learning of an additional language involves re-attunement. During the initial stages of second language (L2) acquisition, this "attunement" involves direct perception of the constellation of phones that characterize the target language (Tyler, 2019, p. 612). After sufficient experience, intermediate-level skills emerge that are sensitive to frequencies in the

language, ultimately affecting production skills (Flege & Bohn, 2021). Common to both proficiency levels is the notion that linguistic experience influences L2 processing, with the language repertoire referred to as a "chorus of voices" (Tarone, 2007, p. 842).

A "voice" is an acoustic fingerprint, representing a talker's unique physiology and social experiences, relayed through their extralinguistic and paralinguistic social speech markers. Extralinguistic markers (e.g., vocal tract length, age, race) are uncontrollable by speakers, whereas paralinguistic markers are learnable, both involve the processing of visual (e.g., facial expressions, gestures), semiotic (e.g., signs, orthography), affective (e.g., tone of voice), and sociocultural (e.g., class, education) communicative cues (Laver & Trudgill, 1979). For example, social speech markers related to female-gendered speech can have visual cues (e.g., physicality; clothing) and are described as higher-pitched (extralinguistic) and containing more polite forms and tag questions (paralinguistic) than male-gendered speech (Pitts & Galois, 2019). These learnable features of gendered speech, as reported within Queer circles, can be manipulated to "genderfuck" or intentionally subvert binary fe/male views of language use (Knisely, 2020, p. 183). Aural and visual perception, therefore, are linked modalities that affect L2 speech processing (Hardison & Pennington, 2021).

In fact, our understanding of aural perception is based on research in visual perception (van Lier, 2011). Listeners also have expectations related to particular markers, like race, defined as distinct from ethnicity and often involving perceptible physical differences related to skin colour and facial features that are socially, not biologically, constructed (Kubota, 2021). For example, English voiced by Asian-faced native speakers has been rated as less comprehensible than when voiced by white-faced native speakers (Kang & Rubin, 2009; Kutlu, 2023), suggesting an "accent hallucination" for non-white English speakers (Lippi-Green, 2012, p. 382).

Such race-based effects of the linguistic repertoire underscore its multisensorial nature (Oostendorp, 2022), resulting in researchers reinterpreting it as a communicative repertoire that is also sensitive to other audio, visual, and semiotic information (Wei & García, 2022). Successful speech perception is characterized by accurately processing the diversity of extralinguistic and paralinguistic social speech markers and the linguistic contents of the speech signal (Pisoni, 1997), with research showing that multimodal (e.g., audiovisual) learning enhances comprehension, speech decoding, and lexical and grammatical learning (Hardison & Pennington, 2021), building linguistic competence. Attuning to a voice, therefore, is a multi-sensorial experience, and exposure to a high variety of voices, as we explore next, assists in its development.

Perception of and Training for Additional Dialects and Languages

Variation is the learning norm, with differences found between individual speech sounds (e.g., phones) and among talkers; in fact, even a single speaker cannot faithfully reproduce the same acoustic shape of their utterance twice (Shankweiler et al., 1977). Although initially challenging, high variability training leads to long-term robust learning and performance across diverse modalities (e.g., visual, motor) over low variability training (Raviv et al., 2022). For listening and speaking, high variability phonetic training (HVPT) uses computer-based training for learning multiple voices and building robust perception and production of social speech marker skills (Barriuso & Hayes-Harb, 2018). Since the 1990s, this training methodology has consistently shown high rates of sharpening learners' perception, identification, and production of segmental and suprasegmental features not found in learners' first language (e.g., /r/-/l/ in English for rock-lock; Bradlow, et al., 1999) or first dialect (Clopper & Pisoni, 2004) with linguistic learning generalizing to novel linguistic features and new voices. The success of HVPT

methodologies is attributed to the fact that it affords attunement experiences to multiple voices, enabling listeners to habituate to the fluctuating extralinguistic and paralinguistic markers of individual voices, thereby freeing attentional resources to focus on understanding the linguistic content of speech (Barriuso & Hayes-Harb, 2018). It also underlines that the sociophonetic mechanisms engaged during multi-dialectal learning within a language are the same ones engaged during plurilingual learning across languages (Alghabban et al., 2024; Major, 2001).

In terms of learning another linguistic variety, differentiation skills for L2 perception and production are dialect—not language—specific (Escudero & Boersma, 2004; O'Brien & Smith, 2010). Learners may share a common L1, but they may have different regional varieties. For example, L1 French speakers from Québec were more likely to pronounce the English consonant [θ], a phone that does not exist in French, as [t], compared to their Parisian counterparts who pronounced it as [s]; production differences linked to their unique L1 phonologies (Teasdale, 1997). In fact, regional differences in the target language can be used to sharpen L2 differentiation skills. For example, anglophone FSL learners who were trained on three sets of novel French vowels (i.e., /i/, /y/, /u/) by Québecois and Parisian speakers were more accurate in their discrimination (grouping like-sounding features), identification (classifying a feature), and production of these phones than anglophones trained on the European variety alone (Baker & Smith, 2010). Exposure to different varieties of a target language is considered a key factor in shaping L2 attunement skills (Schoonmaker-Gates, 2017) and can lead to learners being more accepting of different pronunciations (Schoonmaker-Gates, 2023), while providing them with the flexibility of altering their own pronunciation to suit their social needs (e.g., young adults' regional accent changing after attending universities in urban settings; Evans & Iverson, 2007). Despite the phonological and social advantages of variation for robust language learning, the

imperial language classroom represents a particular learning context that has been historically resistant to including social and regional variation in its curriculum.

Imperial Language Learning: Iconization, Standardization & L2 Education

Unlike tribal languages, imperial ones (e.g., English, French, Spanish) deterritorialize from their ancestral homelands, and reterritorialize onto foreign lands to expand their empire (Motha, 2014). This territorial annexation results in the creation of diverse colonies (e.g., resource extraction, plantation, settler; Veracini, 2022), each having its own distinct regional and social variety that has reached varying levels of stabilization and recognition, viewed as both detrimental and facilitatory towards global communication (Saraceni, 2010). Settler colonies, like those in Canada and the United States, operate on a tripartite system, which involves: first, an allochthonous (non-Indigenous) group (e.g., French) seizing foreign land and implanting intergenerational social structures (e.g., ideologies, policies, institutions) to assert its independence from the ancestral motherland (i.e., France); second, these structures are then used to eliminate (e.g., genocide), assimilate (e.g., Christianity, Residential schools), and ultimately replace those Indigenous to the territory; and third, colonial structures are maintained by regulating the entry of other allochthonous peoples (e.g., speakers of other imperial languages, immigrants), assimilating them into the colonizer's mores (Veracini, 2022).

Successfully reterritorializing an imperial language on foreign territory involves a three-pronged semiotic process of "iconization" (indexing behaviours, activities or features as inherent to a particular group, and then normalizing these features using public signage, linguistic policies, or the changing of a territory's name), which then spurs "fractal recursivity" (a "dichotomizing and partitioning" action that stigmatizes other groups), and ultimately aims at "erasing" any aspect "inconsistent with the ideological scheme" (Irvine & Gal, 2000, pp. 37-38).

For example, in Québec, Bill 101 (1977) signage laws restrict the visibility of languages other than French on public signage (e.g., dominant languages like English), iconizing it to the landscape. Moreover, the *Office québécois de la langue française* enforces these laws, subjecting businesses to fines for non-compliance. Such tight control over the Canadian linguistic landscape stigmatizes featuring other allochthonous languages in the territory, and directly contributes to erasing Indigenous ones (Sterzuk, 2020). When applied intergenerationally, this three-pronged process helps to ensure the colony's successful implantation on unceded territory.

The monolingual orientations of linguistic imperialism in policies of the macrosystem (e.g., ministries of education, media) fund and influence the iconization of microsystems, like the L2 classroom, resulting in a curriculum focused on learning standardized dialects (Curzan et al., 2023). Standardization edges out other empires from a delimited territory, using codification (e.g., academies, dictionaries) and diffusion (e.g., mass media, textbooks) methodologies, and reflects a middle-class dialect iconized to the nation's capitalist ventures, and learners are often tested on this dialect (e.g., TESOL exams; Fairclough, 2015). The standard, Ender (2022) explains, does not account for usage in various social and regional microsystems and has been considered a "supra-regional" norm tacitly accepted as the pedagogical norm within a given region or social space (p. 63). This pedagogical norm is defined as "commonly shared and diffused expectations or criteria for [guiding learners'] behavior…acts and forbearances" (Ender, 2022, p. 59). In FSL research, Valdman (2003) explains that the pedagogical norm involves teaching linguistic features according to three considerations: a focus on native speaker (NS) pronunciations; whether the linguistic feature conforms with NS expectations of how non-NSs should use it (i.e., the feature should not be negatively valued by NSs); and, the ease of learning the feature due to acquisition factors. Iconizing NS-speech, Valdman (2003) argues, enables

learners to reclaim the social capital they are often denied as non-native speakers and acts as a bridge for learning other varieties.

Within imperial language education in North America, standards are often iconized to white native speakers, like English in the United States (Flores & Rosa, 2023) and Canada (Lau, 2022; Sterzuk, 2015), and with preferences for Eurocentric varieties of Spanish (Curzan et al., 2023) and French (Kunnas, 2023) in the L2 classrooms. This engenders a white, Eurocentric, learning norm for these settler colonial languages, a raciolinguistic preference that triggers fractal recursivity, stigmatizing varieties from non-white backgrounds or non-Eurocentric origins, contributing to their erasure in the curriculum, and ultimately leading to the notion that non-native and/or non-white racialized interlocutors are deficient speakers of the imperial language (Rosa & Flores, 2015; Sterzuk, 2015). Although fluency in the standard affords certain social privileges (Valdman, 2003), monolingual pedagogies reduce opportunities for learners to attune to diverse social speech markers, an important skillset required for robust learning (Barriuso & Hayes-Harb, 2018), and that is linked to successful social navigation in the multilingual urban environment (Pennycook & Otsuji, 2019).

Language Variation and the FSL Curriculum

Introducing variation into the L2 curriculum is surrounded by questions regarding when and how much learners should be exposed to. For example, many teachers believe that regional variation should be introduced in a gradual manner and at the intermediate level (Ender, 2022). At this level, learners are theorized to already be experienced with the L2 (Flege & Bohn, 2021; Tyler, 2019), and have cultivated perceptive tolerance, "the ability to cope with different kinds of sociolinguistic variation without irritation and difficulties" (Ender, 2022, p. 65). In FSL classrooms, however, that perceptive tolerance has historically been built by "international" or

European (e.g., Parisian) dialects in Canada (Kunnas, 2023; Wernicke, 2017) and the United States (Walz, 1980; Chapelle, 2014), despite the existence of multiple Francophone communities across the Americas (e.g., Québec, L'Acadie, Haïti, La Guyane). This iconizes FSL pedagogical norms towards a Eurocentric variety, stigmatizing and erasing other regional varieties—a predictable outcome of an imperial language. Interestingly, research shows that when L2 learners are trained on a full-set of phones that do not exist in their L1, the perceptual learning is more accurate that when training is introduced in sub-sets (Nishi & Kewley-Port, 2007a), staggered over different periods (Nishi & Kewley-Port, 2008), or reserved for "difficult" phones only (Nishi & Kewley-Port, 2007b). This suggests that exposing learners to a wider variety of phonetic differences from the get-go benefits phonological learning, and that waiting to introduce sociophonetic variation until intermediate levels may delay the development of attunement processes for extralinguistic and paralinguistic markers, ultimately affecting L2 learners' intelligibility. Current pedagogical norms include building "perceptual tolerance" and a positive stance towards linguistic diversity (Ender, 2022), with variation seen as facilitating learners' ability to express their identities and form associations with speakers with whom they share common sociocultural backgrounds and interests (Perez, 2022). Such individualized expressions, or learner agency, stretches from refraining from use the linguistic feature, using it for particular occasions, or having it fully replace a previously acquired feature (Siegel, 1999).

Curricular research forms the "central structure in the ecology" of a classroom (Guerrettaz & Johnston, 2013, p. 784), providing concrete evidence of how linguistic and cultural variation is incorporated in a pedagogy. For example, FSL textbooks are a well-researched curricular tool and powerful vehicle for transmitting sociopolitical norms related to "class, ethnicity, race, gender, sexual orientation, and language ownership" (Uzum et al., 2021,

p. 2). Walz's (1980) review of 100 FSL textbooks from university and high school found that they disseminated misinformation (inaccurate information about colonial histories and contemporary language use), perpetuated stereotypes (portrayals that inaccurately reflect current realities), and promoted notions of cultural inferiority (describing cultures that do not originate in France as underdeveloped or having accents that were "difficult to understand"; p. 95). Over time, textbooks printed in France (the motherland) began featuring international varieties, and those printed in Québec (a settler colony) tended to focus on local stylistic variation (Duchemin, 2017). In fact, Québec French's profile (a variety from France implanted in the 17th century, now spoken in eastern North America; i.e., Laurentian French), which has been stigmatized (Salien, 1998), has been increasingly featured FSL pedagogical circles (Chapelle, 2014).

In a review of 65 FSL textbooks (from the 1960s to 2010s), Chapelle (2014) traced mention of Québec history, cultural identity, and *québécismes* (particularities of the regional variety, like *atoca, maringouin, cabane à sucre, épluchette*; Turcotte, 2014) with the sharpest uptick noted in the 2000s, corresponding with the province's economic progress and increasingly stringent language laws. Despite this growing popularity, some FSL teachers in Québec still report a preference for "international" French and hesitate to include materials that highlight *québécismes*, deeming them too folkloric or even "illegitimate" (Remysen, 2018). Textbooks, however, cannot tell us what is heard in FSL classrooms; in fact, when they do provide phonic (orthography-guided pronunciation) or phonetic (consonantal or vocalic distribution rules) explanations, they are often too theoretical for most FSL learners to understand or apply (Walz, 1986).

Audiovisual Learning

FSL researchers advocate for using audiovisual resources as a means of adding "authenticity" to a largely standardized curriculum (Seeger, 2019), like films, to enrich learners' multicultural competency (Zéphir, 1999). Audiovisual materials are defined as "a type of multimodal input" characterised by the "simultaneous presentation of two or more channels" (e.g., sound, images, and subtitles), creating form-meaning links in the lexicon because their input redundancies complement and reinforce one another, clarifying meaning, and alleviating attentional resources (Muñoz, 2022, p. 126). Emerging in the 1980s, desktop computers enabled L2 teachers to exercise more control over the audiovisual content featured in their classrooms, and the arrival of video recordings in the 1980s, DVDs in the1990s, and now online materials (late 1990s/early 2000s), like videos, offer an even wider variety of genres and functionalities (pausing, playback, captioning) that can be downloaded and accessed outside the classroom (Hubbard, 2017). For example, Web 1.0 tools (e.g., static websites; streamed news; CD-ROMs) and Web 2.0 tools (e.g., YouTube, social media; Dominic et al., 2014) are regularly featured in classrooms and can also be accessed outside of class (Hubbard, 2024a). Research consistently shows how audiovisuals enhance comprehension, speech decoding, and lexical and grammatical skills, and are specifically endorsed for L2 training (Hardison & Pennington, 2021). Online media, sometimes referred to as multimedia because it engages multiple modalities, fosters a dynamic learning environment that can enhance vocabulary acquisition and encourage outside-of-classroom learning (Muñoz & Miralpeix, 2024).

The majority of audiovisual studies focus on the use of subtitles (translation of the L2 audio track into the first language) over captions (text representation of the L2 audio track). For example, Mariotti's (2014) survey of 45 L2 teachers in Europe found that subtitles were better-

suited for beginners, whereas captions were better-suited for more advanced learners. Captioning functionalities enhance comprehension (Muñoz & Miralpeix, 2024), support phonological attunement to phoneme-grapheme associations, and develop processing skills for naturalistic speech patterns, particularly for experienced learners (Tyler, 2019). A more recent survey of 194 L2 teachers, including French, also relegated subtitle use for lower proficiencies and found that instructors preferred to play videos without captions to challenge students' comprehension of the input and to simulate real-life situations (Sydorenko et al., 2024). These proficiency-based findings for audiovisual use were supported by L2 learners themselves, as both beginner and advanced learners did not consistently use subtitles or captions during independent use, with advanced learners, in particular, preferring no captions (Pattemore & Muñoz, 2024). To date, research on how to introduce variation in FSL audiovisual material remains understudied, particularly as it pertains to introducing the Québec variety of French over the European one (Duchemin & Reid, 2024).

This study focuses on how audiovisual materials are used to support learning social speech marker variation in FSL, narrowing the analysis on the intermediate-level, a proficiency level where learners have enough experience and "perceptual tolerance" for sociophonetic variation (Ender, 2022; Flege & Bohn, 2021). Additionally, FSL instructors are interviewed to better understand the reasoning behind their audiovisual material use. The following research questions were posed:

1. How do instructors decide what type of audiovisual material to use for their intermediate-level classrooms?
2. How much and what kinds of social speech markers (age, gender, race, native speaker status, region) comprise the audiovisual material of these settings?

Method

Study Context: The Ecology of *la Nouvelle France*

From a macroecosystem perspective, islands are accessible from multiple sea-faring vantage points. The island of Tiohtiá:ke, where this study takes place, has been a natural stopping point for travellers along the Kahrhionhwa'kó:wa (the largest waterway in the territory) because of the kahnawà:ke (rapids). In 1642, after nearly 100 years of survey and trade, France forcibly seized the island from the Kanien'kehá:ka First Nation (the easternmost member of the Rotinonhsión:ni Confederacy) to establish a religious colony, reterritorializing and urbanizing it as Montréal and the waterway as the *fleuve Saint-Laurent*. This acquisition expanded France's network of seaside trading posts and forts, assuring the colony's independence as *La Nouvelle France* (Nelson, 2016). However, it would until take the *Révolution tranquille* (1960s) to diminish the church's influence and the passing of Bill 22 (1974) to officialize French in Québec, the largest Canadian province, stretched over 11 Indigenous nations (Gouvernement du Québec, 2024).

Currently, Montréal is home to nearly a quarter of Québec's population and is Canada's most trilingual city, with 28% of residents speaking French, English, and another language (Statistics Canada, 2021). As stipulated by the Gagnon-Tremblay-McDougall Agreement (1991), Québec has complete control over its selection process of immigrants (e.g., *Certificat d'acceptation du Québec*), their integration, and *francisation* into Québec and francophone society. To protect the settlement against minoritization by the overwhelmingly anglophone continent and growing internal ethnocultural diversity, Québec employs an intercultural policy of social integration into the "founding [settler] culture" (Oakes & Peled, 2018, p. 82). Such policies require French-language competency for certification in professional orders (e.g., the

brevet d'enseignement requires primary and secondary ESL teachers to pass a French proficiency test; Riches & Parks, 2024), posting public signage where French is the dominant language (Bill 101), and establishing the *Office québécois de la langue française* for enforcing these laws. Access to French-learning programs, therefore, is crucial for newcomers to the island, but also perpetuates ongoing settler colonial nation-building on unceded Indigenous territory (Bazinet, 2023).

Analyses and Instruments

To explore the issue of audiovisual material use in intermediate-level adult FSL settings, this paper uses an exploratory case study framework, allowing us to "isolate variables and interactions […] for their possible influence on the behaviour under investigation […] and attempt to develop hypotheses, models, and ultimately theories based on the findings from the data." (Duff, 2008, p. 44). To facilitate emic and etic perspectives of each setting's bounded systems, data is triangulated from three points: teacher biodata (Appendix A) and interview questionnaires (Appendix B), the social speech markers found in audiovisual materials, and the history of the institution themselves (i.e., university setting and the government-sponsored *francisation* courses in Québec). Interviews used broad framing questions to elicit general information about audiovisual material use with more focused follow-up questions (Duff, 2008). Broad questions were drawn from Farrell's (2015) fourth level of teacher reflection, "practice", which involves L2 teachers' self-observation of their practices that are either "descriptive" of a teaching situation (e.g., *How do you decide what kind of audiovisual input is appropriate for your classroom?*) or "comparative" of a teaching event from different perspectives (e.g., *Do certain proficiency levels--beginner, intermediate, and advanced--require different types of audiovisual input? Please explain.*).

RQ1: Teacher Interviews

To answer the first research question regarding how FSL instructors decide what kind of audiovisual material to use for their intermediate-level classrooms, the biodata questionnaire (Appendix A) was distributed before the interviews to identify instructors' past travel and teaching experiences with other French dialects and languages, as such mobility generally contributes to a better understanding of diverse dialects (Clopper & Pisoni, 2004a). Based on their responses, I individualized the nineteen semi-structured broad framing questions, which were developed to gauge their beliefs and decision-making processes about their audiovisual pedagogies and practises, in general (e.g., *Where do you typically find audiovisual input? How do you decide what kind of audiovisual input is appropriate for your classroom?*) and social speech markers, in particular (*e.g., When choosing spoken audiovisual material for your classroom, are there any voices you target or avoid? For example: age groups, fe/male speakers, races, regions, non/native speakers*; see Appendix B). Interviews were conducted remotely and video recorded using the online software Zoom. All qualitative data were transcribed and organized according to the pre-established themes of the questionnaire: the general parameters of audiovisual material use and social speech marker variation.

RQ2: Social Speech Markers in Audiovisual Materials

To answer the second research question regarding how much and what kinds of social speech markers (age, gender, race, native speaker status, and regional dialect) constitute the audiovisual material, instructors completed a log of their materials used throughout one intermediate-level course. Following the conventions of L2 speech perception studies (Derwing et al., 2004), talker input needed to constitute a minimum of 20 seconds of continuous speech to be included for analysis. For dialogues (where speech is non-continuous but thematically related)

total speaking time for each interlocutor needed to amount to 20 seconds for consideration. After each talker was identified, socio-demographic information related to their age, race, gender, regional variety, and native speaker status was confirmed via multiple websites (e.g., IMDB, LinkedIn), with native speaker referring to first language or advanced proficiency in French. Identifications for race followed the Statistics Canada (2023) census, including terms like, racialized (referring to "persons, other than Aboriginal people, who are […] non-white in colour").

Results

The participants in this study responded to social media postings in adult FSL teaching groups in Montreal. Both instructors taught in-person at provincially funded institutions: the well-studied university and the comparatively understudied government-sponsored *francisation* settings. Responses to the biodata questionnaire showed that participants were similar across several measures, both were white, females in their mid-30s who had obtained a graduate degree in L2 teaching and had over 10 years of FSL teaching experience. Both considered themselves native speakers of French with advanced skills in English and had intermediate or higher knowledge of a third imperial language, Brazilian Portuguese (university instructor) and Spanish (*francisation* instructor). Both participants had been exposed to multiple French varieties within different regions of Québec, across Canada (e.g., Ottawa, New Brunswick), and abroad (e.g., France, Switzerland) through travel and media, and can be considered plurilingual FSL teachers.

Institutional Setting

University

The FSL classroom situated in the university setting was established in Montreal in the early 1900s and modelled after France's *Grandes écoles*, an elite higher education system for

middle-class professionals with a stated mission to cultivate students' language skills for use in professional environments. As with all undergraduate French language courses in Québec, it is subject to a tuition exemption, keeping fees the lowest in Canada, and making it financially accessible to both domestic and international students—a unique feature given that the latter group are increasingly targeted by Western universities for revenue generation (Piller & Bodis, 2024). Classes occurred once a week and were three hours in duration over twelve weeks for a total of 36 hours of instruction.

Francisation

Francisation classes occurred twice a week and were two hours in duration over seven weeks for a total of 28 hours of instruction. They were developed in 1969 to integrate allophone learners (speakers of neither English nor French) into francophone Québec society and are currently run by the *Ministère de l'Immigration, de la Francisation et de l'Intégration* (MIFI, 2019). The program focuses on developing linguistic and intercultural competencies, particularly oral skills, with early stages focusing on "la distinction entre le code oral et le code écrit" [the distinction between the oral and written code] (MEES, 2015, p. 14). Classes are open to students over the age of 16 of all citizenship statuses (e.g., Anglophone Canadians, international students, visa workers) who pay nominal fees and can receive allowances for full-time registration (e.g., childcare benefits; Longpré, 2025), making them financially accessible. Both institutional settings, therefore, devised policies making access to FSL services affordable, aligning with the province's goal of protecting the intergenerational growth of French language and culture (Oakes & Peled, 2018).

RQ1: Instructor Feedback on Audiovisual Material

The first research question explored FSL instructors' decision-making processes for selecting audiovisual materials in their intermediate-level classrooms. Responses related to the parameters of audiovisual material use revolved around three main themes: physical parameters (i.e., length of recording, audio quality), relevance parameters (as it related to content and proficiency levels), and the social speech markers under investigation (see Table 1 for an overview).

For physical parameters, the university instructor preferred materials with shorter duration (i.e., not exceeding ten minutes) to allow for more classroom interaction and sourced from mass media outlets (e.g., news). The *francisation* instructor preferred materials of varying lengths from diverse media sources (e.g., arts, entertainment). In terms of audio quality, both instructors stated that the primary factor for excluding audiovisual materials was unclear speech or noisy backgrounds. For the university instructor, unclear speech involved any varieties from regions other than Québec or Canada because these varieties were most likely to be encountered. For the *francisation* instructor, unclear speech focused on the acoustic quality of recordings, and with more recent digitized inputs preferred over older, physical recordings (e.g., CDs or DVDs). Neither could describe materials they would limit, but the *francisation* instructor noted limiting exposure to coarse language (e.g., "raciste", "grossophobie" [fat-phobic]).

Turning to relevance parameters, both instructors described that audiovisual material should be used in every class and that content should be related to the lesson plan's theme or be socially relevant to learner interests or current events. In terms of proficiency levels, again, both instructors described that content for beginners should involve controlled and repeated inputs, so that learners could carefully view and review the language. The *francisation* instructor provided

the example of playing and pausing DVDs from textbooks with accompanying transcripts. Both agreed that intermediate and advanced learners should be exposed to natural speech from authentic sources, like mass media, without such pauses or textual support. The university instructor specifically described limiting caption use because learners at these levels should be pushed to habituate to diverse speakers.

Finally, regarding the five social speech markers for selecting audiovisual materials, instructors reported the following. For age, only the university instructor reported preferences, stating that speech derived from children would likely be irrelevant for their teaching context, but that generational differences, like the rolling of /r/ by some older Québécois speakers, should be included in the input. Neither instructor reported preferences for markers related to race or gender; although, the university instructor stated that some of their learners claimed that male voices were more difficult to understand than female ones. With regards to region, both instructors reported positive feelings towards the inclusion of regional dialects; however, both underlined their preference for using the Québec variety as their main regional input. The *francisation* instructor specified that European varieties were avoided because they were less pertinent to language learning contexts in North America. The university instructor also avoided European varieties for similar reasons, adding that FSL students tended to have more experience with European varieties, so more attention needed to be drawn to the Québec variety, particularly the standardized versions found in news sources. Lastly, both instructors expressed preferences for speakers who were native or advanced-level French speakers. The latter group, the university instructor remarked, encourages FSL learners to notice that fluency is possible in the non-native language.

Table 1

Physical and Relevance Parameters for Audiovisual Material use from FSL Instructor Interviews

	Institutional Setting	
	University	*Francisation*
Physical parameters	• Under 10 minutes • Clear and audible speech (standard accent) with no background noise • News sources	• One minute to over an hour • Digital recordings over discs with clear acoustics (no static or background noise) • All media types; preference for arts and entertainment • No coarse language
Relevance parameters: (a) Content	• Be used in each class • Relate to lesson's theme • Evoke learner interest (socially relevant, current events) • Limited caption or transcript use	
(b) Proficiency level	• Beginners should be exposed to controlled input for ease of processing (e.g., DVDs with controlled dialogue) • Intermediate/advanced learners should be exposed to natural speech from authentic sources to practice acoustic habituation	
(c) Social speech markers: age, sex, race, native speaker status, region	• No stated preferences for gender or race • Age: children's voices less relevant; older voices relevant • Preference for native, advanced non-native speakers • Exposure to other varieties important, but standardized Québec variety the priority	• No stated preferences for age, gender or race • Preference for native, advanced non-native speakers • Exposure to other varieties important, but Québec variety the priority

RQ2: Audiovisual Input

The second research question focused on the duration of audiovisual input used in the intermediate-level classroom, focusing on the type of social speech markers featured by each unique talker, in terms of age, gender, race, native speaker status, and regional dialect (see Figure 1). During the categorization process, a variable of "middle-aged" emerged, denoting any talker ranging from 20 to 49 years old, thus excluding child, adolescent, and elderly talkers. Both instructors stated that their institutions provided a bank of audiovisual materials (e.g., a Dropbox for the university and an iTunes account for *francisation*) for common, but not obligatory, use; however, neither used them for the current courses under study. Their resources were pulled from mostly online sources, except for the *francisation* teacher who played DVDs of a film and episodes of television series. Neither instructor had invited speakers.

University

There were seven audiovisual inputs used, all drawn from online news sources: Télé-Québec, TV5, Génération INC, Les affaires, and two from Radio Canada. From this material, sixteen unique talkers were identified with a total speaking length of 46 minutes and 49 seconds, accounting for 2.17% of class time in the course's 36-hour length. The average talker spoke for a duration of 2 minutes and 56 seconds; the longest speech sample was derived from an interviewee (18 minutes). Focusing on the five social speech markers, all sixteen talkers were middle-aged, meaning there were no instances of speech from child, adolescent, or elderly talkers. In terms of gender, nine male talkers comprised 78.14% (36 minutes, 35 seconds) of the input with seven female talkers (21.86% or 10 minutes, 14 seconds). For race, 14 talkers presented as white, accounting for 94.62% (44 minutes, 18 seconds) of the input and the remaining two were racialized talkers (5.38% or 2 minutes, 31 seconds), one Black and one

Arabic. Fifteen native French speakers accounted for 98.04% (45 minutes, 54 seconds) of the input and included one non-native or advanced speaker (1.96% or 55 seconds). Lastly, for region, 11 talkers were born in Québec accounting for 92.20% (43 minutes, 5 seconds) of the input, and other talkers originated from France (n=3; 4.95% or 2 minutes, 19 seconds), Haiti (n=1; 1.08% or 30 seconds), and Morocco (n=1; 1.96% or 55 seconds), for a total of 7.98% or 3 minutes, 44 seconds.

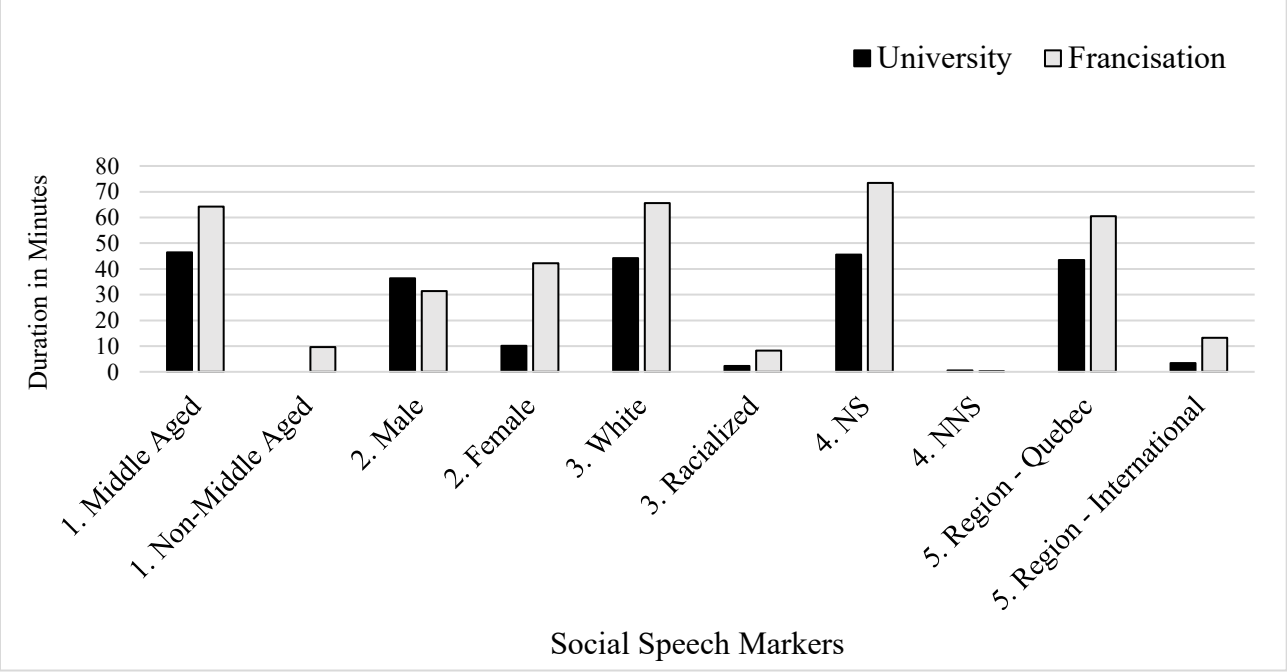
Francisation

There were 25 audiovisual inputs used: one movie (*Truffe*); two television episodes (Sophie Pacquet; *Les Rescapés*); five online sketch comedies (*Like Moi*; *Les têtes à claques*); five music videos hosted on YouTube (*Garoche ta sacoche*; *les Sœurs Boulay*; *Robert Charlebois*; *Vincent Vallière*; *Steve Faulkner*), and; 13 shorts hosted on l'Office national du film du Canada (*Échos - La francophonie dans tous ses états*). Sixty-six unique talkers were identified with a total speaking length of 74 minutes, accounting for 4.40% of total class time in the course's 28-hour duration. The average talker spoke for a duration of one minute and seven seconds; shorter stretches of speech were noted from dialogic exchanges in sketch comedies and television episodes. Focusing on the five markers, 53 talkers were middle-aged and accounted for 86.98% (64 minutes, 22 seconds) of the input, with elderly (n=10; 9.29% or 8 minutes, 42 seconds) and adolescent (n=3; 3.73% or 2 minutes, 46 seconds) talkers constituting the remaining input. Although the 35 male talkers (42.68%; 31 minutes, 35 seconds) outnumbered the 31 female talkers, females spoke for longer (57.32%; 42 minutes, 25 seconds). Fifty-one talkers (89.12%; 65 minutes, 57 seconds) presented as white, and the remaining 15 talkers (10.88%; 8 minutes, 3 seconds) presented as racialized: Black (n=7); Arabic (n=6); Asian (n=1); and Tahitian (n=1). Sixty-five talkers (99.55%; 73 minutes, 40 seconds) were native French

speakers with one non-native talker (0.45% or 20 seconds). Forty-four talkers came from the region of Québec (82.13%; 60 minutes, 47 seconds). The remaining 22 talkers were all featured from *Échos - La francophonie dans tous ses états* featuring talkers from regions in: Canada - Martimes (n=4; 1.46% or 2 minutes 5 seconds); the United States - Louisiana (n=2; 1.40%; 1 minute, 2 seconds) and Maine (n=2; 1.28%; 57 seconds); Africa - Senegal (n=3; 1.48%; 1 minute, 6 seconds), Morocco (n=1; 0.01%; 31 seconds), Burkina Faso (n=2; 1.58%; 1 minute, 10 seconds); Europe - Belgium (n=2; 2.83% ; 2 minutes, 6 seconds) and Switzerland (n=1; 0.01% or 44 seconds); the Middle East - Lebanon (n=3; 2.14%; 1 minute, 35 seconds); the Caribbean - Haiti (n=1; 0.01% or 44 seconds), and; Tahiti (n=1; 1.64% 1 minute, 13 seconds).

Figure 1

Social Speech Markers in Audiovisual Input of the University and Francisation Settings



In sum, the audiovisual materials in both intermediate-level settings were mostly drawn from online mass media sources (e.g., newscasts, TV episodes, film) with few instances of independent media (film board, social media). The longest stretches of speech were found in

interviews. For example, in the university class, the Radio-Canada interview with Guy Laliberté involved long stretches of dialogue, some exceeding one minute. In comparison, the *francisation* television episodes of Sophie Paquin consisted of several short vignettes, offering a wider diversity of talkers. The shortest stretches of speech were rapid dialogic exchanges in minute-long sketch comedies. Based on this input, except for gender, all other social speech markers were invariable according to age (mostly "middle-aged"), race (mostly white), native speaker (mostly native speaker), and region (mostly Québec). In both the university and *francisation* courses, there were instances of racial (e.g., Haitian-born newscaster Michaëlle Jean; Chinese-born teen actress Rosalee Jacques) and regional variation (e.g., French from France, Morocco), but even that input remained largely "middle-aged" and native speaker-oriented. The *francisation* setting had more instances of racial and regional diversity, which came primarily from *La francophonie dans tous ses états* hosted on the National Film Board of Canada's website.

Discussion

This exploratory comparative case study investigated FSL teachers' beliefs and practices regarding the use of audiovisual materials in adult intermediate-level L2 classrooms in Montreal, focusing on the duration and sociophonetic variation of each talker's social speech markers, as it relates to age, gender, race, native speaker status, and region.

RQ1: Instructor Feedback on Audiovisual Material

Instructors' use of audiovisual materials as it relates to physical and relevance (content and proficiency levels) parameters and social speech markers had several overlaps and some incongruences. For physical parameters, the university instructor's preference for materials with shorter duration and the *francisation* instructor's preference for varying lengths could be

attributed to their respective course layouts. Although the university class was longer (three hours over 12 weeks), classes were only held once a week, meaning that students had fewer interactions compared to the *francisation* course's bi-weekly classes. The university instructor's preference for materials sourced from mass media and the *francisation* instructor's preference for diverse materials can again be attributed to their settings. The former focused on using French in professional settings, requiring a narrower register, while the latter focused on French for social integration, requiring a wider register.

For relevance parameters in audiovisual material content as it relates to learners' proficiency level, both instructors had very similar feedback. In terms of content, materials were selected to appeal to learner interests, current events, or the lesson plan's theme, all consistent with the communicative orientation of the current L2 curriculum (Qasserras, 2023). As for proficiency, both instructors stated that controlled audiovisual materials (e.g., DVDs with transcripts) were more appropriate for beginner learners, allowing for ease of processing, and that intermediate and advanced learners should listen exclusively to authentic materials with limited controls (e.g., use of captions). The university instructor's preference for limiting caption use for intermediate learners to challenge their listening skills echoes previous findings among L2 teachers who also reported limiting this channel of information to challenge learners (Mariotti, 2014; Sydorenko et al., 2024). In fact, experienced L2 learners reported that captions were often distracting once they were attuned to speakers (Pattemore & Muñoz, 2024).

Finally, for the five social speech markers, only the university instructor stated that talkers who were children would be omitted from the curriculum, and this was reflected in their materials, which was voiced by "middle-aged" speakers only. The *francisation* instructor reported being open to all age groups, and their materials featured elderly and teen speakers, but

they only comprised 13% of the total input. Both instructors reported no preferences for markers related to the gender or race of the talker. Compared to other markers, gender was the only one that was equally spread. Gender-based research has rated female talkers as easier to understand with clearer enunciation (Major, 2001) and higher aesthetic quality than their male counterparts (Pitts & Galois, 2019). This may explain the university instructor's remark related to past students finding female voices easier to understand, but it does not explain why there were fewer female voices in her curriculum. As for race, both instructors reported favorable views towards including racialized speakers; however, their materials were oriented towards white speakers, a finding common to imperial L2 curricula (Curzan et al., 2023; Rosa & Flores, 2015; Macedo, 2019). Instructors' preference for native speakers was expected, as these voices have long been viewed and recommended as a pedagogical norm in SLA (Ender, 2022). Their positive responses toward including non-native speakers in the curriculum were unexpected and can be understood as a consequence of either their own plurilingual identities or the multilingual turn in L2 research, which acknowledges the value of multilingual speakers (Kubota, 2016); however, few non-native speakers were found in their materials. Overall, this recurring discrepancy between teachers' stated beliefs and their actual practices is attested in L2 teacher reflection research (Farrell, 2015), an issue we discuss further in RQ2.

Lastly, instructors' preference for materials featuring Québec French runs contrary to multiple claims that European French is the preferred FSL classroom variety (Baker & Smith, 2010; Bouchard, 2023) and confirms observations that Québec French has slowly been on the rise in FSL curriculum (Chapelle, 2014), and gaining prestige (Kircher, 2014). Focus on the regional variety was reportedly done to support learners in acoustically acclimating to the local variety, which was relevant to their living experiences, and to mitigate their overexposure to

varieties from France. However, focusing on the Québec variety alone still perpetuates monolingualism, which is not linked to developing robust L2 perception and production skills. More importantly, focusing only on Québec French ignores other well-established and populous francophone communities also found in Montréal (e.g., Haitian, Maghrebi).

RQ2: Audiovisual Input

Despite both instructors being plurilingual, having familiarity with different French varieties through travel (factors associated with greater comprehension of and positive attitudes towards variation; Clopper & Pisoni, 2004), and reporting positive feelings towards including diverse social speech variation in their curriculum, their materials were invariable across four social speech markers: age, race, native speaker input, and regional dialect. Drawn mostly from mass media sources, the social speech markers were overwhelmingly produced by "middle-aged", white, native speakers from the region of Québec.

In terms of age, voices from the elderly, adolescents, and teens were largely absent. This invariability was a stated preference of the university instructor, but not of the *francisation* instructor. This overrepresentation of adult voices can be attributed to the adult-level population of both settings. The invariability found in race and native speaker status does not conform to the stated preferences of the two teachers, who reported being open to including racially diverse and non-native speakers. This discrepancy between stated beliefs and practices is a well-known phenomenon in L2 teaching, and Farrell (2015) recommends instructors partake in "beyond practice" activities that involve: critical reflection on beliefs and practices, curiosity about other methods with colleagues to clarify their teaching positionality and promote their professional development. For example, Mahtani (2009) provides critical reflection questions, like: "Do I tend to shelve or 'make time later' for minority points of view? Do I include readings in my

syllabus […] by marginalized groups?" (p. 125). Given that the visual markers of race have been known to mischaracterize racialized speakers as non-native speakers with listeners stating they heard accented speech and consequently reporting having problems with comprehension (Kang & Rubin, 2009; Kutlu, 2023; Lippi-Green, 2012), ensuring a diversity of French speakers may help quell this linguistic stereotyping.

The invariability in regional variation, with focus primarily on the Québec region, marks an important turn in legitimizing Québec's representation in FSL curriculum, not in comparison to the Parisian dialect, but as the main object of classroom study. However, its lack of variation in age, race, and native speaker status does not characterize Québec French as distinct from the rest of Canada; rather, it reflects run-of-the-mill "homogeneity" characteristic of imperial languages (Veracini, 2022), particularly in media (Fleras, 2011). For example, the marginalization of racialized people from anglophone Canadian media is connected to race-based exclusion policies that occurred during the construction of the colony (Mahtani, 2009). In Québec, questions about inclusion for other cultures and religions arise as *accommodement raisonnable* [reasonable accommodations] debates where immigrants are "eternally identified as strangers" (Wong, 2011, p. 155), and extend to other Québec-based media, like print media, also known to lack racial and queer diversity (Roy, 2012). Therefore, it is less likely that social speech marker invariability in teachers' materials are about them per se, rather it is more likely where their materials were sourced that is the issue.

Mass media is a multi-billion-dollar industry intended to "amuse, entertain, and inform" consumers, and where content is created to "inculcate individuals…into the institutional structures of the larger society" (Herman & Chomsky, 2002, p. 1). Mass media is relatively easy to access (television, online), but diffuses mostly standardized varieties (Fairclough, 2015),

featuring low social speech marker variation (Curzan et al., 2023), invisibilizing non-standard and foreign-accented speakers or portraying them unfavourably (Dragojevic et al., 2016; Lippi-Green, 2012). In fact, the *francisation* class's inclusion of a series of short films from non-mass media underscores this point, as it contributed most to providing variation for markers related to race and region. Sourced from the National Film Board of Canada, audiovisual materials are funded not by advertisers, but by the Canadian Heritage Department, and transmit information not from businesses or governments, but from diverse artists across the country. Therefore, when instructors use mass media and standardized dialects by default in their classroom, they may inadvertently play a role in maintaining nationalist identities related to the language they are teaching. While classroom use of mass media has been linked to better listening comprehension (Baharani & Sim, 2011; Webb, 2014), not all genres are well-received by learners, with some preferring educational and news TV programs over drama and talk shows (Quijano, 2020). As noted in the materials of the two classrooms, however, educational and news shows have longer stretches of speech with fewer talkers, whereas dramatic shows often feature shorter stretches of speech with wider talker variety. To what extent these differences in duration and talker variation affect long-term speech processing is a question for future research.

Pedagogical Recommendations

In sum, neither FSL setting conformed to current pedagogical recommendations that social and regional variation be introduced at intermediate levels, when learners are theorized to be perceptually tolerant enough to handle the complexity of authentic input compared to lower levels (Ender, 2022). To present regional and social variation, Duchemin & Reid (2024) recommend materials that have socially-situated contexts with glosses that include the standard and several francophone nations, presenting variation on a continuum that shares traits with other

varieties, and avoiding binary relationships that cast the standard as legitimate and the Québec variety as an informal "joual". To support diffusing more social speech marker variation in audiovisual materials, we recommend sourcing from non-mass media sites, like national film boards or social media.

National film boards have long been recommended to increase not just the learning of linguistic variation but also to enhance cultural competence (Zéphir, 1999), and when authored by community members, avoid perpetuating stereotypes (Walz, 1980). Such activities could include listening to diverse social and regional varieties, with more advanced students picking out pronunciations or lexis that vary from varieties with which they have had more exposure. Mahtani (2009) notes, however, that even when materials are authored by a particular racial group (e.g., rap videos authored by Black artists), they may be accepted by one group (e.g., white) but criticized by those of the same group (e.g., Black). To avoid such discrepancies, Mahtani suggests surveying students about their interests and drawing materials based on their responses. Building on this notion, Guida (2022) suggests meaningful interactive activities that engage the "hidden cultural characteristics" (e.g., perceptions of beauty, handling of emotions, gender roles) unique to each francophone culture, supporting cultural appreciation over surface learning (p. 235). Lastly, Kingué (1994) recommends using maps to help learners identify regional characteristics of spoken French, which in Africa led to the "balkanisation" of Indigenous populations whose ancestral homelands were cut across to install colonial borders (p. 18). Canadian FSL students could equally be tasked with identifying regional characteristics of spoken French from some of the 11 Indigenous nations found within Québec or across borders in Canada and the United States (e.g., Métis in Manitoba and Montana). However, using maps as

pedagogy may require a socio-political background on imperialism (Bedecarré, 2022), which some FSL instructors may not necessarily have the experience to enact (see Manuscript B).

Social media is defined as "any application or technology through which users participate in, create, and share media resources and practices with other users by means of digital networking" (Reinhardt, 2019, p. 3). Online social networking platforms, like Facebook, X (formerly Twitter), Instagram, or TikTok, have increasingly become a pedagogical tool since the 2010s (Sun et al., 2021) and host audiovisual materials authored by millions of users who are typically not funded by advertisers nor transmit information from businesses or governments. As noted by Hubbard (2017), the current issue facing current L2 classrooms is no longer about finding authentic input, but more about the time-consuming endeavour of sorting through vast quantities of online content. Common to both film boards and social media is the ability to filter or search databases by theme (e.g., comedy), genre (e.g., documentary), input type (e.g., film or series) or date, allowing instructors the freedom to choose authentic materials based on themes relevant to course content, learner interests, and current events.

Finally, we are not suggesting that mass media be wholly avoided as a resource; rather, we recommend that it be used with greater attention to ensuring diversity in the social speech markers. For example, the 2006 Télé-Québec television series, *Pure Laine* (https://enclasse.telequebec.tv/emission/Pure-laine/3081), provides an example of a racially and culturally diverse family in Québec. The father is played by Haitian-born actor, Didier Lucien (who moved to Montreal as a child), the mother is played by Québec-born actor, Macha Limonchik (child of Jewish Ukrainian and Québécois parents), and their adopted Chinese daughter, played by pre-adolescent, Québec-born actor, Mélodie Lapierre. A more recent example is *Lakay Nou* (Our Home in Haitian Kreyòl), a series created in 2024 by Radio-Canada

(https://ici.tou.tv/lakay-nou), following three generations (grandparents, parents, teenagers) of a Haitian-Québécois family, featuring a majority Black cast. In both series, most characters are speakers of the Québec variety (satisfying teachers' preferences in this study), but each talker provides diversity in terms of race, gender, and age, while humorously discussing Québécois identity, culture, and society through each character's perspective. Such extensive listening focused on TV episodes, particularly outside of class (Webb, 2014), can support L2 learners in habituating to characters' speech patterns, eventually leading to a decrease in caption use to support their listening and autonomous learning (Pattemore & Muñoz, 2024).

Limitations

Many questions remain about audiovisual material use in the imperial L2 classroom. For example, how many times is one video replayed for learners? Are students encouraged to access materials on their own devices or at home? Moreover, since the FSL instructors in this study had similar demographic backgrounds, future research should be conducted with teachers from varying backgrounds to provide a more nuanced picture of how these different identities may influence audiovisual curriculum design. Additional research in audiovisual material use among beginner and advanced levels from varying age groups and institutional settings (e.g., primary and secondary schools) is also needed. However, Bakali's (2022) critique of the Québec Education Program characterizes it as falling short of being culturally and linguistically inclusive, describing it as historically operating on a white supremacist logic principled on a secular (e.g., Bill 21) and intercultural integration model (i.e., assimilationist), suggesting that social speech marker variation is unlikely to be part of primary and secondary FSL curricula.

Conclusion

Listening is a part of a holistic sensorial experience, transforming L2 listening into a multimodal event that develops learners' differentiation skills. Multimodal training, as HVPT methodology shows, is linked to developing more robust L2 perception and production and recommended for L2 training. In this study, we focused on how social speech markers (age, gender, race, native speaker status, and region) in the audiovisual materials of intermediate-level FSL classrooms can be utilized to build such multimodal skills. Based on teacher interviews from two adult institutional settings (university and *francisation*) and a review of their materials, we found that the duration and types of social speech markers were invariable across all markers, except gender, and sourced mostly from online mass media. FSL instructors should, therefore, privilege audiovisual material featuring social speech markers found to be under-represented, namely: the elderly, children, and adolescent speakers; racialized individuals; non-native speakers; and varieties from outside of Québec and may benefit from sourcing materials from non-mass media outlets.

These findings suggest that FSL intermediate-level learners are not afforded interaction with diverse enough materials to develop the kind of multimodal attunement skills that predict robust L2 learning. This lack of exposure to variability is increasingly positioned as socially burdensome for FSL learners, particularly those living in multilingual environments (Pennycook & Otsuji, 2019), because it fails to equip them with adaptability skills, including the possibility of producing these same variable forms for their social benefit (French & Beaulieu, 2020). In doing so, Paternostro (2017) explains that variation constitutes both an object of teaching that helps learners develop strategies to segment and analyze the multisensorial language signal and one of reflection to develop learner awareness of differences found in talker speech.

Chapter 3

Parlure Games: Leaping Outta the HVPT lab and into the Ecological Classroom

A language becomes imperial when it "deterritorializes" from its ancestral homeland, and "reterritorializes" onto foreign lands (Motha, 2014, p. 117, 41). Emerging from imperialism is settler colonialism, characterized by allochthonous (non-indigenous) peoples asserting ownership over unceded territory using monoculturally-oriented ecological structures (e.g., plantations or monolingual policies) to intergenerationally form their national identity; one that is ultimately premised on "eliminating" indigenous ecosystems (i.e., plants, animals, peoples), so as to replace them (Veracini, 2022). Languages, like English, French, and Spanish, all qualify as imperial languages when their pedagogical aim engages in these reterritorializing processes of Turtle Island (North America). Imperial second language (L2) curriculum continually privileges standardized varieties, which are socially invariable dialects representing the communicative patterns of "whiteness and higher socioeconomic class" using textbooks and multi-billion-dollar funded mass media, stigmatizing non-standard dialect use (Curzan et al., 2023, p.23), and resulting in low variable learning. The imperial English and French languages, and the L2 teaching programs in Canada that fund them, perpetuate reterritorializing settler policies when their pedagogies are monolingually-oriented (e.g., English-only), and actively discourage learners from exploring or mixing other languages (Wei & García, 2022).

To address the monolingual orientations of imperial teaching pedagogies in the settler colony called Canada, this paper tracks the development of *Parlure Games* (PG), a plurilingual teaching tool that supports imperial teachers in having critical conversations about imperialism. Using an interactive online map and following high-variability learning characteristics, online videos are posted either locally or globally, providing users opportunities to attune to the

multiple voices that constitute the imperial language and visualize its sprawl. Questions related to video content afford critical discussions related to reterritorialization processes of imperial learning. Criticality is defined as problematizing normalized assumptions about knowledge and social practices, questioning power and inequality, and focusing on broader issues that seek visions for change and inclusivity, using self-reflexivity in teaching practices (Lau, 2022). When applied to the Canadian L2 teacher education, this involves confronting its settler colonial history (Sterzuk, 2022).

The goals of PG are to:

a) expose learners to high-variable social speech markers using diverse audiovisual material (e.g., online videos sourced from non-mass media);
b) develop plurilingual competencies for processing multiple speakers; and,
c) afford opportunities to critically discuss the reterritorializing sprawl of imperial languages using land-sensitizing activities (e.g., mapping).

To substantiate these goals, we follow Cardoso's (2022) four-stage chronological framework for developing new or existing computer-based pedagogies that assist L2 learning, which involves an iterative approach of repeatedly developing, testing, and improving the software system over multiple cycles (Larman & Basili, 2003). Our exploratory study begins with Stage One, the theoretical development of *Parlure Games*, followed by Stage Two's review of its pedagogical affordances, and in Stage Three, we assess its suitability for in-classroom use, using feedback from English L2 teacher candidates in Québec via the Technology Acceptance Model (Venkatesh & Davis, 2000). We conclude with considerations for improving *Parlure Games* before Stage Four, involving in-class implementation to test its pedagogical effectiveness.

Stage 1: Development of *Parlure Games*

Stage One of Cardoso's (2022) chronological framework tracks the theoretical rationale behind *Parlure Games*, as it relates to the perception of social speech markers in human voices, the role of listening to multiple voices in L2 learning, and how these concepts connect to imperial language teaching.

Social Speech Marker Perception and Learning

The learning environment is not static; rather, it exists within complex and dynamic socioecosystems of nested micro-sized (e.g., home, classroom) to macro-sized (e.g., ministries of education, mass media) scales (van Lier, 2011), and differentiating between these systems is a core language skillset, and without it, all languages would sound the same (Larsen-Freeman, 2020). In L2 listening, this differentiation process is called "attunement", and involves direct perception of the constellation of sounds characterizing a language; and with sufficient attunement experience, intermediate-level listening skills emerge, which are sensitive to frequencies in the language, and affect L2 speaking (Flege & Bohn, 2021, p. 92). Speech perception, or attuning to "voices", means accurately processing both the linguistic content of speech and the extralinguistic and paralinguistic social speech markers of its speaker. Extralinguistic markers are uncontrollable by the speaker (e.g., vocal tract length, age, race); whereas, paralinguistic markers are learnable, and involves processing visual (e.g., facial expressions, gestures), semiotic (e.g., signs), affective (e.g., tone of voice), and sociocultural (e.g., class, education) information (Laver & Trudgill, 1979).

The role social speech markers play in first language acquisition was studied in three waves: the first analyzing sociophonetic variation as found in regional and social dialects; the second wave focused on the ethnographic embodiments of social speech makers for forming

speaker identity; and the current third wave investigates how learners use linguistic and semiotic variation to become stylistic agents and assemble sociocultural meaning, signalling their membership to a particular community (Hall-Lew et al., 2021). These three waves demonstrate how our understanding of social speech markers has developed from atomistic views into one where learners dynamically engage their multiple modalities to communicate the plurality of their evolving identities.

The theory of direct perception for listening is based on research in visual learning (van Lier, 2011), demonstrating how aural and visual perception have always been linked. Visual markers related to paralinguistic speech markers, like facial expressions and gestures, for example, facilitate language learning over listening alone, with audiovisuals recommended for L2 learning (Hardison & Pennington, 2021). Research in extralinguistic social speech markers demonstrates how aural and visual processes work together to affect speech processing. Extralinguistic markers related to older age involve processing physical (e.g., greying hair) markers that often co-occur with acoustic markers (e.g., vocal jitters, slower speech rate; Laver & Trudgill, 1979). The aural and visual extralinguistic markers related to race, defined as distinct from ethnicity, involve the perception of physical differences (e.g., skin colour, facial features; Kubota, 2021), and are known to affect listening comprehension—the effort required to understand speech. For example, English voiced by Asian-faced native speakers was rated as less comprehensible than English voiced by white-faced native speakers, denoting a phenomenon described as “accent hallucination” for non-white English speakers (Lippi-Green, 2012, p. 382). This audiovisual indexing of whiteness to English is typical of imperial languages and is a well-studied issue in raciolinguistic research (Rosa & Flores, 2023). Recommendations regularly call for exposing L2 learners to diverse voices so as to ameliorate “misinterpreted markers” by the

listener (Laver & Trudgill, 1979, p. 26) and to destigmatize exploration beyond standardized dialects, often heavily featured in mass media (Curzan et al., 2023). Such inclusive practices are linked with sociocognitive development, where learners value themselves not as deficient speakers of a language, but as plurilingual users of a multi-modal communicative repertoire in their own right (Wei & García, 2022). Despite calls to pluralize the imperial L2 classroom, monolingual orientations persist (Lau, 2022). High variability learning, as we discuss next, is a computer-based methodology that supports teachers in creating curriculum that amplifies multiple voices and fosters inclusive, long-term language learning.

L2 Listening and HVPT Learning

The effect of high variability learning is attested across multiple modalities (e.g., visual and motor learning; Brekelmans et al., 2022). Since the 1990s, high variability phonetic training (HVPT) supplies further empirical evidence that using multiple "voices" is linked to building more accurate and robust L2 skills (Barriuso & Hayes-Harb, 2018). This computer-mediated methodology involves training listeners to perceive and identify segmental (e.g., consonants, vowels) or suprasegmental (e.g., intonation, stress) features not found in learners' first language, or first dialect (Clopper & Pisoni, 2004b), and which affect differences in meaning (e.g., /r/-/l/ in rock-lock). HVPT training has five distinct characteristics (Lively et al., 1991):

1. Talker variability (voiced by at least five speakers);
2. Human (not computer-manipulated) speech;
3. Real words;
4. Multiple exposures to speakers using identification training tasks (classifying a feature) over discrimination tasks (grouping like-sounding features), as the former demands

categorical judgement linked to long-term learning. Immediate feedback is required on tasks.

5. Testing conditions must match training conditions.

Over the years, HVPT replications focused on: the learning order and set-size of segmental (e.g., consonantal /r-l/ contrasts and diphthong vowels by Japanese and Korean ESL learners) and suprasegmental features (e.g., lexical tones in Mandarin Chinese by English learners), and increasing/decreasing both talker variability and the duration of training periods with consistently high rates of phonetic learning that generalizes to novel L2 linguistic features and new voices (Brekelmans et al., 2022). The success of HVPT methodologies is attributed to three factors (Barriuso & Hayes-Harb, 2018): first, it affords L2 learners attunement experiences for multiple voices enables them to habituate to the fluctuating extralinguistic and paralinguistic markers of speech, freeing them to focus their attentional resources on comprehending the linguistic contents of speech; second, it underlines that the sociophonetic mechanisms engaged during multi-dialectal learning within a first language are the same ones engaged during plurilingual learning across languages; and finally, it demonstrates how computers can be effective means for training L2 listening and speaking skills. Note that replications involving computer-altered speech or non-real words are considered inappropriate for HVPT training, because that learning is not generalizable to actual voices or words found in the language, making it socially unusable for L2 learners (Lively et al., 1991).

Despite numerous studies over the decades reporting how HVPT sharpens L2 perception and speaking skills, low-variability standards continue to be used in L2 imperial classrooms (Curzan et al., 2023), which does not afford enough opportunities for extralinguistic and paralinguistic attunement, nor predict the kind of robust L2 learning attested in HVPT

methodologies, and affecting comprehension. Monolingual pedagogies are ethically questionable practices in multilingual environments (van Lier, 2011), and underscore the continued need for Canadian L2 teacher education to support emerging teachers in designing multilingual pedagogies that challenge its white supremacist history (Lau, 2022), a reterritorializing process that invisibilizes non-standard dialects, and non-imperial (e.g., Indigenous) and immigrant languages (Motha, 2014; Sterzuk, 2022). Although HVPT research remains tethered to the laboratory setting, more recent studies are trying to bridge this gap, extending HVPT to in-classroom use (Barriuso & Hayes-Harb, 2018).

***Parlure Games*: Motivation**

In response to the ongoing use of invariable social speech markers found within imperial L2 classrooms, we created *Parlure Games* (PG), a play on the English term parlour games (describing lively group activities played indoors) and *parlure* (a Québécois term denoting how an individual speaks, linking them to a particular community). This computer-based platform extends HVPT beyond the laboratory setting, providing learners opportunities to attune to the variation of imperial voices. Audiovisual materials, like online videos, offer a wide variety of functionalities (pausing, playback, captioning) and genres that can be indexed by theme, tagged by keywords, and archived by date, enabling offline accessibility through downloading (Hubbard, 2017). In the next section, we provide an overview of a PG expedition.

***Parlure Games:* Overview**

PG is an online plurilingual tool that uses existing media platforms to expose imperial L2 learners to diverse social speech markers via audiovisual materials, which are known to add "authenticity" to standardized curricula (Seeger, 2019). Our design is based on a previous case study (Chung & Cardoso, 2022), which identified that L2 imperial teachers' audiovisual material

selection is based on its duration, acoustic quality, and conformity with the lesson plan's theme. Although teachers held positive views towards variation, analysis of the duration and variability of five social speech markers (age, sex, race, region, and native speaker status) in their audiovisual materials, derived mostly from mass media, were invariable across most markers, resulting in speech featuring mostly middle-aged, white native speakers from the region.

In response, PG materials are sourced from non-mass media outlets (e.g., social media or independent film boards), featuring voices found missing from the imperial curriculum, specifically the elderly, adolescent, non-white, and non-native speakers. One travel point involves student groups watching a video and answering feedback questions related to its content and speech markers, facilitating group interaction. Following HVPT characteristics, videos must be derived from five speakers (each with distinct extralinguistic and paralinguistic markers) to complete a PG "expedition". Five-point expeditions can be a "road trip" within a region (e.g., city or country) or an international "voyage" (e.g., previous or current colonies); both expeditions involve tracking the imperial language across territory, sensitizing learners to land and language use.

Creating *Parlure Games*

All PG tasks are hosted on Google-based applications, which are accessible across most operating systems (e.g., Microsoft Windows, macOS, Android) and devices (e.g., smartphones, laptops, desktops), giving the tool a ubiquity that boosts chances of user familiarity and may facilitate smoother interactions. To create a PG unit requires a Google account, navigating to https://www.google.ca/maps/d/u/0/, and selecting "create a new map" (Figure 2). Users must first decide whether they are creating a local "road trip" or an international "voyage", and rename the "layer" accordingly (Figure 3). Once a theme has been chosen (e.g., discussing art),

corresponding audiovisual material (i.e., online video) is selected featuring a voice missing from the curriculum (e.g., Black and Asian speakers), which is then geo-located to its region, dropping a pin onto the map (Figure 4). This pin is embedded with the video's URL, along with a link to questions related to the video's content and speech markers (Figure 5), which is hosted on Google Forms (Figure 6). Student groups confer and reply to these questions, and automated feedback is provided, complying with HVPT criteria. Once five points have been traversed, a PG expedition is complete (Figure 7), allowing users to visualize the spread of the imperial language across a given territory, supporting critical discussions related to imperial sprawl. Privacy settings for Google-based maps and forms can be adjusted for in-classroom use or made public and accessible outside the classroom. For current L2 instructors, their existing thematically related audiovisual materials can be pinned to a Parlure Games map, enabling them to take note of which social speech markers are missing from their curriculum and make adjustments accordingly. This tool, therefore, can serve to archive and update existing materials, while building a catalogue of diverse voices for their classroom.

Figure 2

Creating a Parlure Games *map*

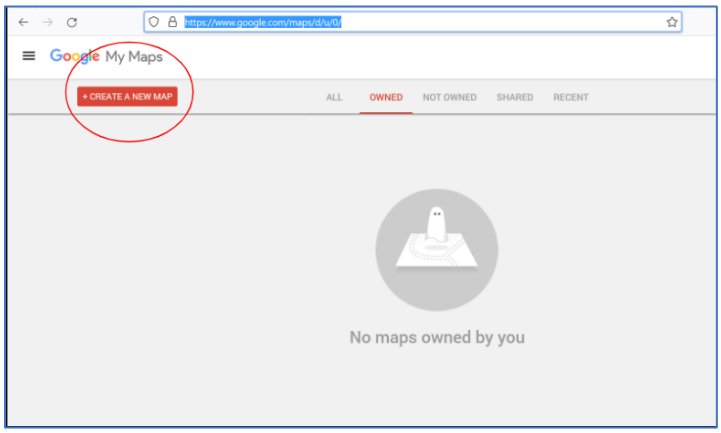


Figure 3

Re-naming the layer as a local "road trip" or "international voyage"

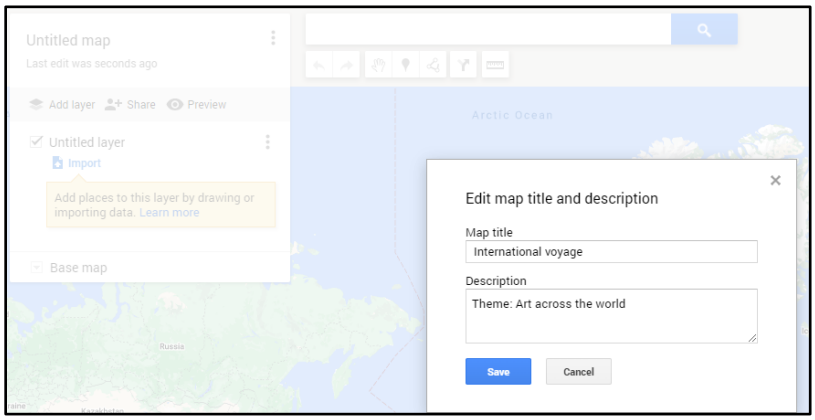


Figure 4

Adding a pin ("marker") to a Google map

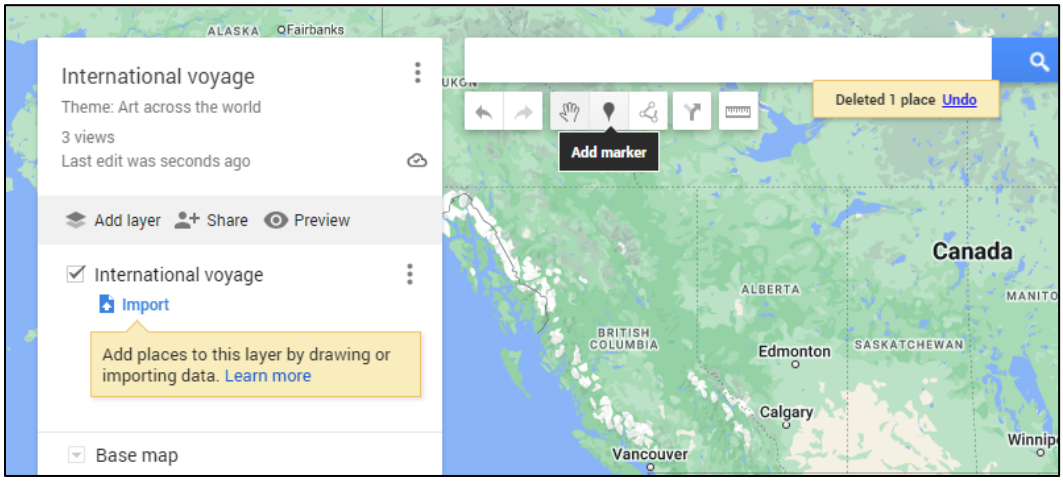


Figure 5

Completed pin, which includes links to video and group questions

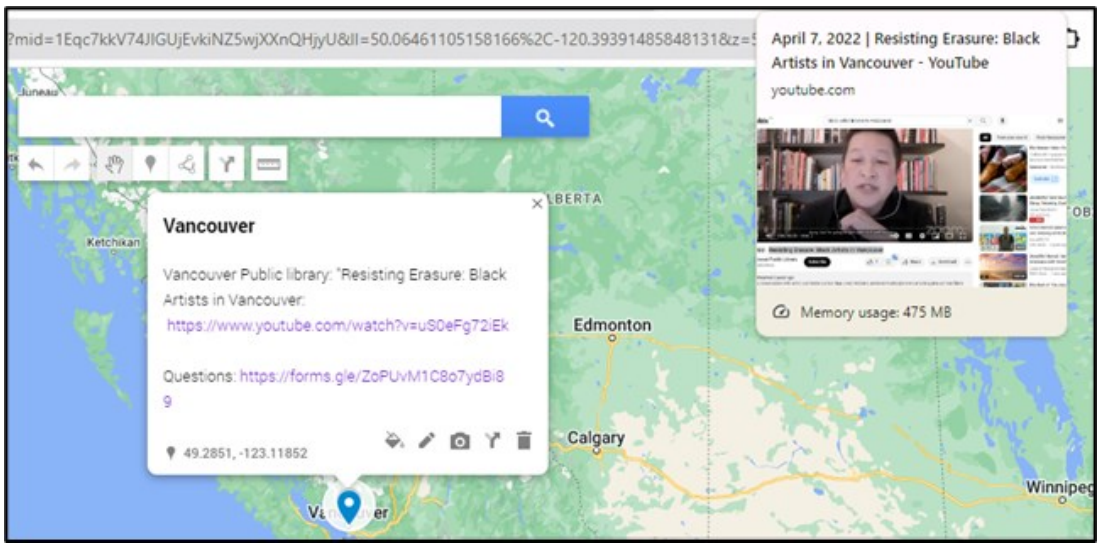


Figure 6

Example of comprehension task associated with audiovisual material, hosted on Google forms

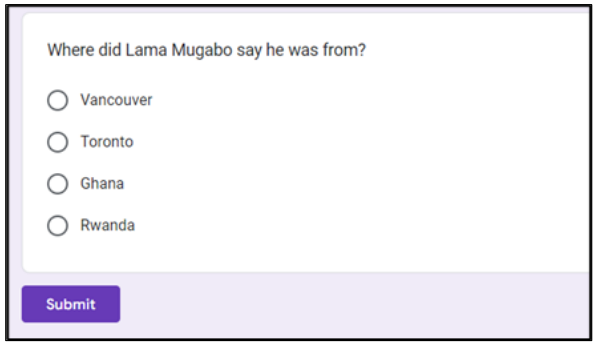
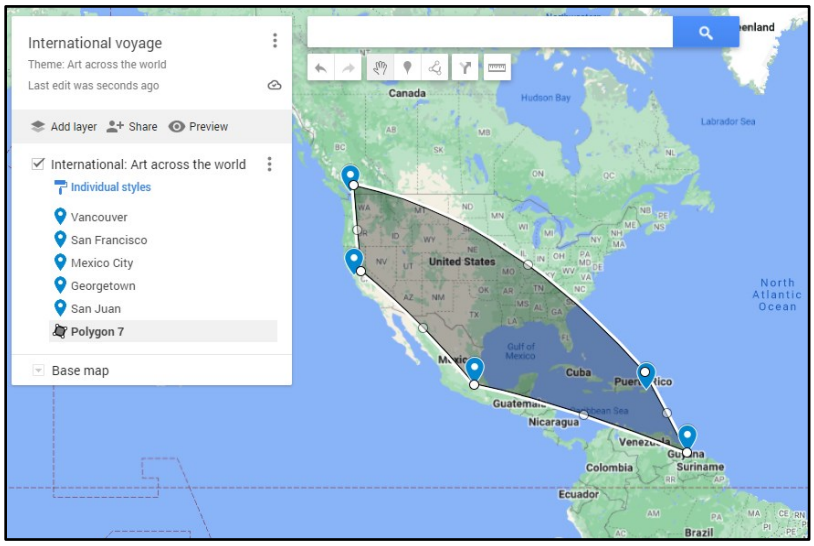


Figure 7

Completed expedition of a PG international "voyage" to: Canada, United States, Mexico, Guyana, and Puerto Rico



Upon completion of a PG expedition, users will have attuned to and discussed the meaning of five distinct variations, and the resulting map provides a visual to facilitate critical discussions about imperial sprawl, sensitizing users to land. *Parlure Games*, therefore, promotes high-variation audiovisual learning related to reterritorialization processes, addressing regional and other social speech marker variations found to be missing from the imperial L2 curriculum.

Stage 2: Exploring Pedagogical Affordances of *Parlure Games*

After theoretical development, Cardoso's (2022) second stage explores the tool's pedagogical affordances, following an iterative approach to software development highlighted earlier (Larman & Basili, 2003). To ensure that PG is L2 classroom compatible, we employ ecological language learning pedagogy, which involves activities that explore language use in micro (e.g., home or classroom) and macrosystems (e.g., national or mass media), and facilitation communication that is either dyadic (between two or more speakers) or triadic, where group exchanges depend upon interaction with non-human elements, like technology, signs or

land (van Lier, 2011). This action-oriented pedagogy advocates for critical plurilingual learning because it is sociocognitively advantageous for learners and ethically responsible for L2 teachers in multilingual environments. Table 2 outlines the ten principles of an ecological classroom and how PG addresses them in the corresponding column.

Table 2

Ten principles of ecological pedagogies (van Lier, 2011) applied to Parlure Games

Principles	Definitions	*Parlure Games*
1. Relationality	Language is relational; its meaning is based on its place and role with other elements nested within micro/macro ecosystems, and on how they are used by speech communities over time.	Audiovisual materials are sourced from five speakers located within a micro (e.g., city or country) or macro (e.g., global areas) system, supporting the learning of relationality in social and regional communities.
2. Context	Meaning emerges within specific spatiotemporal and sociocultural contexts by language users, allowing communication with human and non-human interlocutors.	Learner groups use technology to geo-locate audiovisual material related to a particular theme, providing sociocultural context to specific time and space.
3. Systems	Language rules are not prescriptive, but deduced through exposure to use by a speech community within a given socioecosystem; emphasis is on why one form is used over another.	Material is sourced from non-mass media outlets, representing exposure to authentic language use by diverse speech community members in a particular territory.
4. Emergence	The communicative repertoire is in flux, constantly re-organizing and transforming information derived from	Learning tasks are interactive and completed in groups, encouraging discussions that help develop learners' multimodal communicative repertoire.

	active language use within a socioecosystem.	
5. Quality	Learning must be relevant to learner interests, have real world implications, and engage their intellect and emotions.	Learning tasks involve group engagement to check comprehension of and form opinions on audiovisual materials that are based on students' communicative needs and interests.
6. Value	Education involves developing a moral and ethical stance towards the language one is learning to embody.	Using an imperial language in settler colonial contexts raises ethical questions about replicating its norms. Maps enable users to visualize how it sprawls across territories, cultivating a moral stance towards imperialism.
7. Critical Perspective	Opportunities are afforded to examine institutional structures, advocating for improvements from a clear ideological stance. This results in transformative pedagogies that develop learners' agency to articulate their perceptions in ways not always quantifiable via standardized testing.	Non-mass media materials afford multi-modal interactions with and discussion of diverse varieties, enabling learners to explore why such variation exists, and providing opportunities to articulate their opinions on using an imperial language
8. Variation	Involves noticing diverse regional and social dialects, allowing learners agency to decide which varieties to embody or reject, as they relate to their evolving identity.	Users interact with five distinct regional or social varieties, supporting them in choosing which linguistic identities they wish to converge with or diverge from.
9. Diversity	Acknowledges individual learner differences and promotes multilingual learning, which offers sociocognitive advantages over monolingual approaches.	High-variability learning provides sociophonetic and sociocultural attunement opportunities, triggering the same mechanisms involved with multilingual learning.

10. Agency	Promotes physical, social, and psychological (intellectual, affective) mobility within various socioecosystems through activities that engage in critical reflections on ethical learning.	Users virtually traverse multiple socioecosystems, developing their attunement for diverse speech communities, engaging in critical reflection on the ethics of imperialism.

In sum, PG is a computer-mediated tool addressing the need for variation and critical discussion in the imperial L2 audiovisual curriculum by using HVPT characteristics, which hone attunement skills for social markers of speech, and focus attention on comprehending the linguistic content of speech. To move this lab-based methodology into the L2 classroom, PG follows ecological principles, a plurilingually inclusive pedagogy supporting dyadic and triadic interactions with technology. We now report on evaluations of PG by imperial L2 instructors.

Stage 3: Assessing Suitability of *Parlure Games*

Once a tool is deemed pedagogically appropriate, Cardoso's third stage involves assessing its usability and acceptance ratings. The Technology Acceptance Model 2 (TAM2) provides such ratings, and is designed to measure adaptation behaviours towards new technology. It theorizes that the effects of external variables on the intention to use a tool, like its features or design, can be mediated by two determinants: (1) Perceived usefulness, measuring "the extent to which a person believes that using the tool will enhance job performance"; and, (2) Perceived ease of use, which measures "the extent to which a person believes that using the system will be free of effort" (Venkatesh & Davis, 2000, p. 187). Perceived usefulness is composed of three social influence (subjective norm, voluntariness, image) and four cognitive instrumental (relevance, output quality, results demonstrability, perceived ease of use) processes that together strongly determine user acceptance. As time is spent interacting with a technology, social influences regarding the use of a tool (e.g., peer influence) tend to wane, but cognitive

instrumental processes (e.g., how relevant it is for learning) often remain stable. Perceived ease of use, on the other hand, refers to the degree to which a person believes that using a particular technology is free of effort. The higher the TAM2 ratings are on these measures (e.g., on a 7-point Likert scale), the more likely users will accept the adopted technology. Since the 1990s, the TAM2 has been a reliable model to predict acceptance of a technology at pre- and post-implementation among adult users.

In our study, we report on TAM2 ratings for perceived usefulness and ease of use (see Appendix C), as well as written feedback, of *Parlure Games* as it relates to the tool's three teaching and learning goals (Appendix D): teaching variability, developing plurilingual competencies, and affording critical discussions. This paper is guided by the following research questions: (RQ1) To what extent do *perceived usefulness* and *perceived ease of use* influence L2 instructors' acceptance of *Parlure Games* as a pedagogical tool in their classrooms? (RQ2) What are L2 instructors' perceptions of *Parlure Games* for the three goals?

Method

Study Context

In 1642, France established a religious settler colony on the unceded territories of eleven indigenous nations, reterritorializing it as Québec, and eventually becoming a province in the larger settler colonial macrosystem, reterritorialized as Canada. Education was largely overseen by divisive religious institutions, specifically the majority French Catholics and minority English Protestants. By the early 1900s, teacher education for anglophones was overseen by McGill University, but it would take until the 1960s, after the *Révolution tranquille*, for it to fall under the province's purview for francophones (Smyth & Hamel, 2016). Nationalist movements swept across Québec, including the officialization of French under Bill 22 (1974), making it the

language of the workplace, signage, and schools, thereby replacing previous religious tensions with linguistic ones. Unlike the rest of Canada, the teaching of ESL (TESL) in Québec occurs mostly within francophone, not anglophone, primary and secondary schools, and ESL teachers must also pass a French-language proficiency test, making them bilingual (Riches & Parks, 2021). Currently, almost half of Québeckers live on the island of Tiohtià:ke, reterritorialized as Montréal, where English is a minority language, but where 28% of Montrealers increasingly report fluency in a third language other than Canada's official French and English languages, demonstrating an upward plurilingual trend in the city (Statistics Canada, 2021).

The assessment of *Parlure Games* was conducted in an English-medium university "Teaching Phonology" course required for the Bachelor of Education program, certifying graduates to teach ESL in Québec primary and secondary schools. All educators seeking certification are subject to Ministry requirements related to the Québec Education Program's (2021) 13 professional competencies, which include taking into account student diversity (competency #7), mobilizing digital technologies (#12), and acting in accordance with the ethical principles of the profession (#13). Classes consisted of 13 weekly two-hour-and-forty-five-minute in-class lectures, each involving group activities using computer-mediated tools (e.g., Google Drive documents, online videos). Weeks 1 to 9 focused on solving segmental and suprasegmental data sets related to the pronunciation of North American English. Weeks 10 and 11 involved individual and group jigsaw reading of Lau's (2022) article. Classroom activities focused on critical discussions about the history of and inclusive practices within ESL teaching in Canada and explored plurilingual techniques (e.g., cross-linguistic analysis; Galante et al., 2022) for teaching pronunciation. Students played PG on week 12, before their peer-teaching assignment, requiring designing a plurilingual pronunciation teaching technique.

Participants

The 17 teacher candidates (female, n = 8; male, n = 8; non-binary, n = 1) who agreed to participate were all proficient speakers of English as a first (n = 12) and second language (n = 5) and had knowledge of French as a first (n = 3), second (n = 9), or third (n = 5) language. With the exception of one participant, all others had experiences with other English varieties (n = 3; e.g., American Sign Language, Guyanese, New York) or other languages, like Spanish (n = 6), Italian (n = 4), Japanese (n = 3), Vietnamese (n = 2), Arabic (n = 2), Cantonese (n = 1), Catalan (n = 1), and Tamil (n = 1) through heritage, study, travel, or media. Participants, therefore, were plurilingual, with interests in or experiences with languages outside of their ethnic backgrounds. Most were under 30 years old (n = 14), and three were under 45. With the exception of one older student with more than five years' ESL teaching experience, all others had limited experience outside of their concurrent teaching internship that semester.

Participants were placed in groups of three to four and provided with step-by-step instructions for selecting PG content (Figure 8). Each step was modelled to students, and a demonstration of a completed PG map was shown. For the first step, the class chose the theme of comedy, and groups were tasked with finding corresponding audiovisual material, geo-locating it using a pin, identifying a linguistic objective for how this feature could be taught, and presenting their travel point to the class (Figure 9).

Figure 8

In-class instructions for creating a PG travel point

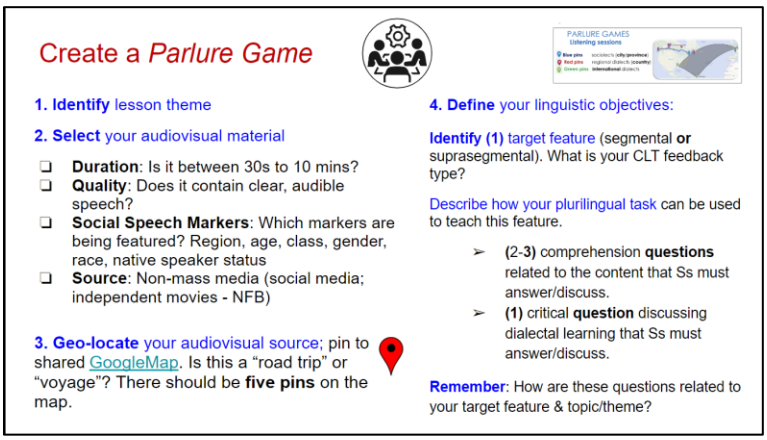
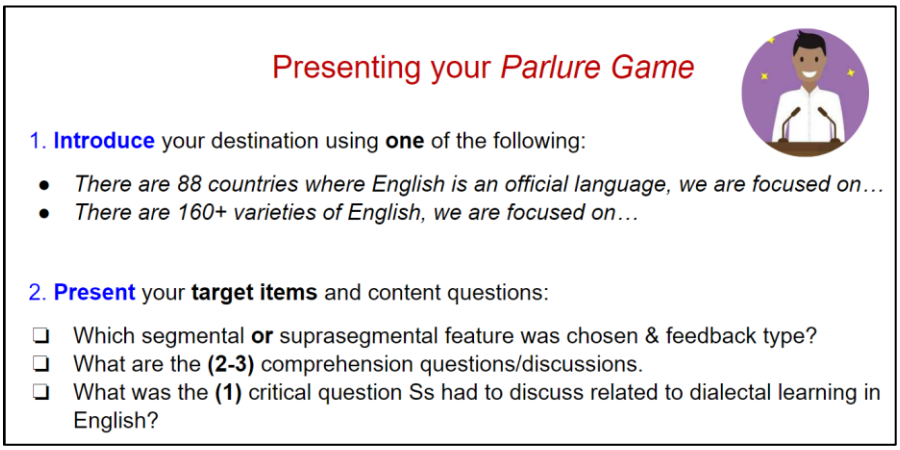


Figure 9

In-class instructions for presenting a PG travel point



Immediately afterwards, participants individually completed an online questionnaire consisting of three parts: biodata information (i.e., age, language background, length of teaching experience), TAM2 ratings based on a 7-point Likert scale (i.e., 1 = Totally disagree; 7 = Totally agree), and short-answer questions (Appendices C, D).

Data Collection, Analysis, and Discussion

A mixed-methods approach to data collection and analysis was adopted. To address RQ1, mean ratings were reported for the TAM2's perceived usefulness and perceived ease of use (Table 3) of *Parlure Games*. Subscale reliability was determined using Cronbach's alpha (α). A construct may be considered reliable when Cronbach's α = .70 (Field, 2018), and is reported in Table 3. To address RQ2, related to PG's three teaching goals, participants' written feedback was analyzed using an iterative, inductive approach that first involved in vivo then motif coding for recurring words or ideas to identify patterns and develop categories that shaped the overarching constructs in participants' responses (Saldaña, 2021).

Results

RQ1: TAM2 Ratings - Acceptance of *Parlure Games*

For both subscales of our survey, Perceived Usefulness (α = .92) and Perceived Ease of Use (α = .88) were above Cronbach's α = .70 threshold, suggesting a high level of internal consistency among their respective items. Table 1 summarizes the results. Participants showed an overall positive perception of the usefulness of *Parlure Games* in an ESL classroom (M=5.63, SD=1.09). Each item in the Perceived Usefulness subscale had a mean rating above the level of neutrality. *Using Parlure Games in an ESL class could make it easier to teach listening tasks* was the highest-rated item in this subscale (M=6.00, SD=1.17), while *Using Parlure Games in an ESL class could permit me to complete listening tasks rapidly* was the lowest-rated item (M=5.24, SD=1.39). In addition, participants showed an overall positive perception of *Parlure Games*' ease of use (M=5.74, SD=0.92). Each item in the Perceived Ease of Use subscale also had a mean rating above the level of neutrality. *I found Parlure Games easy to use* was the highest-rated item in this subscale (M=5.94, SD=1.09), while *I found it easy to get Parlure Games to do what I*

wanted it to do (M=5.47, SD=1.09) was the lowest-rated item. The results suggest that participants perceived both the usefulness and ease of use of *Parlure Games* positively, as the mean of each item in each subscale was above the level of neutrality (established at 4 on the 1 to 7 Likert scale rating).

Table 3

Descriptive Statistics of Survey Results

Survey items	Mean/7	SD
Perceived Usefulness (α = .92)	**5.63**	**1.09**
Using *Parlure Games* in an ESL class could:		
… be useful.	5.82	1.24;3:7
… permit me to complete listening tasks rapidly.	5.24	1.39;2:7
… enhance my listening training program	5.71	1.26;3:7
… boost student productivity.	5.35	1.27;2:7
… improve the efficiency of listening tasks.	5.65	1.46;2:7
… make it easier to teach listening tasks.	6.00	1.17;3:7
Perceived Ease of Use (α = .88)	**5.74**	**0.92**
Learning how *Parlure Games* works was easy.	5.47	1.28;3:7
I found it easy to get *Parlure Games* to do what I wanted it to do.	5.59	1.42;2:7
My interaction with *Parlure Games* was clear and understandable.	5.88	1.05;2:7
I found the interaction with *Parlure Games* to be smooth.	5.88	1.05;4:7
It was easy for me to become adept at using *Parlure Games*.	5.65	1.06;4:7
I found *Parlure Games* easy to use.	5.94	1.09;3:7

RQ2: Teachers' Perceptions of *Parlure Games*

To better understand these acceptability ratings, participants gave written feedback on what they liked and disliked about PG, specifically with regard to its three goals: teaching

sociophonetic variability, developing plurilingual competencies, and affording critical discussions of imperialism.

General Feedback

In terms of what participants liked about PG, three concepts were identified. First, it was viewed as engaging, derived from 16 codes categorizing PG as "engaging," "fun," "easy to use," and "interesting," because it contained "authentic materials." The second concept, derived from 15 codes, involved diversity, categorizing PG as facilitating either the learning or comprehension of diversity (e.g., languages, dialects, accents, cultures, and geographies), a process that was often described in terms of "comparing" or "adjust[ing] their listening quickly." The final concept, freedom to choose, was derived from 15 codes describing PG's ability to "choose," "change," or "pick" where on the map to go, what materials to use, and to "adjust levels as much as you want." Taken together, these concepts can be understood as the freedom to engage in linguistic diversity, which most participants (n = 12) stated was their experience: "it was an easy way to listen to examples of many different dialects back-to-back."

In terms of what participants disliked about PG, three main issues were identified. Many wanted more time navigating it (n = 9), while others focused on the "stress" (n = 3) of finding materials and wanted pre-selected content or a "list of countries" to choose from. Finally, the interface was described as too "simple," needing more interactivity, like "trivia" (n = 2), and others found it too limiting (e.g., "text box size"), wanting a mobile version for phones (n = 2). Five participants left no comment.

Teaching Variability

All participants stated that PG could contribute to teaching linguistic variation. The most common description was its ability to provide "an approachable way to talk about the different

components of these dialects and their possible differences or similarities with the target language or L1" by using "snippets of speech from different regions. This sociophonetic learning was described in two ways. First was its ability to expose users to diversity (derived from 56 codes) based on three types of speech markers: phonetic ("accent"), regional ("place"), and social context ("authentic"). The following comment, for example, operationalized all three: "an accent from Newfoundland isn't usually presented and could be hard to understand if never experienced previously." The second concept was PG's engagement of attunement skills (derived from 24 codes) based on categories describing listening tasks, keeping users engaged, and developing sociocultural skills, which one user stated could include learning how to "identify people who … have the same dialect."

Plurilingual Competencies

Almost all participants (n = 16) replied that PG could contribute to developing plurilingual competencies in two ways. The first, derived from 42 codes, was developing skill sets such as (a) perceptual differentiation in "listening," "comparing," or finding "similar[ities]" between different varieties and speakers, cultures, and subject matter; (b) production skills for pronouncing certain "segmental" and "suprasegmental" features or via discussions; and (c) cognition (e.g., "comprehension," "processing"). The second competence, derived from 22 codes, described a spirit of inclusion for diverse language, dialects, accents, and cultures, which could be "confidence boosting," with one user noting, "[it] helps to decentralize NAE [North American English] by highlighting other dialects, not as lesser, but just different ways of speaking English." Three participants provided plurilingual activities they would use: "uploading different people reading texts," creating a "map to show how certain words are pronounced in different parts of the world" (i.e., isoglosses), and showing "examples of translanguaging" or

using translation for "mediation." One participant, however, reported unease, stating that there might be too "many examples … that a class would have to hear."

Critically Discussing Imperial Languages

In terms of the tool's acceptability ratings for discussing imperialism, five participants were "unsure" or stated it could "potentially" be used. The remaining 12 noted three distinct ways in which PG could contribute to critical discussions. The first was to show the spread of English (n=10), including "how easy it was to find videos of speakers in different countries speaking English, but you couldn't do the same with most other languages." The second was to discuss English's "origins," "history," and current "effects on local dialects, languages," with many (n=7) wanting more historical and geographical knowledge: "imperialism … is rarely mentioned in class. I feel like I would need some material to have a stronger understanding and speak about it with confidence." One participant noted that teachers could assign "readings that discuss [colonial] topics" to help bridge this gap. The final concept involved normalizing talking about differences (n = 6), underlining that imperial L2 learners should "embrace … different dialects and that there is no end goal to what their English should sound like."

Discussion

Following Cardoso's (2022) framework, we have provided the theoretical development and motivation for *Parlure Games*, an interactive online tool affording opportunities to explore and critically discuss the linguistic variation of an imperial language. We have discussed its pedagogical affordances and now turn to analyzing its acceptance and suitability for in-classroom use among plurilingual participants who had experience critically discussing imperial languages and completing plurilingual tasks. In this study, ESL teacher candidates' acceptability ratings for PG's perceived usefulness (M = 5.63) and perceived ease of use (M = 5.74) were

high, with participants indicating that it was user-friendly and beneficial for the three goals of our tool. These high TAM2 ratings, which posit that a tool's perceived ease of use (belief that a tool can enhance teaching performance) and perceived usefulness (belief that using the tool is free of effort) help determine users' acceptance and adoption of new technologies (Venkatesh & Davis, 2000), suggest that it is likely to be accepted and adopted by imperial L2 teachers. We now turn to discussing how the tool met each goal.

General Feedback

Overall, teacher candidates liked the fact that PG gave them the "freedom to choose" and to engage with different varieties of the imperial language, by accessing "authentic" materials from non–non-mass-media sources. However, some also found this "freedom" stressful. This is a known phenomenon in computer-assisted language learning, as sorting through online material to fit the teaching context is time-consuming. Hubbard (2017) offers multiple sorting methods for teachers to curate their online content, like "explanatory" materials focused on phonetic learning, suitable for sociophonetic and plurilingual learning, and "regulatory" materials for metacognitive reflection on tasks, suitable for critical discussions on imperialism.

Despite familiarity with Google-based applications, many participants wanted more time to navigate PG and felt pressure to find content related to the agreed-upon comedy theme, wanting pre-selected material. To the first point, time constraints are always a classroom issue and can be overcome by extending PG use over several classes or assigning it for at-home use. In a study measuring computer-based learning outside the classroom, L2 learners determined the quantity and schedule of their training sessions and demonstrated learning gains on the linguistic features under study (Barriuso & Hayes-Harb, 2018). To the second point, offering pre-selected material entails pre-selecting a theme or linguistic objective, which may disregard ecological

"quality" (be relevant to learner interests and needs; van Lier, 2011). Participant feedback provided a useful suggestion by having student groups in charge of selecting PG's audiovisual content (i.e., following the material selection guidelines; Figure 8), ensuring that materials are relevant to learner interests. In fact, another suggestion involved assigning at-home activities related to imperial histories and geographies (e.g., noting when the English arrived or its effect on local languages), which addresses concerns about needing more support in understanding imperialism's history. We further suggest that student groups also create comprehension and social speech marker questions related to the video's content, as this enables learners to have multiple interactions with audiovisual materials, satisfying HVPT characteristics requiring multiple exposures to human voices. Finally, comments related to finding the interface too simplistic and wanting more interactivity, like trivia questions, are addressed under Future Directions below.

Teaching Variability

All teacher candidates agreed that PG could contribute to teaching about the variation of an imperial language, describing it as "an approachable way" to expose learners to linguistic diversity. Their responses about how the tool could be used focused mostly on paralinguistic social speech markers in first-wave (e.g., regional accent learning) and second-wave (e.g., situational context learning) variation studies. Exposure to diverse regional accents and authentic situations has long been advocated for in imperial L2 classrooms to enrich the curriculum beyond its standardized invariability (Seeger, 2019) and to feature speakers other than its white and Eurocentric members (Rosa & Flores, 2023). Although attuning to regional variation has shown robust phonetic learning in both second dialect (Clopper & Pisoni, 2004) and second language (Brekelmans et al., 2022) learning, focusing on region alone ignores other social speech

markers, like the variation found among diverse ages or racial groups, both of which have visual markers known to affect speech processing. In the event that regional variety is kept constant (e.g., North American English alone), then variation must occur in other markers (e.g., age, race, sex, or native-speaker status) to ensure that HVPT characteristics are met. Participants additionally described how PG could be used to sharpen skills such as listening, discussion, and sociocultural learning. As discussed in Stage Two, PG was designed to be an interactive ecological learning tool (van Lier, 2011), meaning that it facilitates the navigation of the nested, plurilingual, socioecological systems that L2 learners live in (Larsen-Freeman, 2020), which we discuss next.

Plurilingual Competencies

Although one participant was concerned that PG would result in exposure to too much variation, a noted reservation found in L2 teacher education often linked to notions of keeping the imperial language "pure" (Motha, 2014, p. 32), most teacher candidates agreed that PG could contribute to plurilingual learning. Feedback overwhelmingly targeted attunement skills. For listening, the core skill set needed for oral language learning (Larsen-Freeman, 2020), the focus was on detecting and comprehending "differences or similarities with the target language or L1" for segmentals and regional accents. For speaking, the focus was on pronouncing and discussing "segmental" or "suprasegmental" features and how they contributed to comprehension and sociocultural learning, like differentiating between cultures. Specific plurilingual activities, like cross-linguistic analyses using isoglossic maps and translanguaging, can contribute to this cultural learning goal.

Relatedly, participants mentioned that PG promoted a "spirit of inclusion" by "decentraliz[ing]" the dominant North American English variety and showcasing "other dialects,

not as lesser, but just different ways of speaking English," a move that they claimed could be "confidence boosting" for learners. Inclusion, however, involves more than showcasing linguistic diversity; it involves a reduction in communicative barriers (Chung & dela Cruz, 2024). One participant mentioned that PG could help learners "identify people" by their "dialect," a skill set linked to enhancing L2 comprehension (Brekelmans et al., 2022). However, dialects of imperial languages are not simply "different ways" of speaking English; they are varieties that emerge as resistance to native-speaker norms in the macrosystem, such as African American English, which challenges white-speaking norms in the United States and asserts inner-group affiliation (Baker-Bell, 2020). Again, showcasing regional varieties alone may not be sufficient to support critical multi-dialectal learning of an imperial language and may actually reproduce colonial logics, an issue we explore next.

Critically Discussing Imperial Languages

Teacher candidates' acceptability ratings for PG's ability to contribute to discussing English imperialism received the most diverse feedback. Those who felt it did contribute to discussing imperialism focused on how it helped visualize its geographic sprawl and the fact that the widespread nature of English made it "easy to find videos of speakers in different countries." The tool, some concluded, normalized talking about differences, liberating learners from rigid ideals about "what their English should sound like." This spirit of inclusion, however, may run the risk of normalizing English imperialism. Although PG's use of mapping was intended to visualize imperial sprawl, maps can "reinforce colonial-era expansionist" mindsets, obfuscating their reterritorializing history on unceded territories and normalizing the imperial language (Bedecarré, 2022, p. 35). To avoid reproducing imperial expansionist logics, we adopt Bedecarré's (2022) suggestion of showcasing imperial maps at different time periods, which

provides a time lapse of territorial annexation, regression, and overlap with competing imperial powers (e.g., https://www.oldmapsonline.org/), or using non-colonial maps (Lucchesi, 2018; see https://native-land.ca/), both of which invite learners to manoeuvre through diverse macrosystems and to question colonial borders. “Shuttling” between “global agendas, while simultaneously marking specific localized agendas” opens what Bhattacharya (2021) describes as a “de/colonizing” space that disrupts settler education’s traditional mandate of perpetuating oppressive structures (p. 1), like reterritorializing monolingual policies. Additionally, this approach enables imperial language users, both teachers and students alike, to acquire vocabulary for critiquing imperialism (Bedecarré, 2022), supporting those who felt they needed more historical and geographical knowledge.

Overall, ESL teacher candidates’ acceptability ratings for PG were high, indicating that it was user-friendly and likely to be adopted by users. However, we acknowledge the limitations of having conducted this study among plurilingual users living in Canada’s most multilingual city, where English has a minority status, as this may have resulted in more favorable PG ratings. Following the iterative approach for software development (Larman & Basili, 2003), future PG testing should derive acceptability ratings from teacher candidates with less plurilingual experiences or who live in locations where the imperial language under study is dominant in the environment (e.g., French in Montreal) to ensure that the tool meets its three stated objectives. Doing so would help us to substantiate changes before in-classroom implementation, the final stage of Cardoso’s (2022) framework for conducting computer-assisted language-learning research.

Future Directions

In Stage Four, *Parlure Games* is assessed for its pedagogical effectiveness. Based on the feedback received from pre-service teachers, the following modifications should be made to the interface and materials before in-class deployment.

Interface

In response to participants finding the interface limiting and wanting more interactivity, like trivia questions, future PG iterations should have pins hotlinked to a singular site that can host both audiovisual content and questions simultaneously and that is accessible across multiple devices (e.g., laptops, phones). Interactive gaming sites, like Kahoot, have such capabilities and can provide immediate feedback on responses, thus satisfying HVPT requirements. Moreover, response time to questions can also be captured with points assigned for correct responses, a feature known to boost user interactions and develop language skills (Cardoso, 2022), allowing instructors to track student progress, facilitating Cardoso's fourth stage of pedagogical testing.

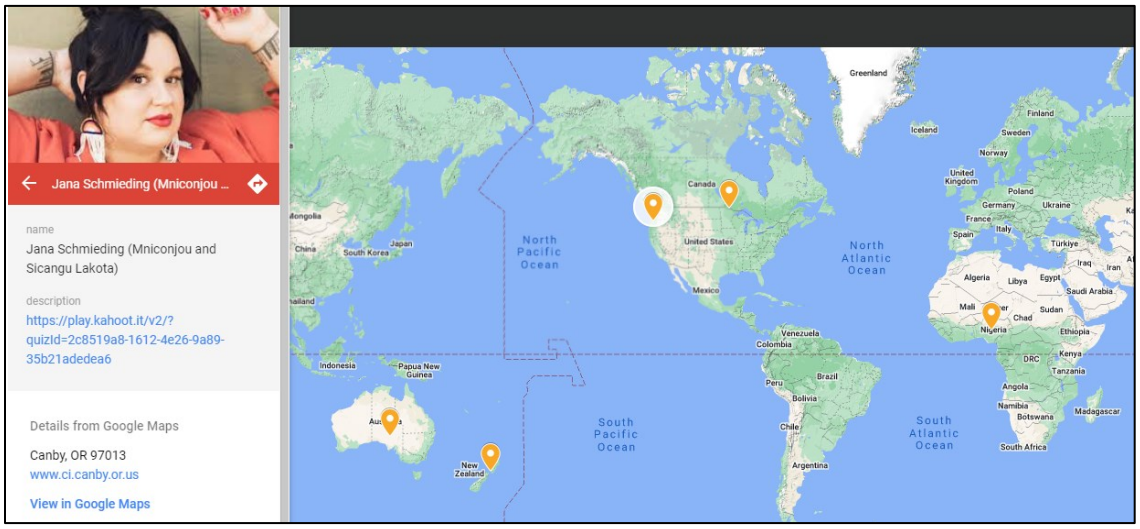
Materials

Requests for pre-selecting materials for L2 students, instead of with them, may violate the principle of ecological "quality", which ensures that learning is relevant to learners' stated interests (van Lier, 2011). This request is likely because the users were teacher candidates, who would not yet have amassed materials for their classrooms. Nevertheless, to satisfy requests for a fully-loaded PG that uses regional variation first, to promote high variability learning (but does not focus on one social speech marker alone) and, second, to challenge white-settler monolingual pedagogies (but do not reproduce settler-colonial logics), we provide an example of a PG expedition voiced entirely by Indigenous speakers. Re-employing participants' choice of comedy as a theme, and using links to Kahoot, a local "road trip" can feature five comedians from any of

the 630+ Indigenous communities across Canada (Government of Canada, 2024), or an international "voyage" involving five comedians from across the globe (Figure 10).

Figure 10

Expedition of PG International "Voyage" with Link to Questions Hosted on Kahoot of a Female Mniconjou and Sicangu Lakota Comedian Located on Land Reterritorialized as Oregon, United States



First, to ensure that regional variation is not the only speech marker targeted, elders and younger comedians from across the globe who are male, female, or two-spirit can be targeted, providing extralinguistic variation related to markers of age, race, and gender. As mentioned earlier, sourcing online material from non-mass-media outlets diversifies the monolingual, white-indexing standard of mass media currently overused in imperial L2 classrooms (Curzan et al., 2023). Moreover, social media plays an important role for Indigenous people to form connections to and articulate their Indigeneity, while resisting ongoing colonization and sharing their culture with non-Indigenous peoples (Crandall, 2023). Within Canada, government-funded professional associations can also be resources for non–non-mass-media content, often

containing thematically indexed audiovisual material curated with and by Indigenous community members, making it easier for users to locate and organize "regulatory" and "explanatory" materials (Hubbard, 2017). For example, the Alberta Teachers of English as a Second Language organization offers online audiovisual resources themed "Indigenization," and the federally funded Immigrant Education Society offers resources themed as "Indigenous voices in the classroom." Second, Indigenous-voiced materials afford opportunities to learn about Indigenous issues, which are often pan-continental concerns related to the violence of imperial sprawl and reterritorialization processes, challenging colonial logics.

Making Indigenous-authored material part of the imperial L2 curriculum disrupts and unsettles the reterritorialization practices that settler education systems are intergenerationally built upon, specifically in their invisibilization of Indigenous voices (Sterzuk, 2022). It also addresses calls 62–65 of the federal Truth and Reconciliation Commission for Canadian teacher programs to decolonize their curriculum and forward "indigenist agendas," which involve promoting Indigenous authors and issues (Battiste, 2013, p. 73). In Québec, this aligns with Professional Competency #15 to "value and promote Indigenous knowledge, worldviews, cultures, and history" (First Nations Education Council, 2020).

Finally, before creating an Indigenous-centred curriculum, imperial L2 instructors are advised to first critically self-examine their personal relationship to the colonial process (Battiste, 2013). We recommend the Multimodal Autobiographical Landguaging Portrait (MALP), an arts-based self-reflection tool that enables imperial instructors to reflect, identify, and map their own linguistic experiences to the locations where they occurred, sensitizing them to how land has influenced their language use and to externalize these reflections with colleagues for feedback and professional development (Chung & Cardoso, in press). These self-reflection exercises were

created to address the gap found in our case study (Chung & Cardoso, 2022), whereby imperial L2 teachers reported positive feelings about having a linguistically diverse curriculum, but their classroom materials were found to be sociophonetically invariable. To further support imperial L2 teachers in designing land-sensitizing pedagogies with Indigenous-authored materials that use plurilingual activities, we also recommend using the Landguaging template (Chung & dela Cruz, 2024).

Conclusion

Monolingually oriented pedagogies found in the microsystem of the imperial L2 classroom are connected to the assimilative reterritorializing policies in the macrosystem, like the English and French settler colonies collectively called Canada. Such classrooms are known to diffuse low-variable, standardized dialects, indexed to white speakers, which are not diverse enough to promote the kind of robust language learning that HVPT predicts, nor is it socially useful in multilingual environments, like cities, where navigating diverse linguistic, cultural, and semiotic information is so normal, it is considered “mundane” (Pennycook & Otsuji, 2019). To diversify the social speech markers of the imperial L2 audiovisual curriculum, we followed Cardoso’s (2022) four-stage framework for creating computer-assisted language learning curriculum, allowing us to track the theoretical development, pedagogical affordances, and acceptance ratings for Parlure Games. This online mapping tool uses HVPT and ecological principles, affording users opportunities to multimodally attune to linguistic variability, promote plurilingual learning, and support critical discussions regarding the sprawl of imperial languages. Although chronological, this framework is not linear and requires iterative processes during design and development in response to user feedback and theoretical developments, making this tool adaptable to both instructor and learner needs. We have also provided pedagogical activities

that centre Indigenous voices, opening possibilities to de/colonize the imperial L2 curriculum and promote inclusivity.

Chapter Four: Conclusion

The goal of this dissertation was to investigate how two imperial and non-Indigenous languages in Canada (English and French) can be taught in a way that resists replicating their monolingual and colonial traditions. Grounded in critical applied linguistics and ecolinguistic theory, this research advocated for plurilingual approaches to teaching imperial languages across dialects. At the same time, it sought to sensitize L2 instructors and their learners to the entanglement of language, land, and empire through the development and assessment of critical ecological pedagogies. In Chapter 1, I reviewed the ecolinguistic framework that both Manuscript A and B are rooted in. This multimodal and plurilingual approach focuses on creating communicative activities that build relationships in the nested macro- to micro-sized socioecosystems, representing a shift away from the input/output-based concept of receiving/producing a fixed linguistic code normally found in applied linguistics research (i.e., the mind as a machine; van Lier, 2004). I further emphasized the role that interactive computer-assisted language learning (CALL) plays in ecologically developing language skills (van Lier, 2000; Lafford, 2009; 2019). Since this research was conducted with imperial languages (French and English), I provided a section tracing how their regional and social variations are consequences of territorial expansionism and described how French and English L2 teacher education systems in Canada are part of settler colonial processes.

The following section offers an in-depth discussion of the findings presented in Chapters 2 and 3 of this dissertation. In Chapter 2 (Manuscript A), I conducted an ecological CALL analysis of learning an imperial language (French) in two settings. My research questions focused on understanding how teachers selected materials for their intermediate-level classrooms and on inventorying what kinds of social speech markers are diffused in their audiovisual

materials. Based on these findings, in Chapter 3 (Manuscript B), I designed and evaluated a pedagogical tool to address the lack of sociophonetic variation in imperial L2 materials by following Cardoso's (2022) framework for conducting CALL research. This manuscript detailed the development of an HVPT ecological CALL tool (*Parlure Games*) that amplified voices absent from the imperial L2 curriculum (as identified in Manuscript A) and reported on user feedback using the Technology Acceptance Model (TAM2). After reviewing the findings of these two chapters, I outline the limitations of these studies and provide directions for future research.

Chapter 2: Manuscript A

Chapter 2 analyzed social speech marker variation in the audiovisual material of an imperial (French) L2 classroom in Montreal. In keeping with ecolinguistic research methodologies, I used a comparative case study to understand how FSL teachers in the university and *francisation* settings select audiovisual materials for their intermediate-level adult learners – a proficiency level at which learners are assumed to be capable of navigating sociophonetic variation (Flege & Bohn, 2021). Data were collected from teachers' biodata questionnaires, interviews, and audiovisual curricula (e.g., online videos). There were five important findings:

1. Incorporating authentic audiovisual materials in the classroom requires attention to both their physical parameters (e.g., duration, acoustic quality, limiting captioning use for selected materials) and relevance to learners (e.g., course themes, student interests);
2. Teachers agreed that, unlike beginners, intermediate and advanced level learners should be exposed to "authentic" materials, defined as input that was not scripted

for textbooks (e.g., DVDs with conversational transcripts) and sourced from domains, like mass media;

3. Teachers agreed that focusing on Québec French and including racialized and non-native speakers was suitable and beneficial for classroom learning.
4. Even experienced, plurilingual L2 teachers who express positive views toward including social speech marker variation in their curriculum may still rely on materials that are sociophonetically invariable (e.g., featuring predominantly "middle-aged", white, native speakers from Québec);
5. This lack of variation is particularly pronounced when materials are sourced from mass media, which by definition disseminate a standardized variety indexed to its middle-class, white, urban speakers (Curzan et al., 2023; Flores & Rosa, 2015; Sterzuk, 2015) and is closely tied to national capitalist ventures (Fairclough, 2015; Herman & Chomsky, 2002).

The use of mass media as a source of authentic materials in the L2 classroom inevitably perpetuates imperial ideologies, specifically the maintenance of linguistic and cultural "homogeneity" (Veracini, 2022), and limits opportunities for developing learners' attunement for diverse social speech markers. In contrast, a small number of audiovisual materials sourced from non-mass media (e.g., Facebook and National Film Board of Canada) displayed greater racial and regional variation. These sources suggest promising alternatives for promoting sociophonetic diversity in the classroom.

In sum, this study demonstrated how the nature of imperial languages, as diffused through mass media, veers towards marginalizing speakers such as the elderly, children, and adolescents, Indigenous, Black, racialized, and non-native speakers, ultimately resulting in

monolingual audiovisual curricula. In this context, learning French mirrors the acquisition of other settler colonial languages in the Americas, like English or Spanish, where speaker variation is often limited to white, native-speaking norms (Curzan et al., 2023; Flores & Rosa, 2015). Although Québec French may constitute a distinct regional variety in Canada that was previously excluded from FSL studies (Chapelle, 2014; Kircher, 2014), the lack of social speech marker variation diffused in the materials used to teach it aligns with run-of-the-mill settler colonial logics.

Chapter 3: Manuscript B

In response to the invariability of social speech markers in the audiovisual curriculum observed in Chapter 2, Chapter 3 (Manuscript B) focused on developing an ecological CALL tool that facilitates teaching imperial languages (e.g., English and French) with greater variation, by intentionally amplifying those voices identified to be marginalized in existing pedagogical materials. *Parlure Games* (PG) was developed to support instructors and their learners in accessing and interacting with more variable voices. Following Cardoso's (2022) four-level chronological framework for developing interactive CALL tools, this chapter tracked the development (Level 1) and pedagogical affordances (Level 2) of Parlure Games, and reported on its pedagogical suitability (Level 3) using the Technology Acceptance Model-2 (Venkatesh & Davis, 2000), which evaluates users' perceived usefulness and ease of use – two key predictors of technology adoption in educational contexts.

As detailed in Level 1 and Level 2, PG adhered to the five characteristics of HVPT (known to promote robust L2 skills; Barriuso & Hayes-Harb, 2018; Logan et al., 1991) and the twelve principles of ecological language learning (which emphasize critical plurilingual learning; van Lier, 2011). Sourcing audiovisual material from non-mass media outlets (e.g., social media,

independent film boards), PG used online mapping to examine sociophonetic variation voiced by five speakers marginalized from the curriculum (e.g., Indigenous voices), located either locally (forming "road trips" within a country or city) or globally (forming "international voyages" across different countries or continents). To ensure comprehension and noticing social speech markers, feedback questions related to markers and content are posed after each video is watched, facilitating group interaction. Upon completion of a five-point expedition, users were left with a visual representation of where the imperial language is located within or across territories. The pedagogical aims of Parlure Games are to:

- Expose users to sociophonetic variation (e.g., pronunciation or lexical differences) through audiovisual materials;
- Develop plurilingual competencies (e.g., learning about linguistic or cultural differences);
- Enable critical discussions about imperialism's territorial expansionism (e.g., a completed map).

In assessing its pedagogical suitability (Level 3), *Parlure Games* received high ratings from teacher candidates on the TAM-2's measures of perceived usefulness ("the extent to which a person believes that using the tool will enhance their [teaching]") and perceived ease of use ("the extent to which a person believes that using the system will be free of effort"; Venkatesh & Davis, 2000, p. 187), suggesting that *Parlure Games* is likely to be accepted and adopted by imperial L2 teachers. Based on qualitative feedback from their written surveys, the tool was further modified along three dimensions. First, a more integrated interface able to simultaneously host video and content questions, with immediate feedback on responses (similar to platforms like Kahoot), which also allows instructors to capture response times and monitor student

progress. Such features support Cardoso's fourth and final level, which focuses on assessing the tool's pedagogical effectiveness. Second, users requested pre-selected materials and a list of countries where the imperial language is spoken. Although pre-selecting materials *for* students instead of *with* them violates the principle of ecological "quality" (which emphasizes that learning be relevant to learners' interests and needs; van Lier, 2011), this request can be easily met by focusing on materials voiced entirely by speakers Indigenous to these regions. In doing so, this advances "Indigenist agendas" within settler education programs, which involves promoting Indigenous authored texts and perspectives (Battiste, 2013, p. 73). Finally, to avoid reinforcing colonial mindsets that normalize expansionist logics when using maps, adopting Bedecarré's (2022) suggestion of showing time-elapse maps (i.e., showing territorial annexation, regression and overlap at different time periods) or using non-colonial maps (Lucchesi, 2018; https://native-land.ca/) invites learners to question colonial borders and their territorial sprawl.

General Conclusion

This dissertation explored the acquisition of linguistic variation as it relates to learning an imperial language within a settler colonial context. In Canada, settler colonialism involves a triadic relationship of French and English colonizers implanting themselves into foreign territories, using social structures to eliminate and to replace the Original (autochthonous) people of the territory, and gate-keeping out other allochthonous settlers (e.g., other colonizing peoples, immigrants) using intergenerational assimilative policies. Viewed through this lens, it is perhaps unsurprising that the imperial L2 (i.e., FSL) classrooms analyzed in Chapter 2 diffused *invariable* social speech markers in their materials.

Parlure Games (Chapter 3) was proposed to address the invariable, monolingual orientations of imperial L2 instruction by opening space to explore the diverse linguistic varieties

and cultures that persist in waves of imperialism, using multiple instructional modalities (e.g., audiovisual materials, discussion). However, this interactive plurilingual tool cannot meaningfully advance decolonial efforts in the imperial classroom unless it includes Indigenous voices; otherwise, it risks re-enacting colonial dynamics by focusing only on allochthonous voices. As *Parlure Games* demonstrated by amplifying marginalized voices and promoting sociophonetic diversity, pluralizing the imperial classroom can help orient it towards decolonization, especially when Indigenous voices are centred.

In the following section, I describe the limitations of this dissertation and then detail how future research using plurilingual land-based pedagogies and teacher reflection activities may further support L2 teachers of imperial languages in creating pedagogies inclusive of diverse voices and the land itself.

Limitations

As detailed in each chapter, there were specific limitations related to each study. For example, Manuscript A focused only on two institutional settings and adult learners at the intermediate level, leaving unanswered questions regarding how social speech markers are diffused in other settings with other ages and levels. Manuscript B, meanwhile, was tested with novice L2 instructors, raising questions about how more experienced teachers, who may already have a catalogue of materials, might tailor *Parlure Games* to suit their teaching practices. However, both studies primarily focused on teacher perspectives, leaving unexplored how students perceive the representation of social speech markers in audiovisual materials, both inside and outside of their classroom experiences, or how *Parlure Games* supports them in sociophonetic learning. Moreover, this research was conducted in Montreal, Canada's most multilingual city, meaning that results may not generalize to less urban locations with lower

levels of linguistic and cultural diversity. Relatedly, Manuscript A focused on FSL contexts (where French holds official language status), whereas Manuscript B focused on ESL contexts (where English is a minority language). Although these may appear to be different L2 learning environments, this pattern of invariability across social speech markers is consistent with other settler colonial contexts where multiple imperial languages coexist (e.g., English and Spanish in the United States; Flores & Rosa, 2015), underscoring that that the learning of imperial languages is monolingually oriented.

As emphasized throughout this dissertation, settler colonialism makes it intentionally difficult to incorporate variation because it is designed to stigmatize, erase, and assimilate Indigenous and diasporic voices using policies that iconize the colonizer's language and culture on seized territories (Gal & Irvine, 2000). These assimilatory tendencies help explain the sociophonetic invariability found in the FSL audiovisual materials analyzed in Chapter 2 (Manuscript A). Chapter 3 (Manuscript B) addresses this shortcoming through the development of *Parlure Games*, which uses HVPT as a plurilingual technique to expose learners to wider variation, building their linguistic skills while valuing, not stigmatizing, linguistic and cultural differences. However, focusing only on plurilingual aspects of learning an imperial language does not address land seizure or indigenocide. If plurilingual pedagogies want to challenge imperialism, they need to include *both* Indigenous and diasporic voices and address the issue of land seizure (Tuck & Yang, 2012). While an all-Indigenous voiced *Parlure Games* addresses the former, it does not address the latter.

Based on the findings of this dissertation, ongoing reflections, and preliminary research, several directions for future inquiry and practice emerge, which are briefly described in the following section. First, further investigation is needed to understand the role that imperial L2

education plays in perpetuating *land desensitization* among non-Indigenous people: a process by which individuals become disconnected from the cultural, historical, and ecological significance of the land they inhabit. Second, this issue points to the need for a methodology that enables imperial L2 teaching and learning experiences to connect to the land(s) where they occur, an ecolinguistic process that I describe as *Landguaging*. Finally, future research should explore the development and implementation of plurilingual, land-sensitizing (i.e., *Landguaging*) pedagogies that move L2 education in a post-humanist and decolonial direction, addressing both the monolingual and land desensitizing limitations inherent in imperial L2 learning, and facilitating a reparative relationship between allochthonous people and the land.

Future Directions

Limitations of Imperial Language Learning: Land Desensitization

> Tout comme les héliotropes sont des plantes qui se tournent naturellement vers le soleil, les francotropes sont des allophones portés par l'histoire ou par des affinités linguistiques à utiliser le français plutôt que l'anglais. Nous les connaissons bien. Ce sont grosso modo les personnes de langue maternelle latine, indochinoise, arabe ou créole. [Just as heliotropes are plants that naturally turn towards the sun, francotropes are allophones whose history or linguistic affinity leads them to use French rather than English. We know them well. Roughly speaking, they are people whose mother tongue belong to the Romance, Indochinese, Arabic or Creole languages.] (Castonguay, 2008)

As detailed in Chapter 1, all waves of colonization entail extractive and invasive actions towards land for the purpose of monetary gain. Land desensitization is, in fact, crucial to settler colonial success because it enables colonizers to "turn land into money" or "real estate", which can be subject to "foreclosure" and "dispossess[ion]", allowing them to annex territory and build

colonies (Veracini, 2022, p.76-77). Imperial expansionism involves the erasure of tribal lines and the creation and enforcement of colonial borders. Over time, members of a colonial settlement may become desensitized to how a territory's ecosystem operates (e.g., its plant and hydrologic cycles or its animal migration paths), furthering land desensitization, and resulting in empires speciously claiming that people on colonized territories have an "affinity" for their colonizer, as Castonguay (2008) suggests in the above quote. For this reason, Dasgupta (1993) states that:

> English is not a space. It is a piece of real estate. Its owners – whose biological identities keep changing, as in the case of any real estate, – enforce normative spelling, punctuation, grammar, and phonological and lexical limits (within which accents and dictions may vary) throughout the domains of English discourse. (p. 203).

In linguistics, the link between words (signifier) and the thing or event it represents (signified) is generally considered arbitrary, a notion that Stringer (2024) argues, contributes to the disconnection between language and land. Moreover, land is either absent from or uncritically discussed in the L2 curriculum (Katunich & Goulah, 2020) or is reduced to a source of diatopic variation – differences in accent (verbal or signed) and grammar (lexis, syntax) that are analyzed by region or country and encapsulated as distinct dialects or languages (Wardhaugh & Filler, 2015).

Since the 1970s, ecolinguistics has provided an avenue to reinterpret the relationship between human language and land, described as environmental attunement: "attuned to the social and natural conditions of a given environment" (Steffensen, 2024, p. 12). As detailed in Chapter 1, ecolinguistics in the L2 classroom has long considered Indigenous perspectives in its theories (van Lier, 2004), particularly the notion of "place-language co-evolution" (Steffensen & Bagg, 2024, p. 68). When land is viewed as the original interlocutor, as explained next, it becomes

difficult to neglect land from the L2 curriculum or accept language as an assemblage of purely arbitrary referents, which pushes applied linguistics in a decolonizing and post-humanist direction.

Land as the Original Interlocutor

Land operates in a time of its own (beyond human experience) and communicates itself through billion-year-old cycles, which are uniquely interpreted by each Indigenous nation across the globe according to their geographic vantage point (Deloria & Wildcat, 2001). “[L]anguage was given to us by the land we live in…and it was the land that changed the language because there is special knowledge in each different place…the land constantly speaks. It is constantly communicating” (Armstrong, 2017, p. 142). Learning English after the age of 12, Armstrong describes how her mother tongue, N’Silxchn (an Okanagan language originating in what is now called British Columbia), is endemic to and derived directly from the land itself, which is not just a physical space that people live upon but is the original interlocutor.

Indigenous languages are encoded with ecological knowledge that is “culture-specific, ecosystem-dependent, and able to provide unique insights into the behavior, ecological roles, utilitarian value, and cultural significance of animals and plants”, often referred to as Traditional Ecological Knowledge (Stringer, 2024, p. 365). For example, the names of months encode ecological information related to animal and plant harvesting activities, like April, known as Maple Sugar Moon [iskigamizige-giizis] in Anishinaabemowin (Ojibwe), Geese Laying Eggs Moon [maǧá okáda wí] in Dakȟótiyapi (Dakota), and Duck Hunting Moon [guwoni] in Tsalagi Gawonihisdi (Cherokee; Stringer, 2024). Place-based interpretations traverse time and “hold identity…distinguish[ing] Indigenous peoples from one another" (Kovach, 2021, p. 74). The presence of allochthonous peoples interrupts Indigenous peoples’ relationship with their

territories, and imperial languages in particular "kill" linguistic biodiversity (Skutnabb-Kangas, 2003).

Landguaging: Environmental Attunement as Land Sensitization

Embarking on a methodology that sensitizes non-Indigenous people to the territory they are settled upon requires ideological shifting that may prove difficult. As Skutnabb-Kangas (2003) stated, "[m]ost non-Indigenous people need a lot of guidance to even start understanding the primacy of land" in language education (p. 32). In Canada, Indigenous scholars have long urged settler education programs to self-reflect on their relationship to the colonial process, including the lands they are situated upon, urging them to shift their views of land as dirt or real estate into one where they are in relationship with it, tending to it to support future generations (Battiste, 2013). Within L2 teacher reflection research, these kinds of critical, ideological self-reflections are called "beyond practice" activities. They involve being open to uncertainty regarding practitioners' beliefs and practices, remaining curious about others' experiences, and externalizing thoughts with colleagues. Beyond practice is one of five interconnected reflection activities (i.e., "philosophy", "principles", "theory", "practice") that promote professional development (Farrell, 2015).

Landguaging follows "beyond practice" by grounding reflection in the land(s) where one's past language teaching and learning experiences occurred, being curious about others' experiences, and externalizing thoughts with colleagues to promote their professional development towards land-based learning (Chung & Cardoso, 2022). As such, *Landguaging* views language as:

[F]lowing from and in relationship with the land, producing autochthonous (indigenous), allochthonous [non-indigenous] or parautochthonous (both indigenous and non-indigenous)

relationships […] *Landguaging* encourages practitioners to form relationships with the land and notice how land influences linguistic experiences [and should occur] ideologically, before the outset of curriculum design (Chung & Chung Arsenault, 2023, p. 33).

Ecolinguistic pedagogies (or ecopedagogies) involve direct perception of and communication with land (i.e., environmental attunement), which serves to "green" applied linguistics (Steffensen, 2024, p. 30). They expand the four attunement skills (listening, reading, speaking, writing), further broadening learners' already multimodal communicative repertoire (aural, visual, semiotic; Wei & García, 2022). By supporting L2 instructors in connecting their language teaching and learning practices to the territory upon which they occur, practitioners can self-locate themselves in the colonial process, clarifying their positionality toward the imperial languages they teach – a process driven by subjectivity, not universalities (Kovach, 2021). Promoting environmental attunement may also enable L2 teachers to cultivate their "citizenship", a notion that instructors self-reported having difficulty implementing in their curriculum (Borg & Edmett, 2019). *Landguaging*, therefore, attempts to address the land insensitivity inherent in imperial L2 learning by using plurilingual, pluricultural, and multi-modal activities that are land-centred.

Landguaging the Imperial L2 Classroom

Developing and implementing *Landguaging* pedagogies seeks to counter the monolingual and land-insensitive orientations that characterize the teaching of imperial languages in settler colonial contexts. This final section, therefore, details four activities designed to address specific critiques and limitations of this dissertation, while supporting French and English L2 teachers in Canada in building reparative relationships with the land on which they are settled. As noted in

Chapter 3, the first principle of ecological pedagogies is to develop relationships, in this case, we focus on relationships with land.

Territorial Acknowledgements. As described in Chapter 1, exonyms (allochthonous toponyms) are a common reterritorialization strategy used to annex territory during imperial expansionism (Woodman, 2007). Classroom activities that engage learners in identifying and learning autochthonous toponyms through territorial acknowledgements can therefore help pluralize the French and English L2 curriculum, sensitizing learners to the land and to local politics. Territorial acknowledgements are statements of legal fact (Franks, 2025), affirming constitutionally recognized "Indigenous lands, treaties, and peoples'" sovereignty (Wilkes et al., 2017, p. 91). When these acknowledgements are issued by non-Indigenous peoples or institutions (e.g., universities), they can be demonstrations of "support for reconciliation or as expressions of anticolonial solidarity" (Asher et al., 2018, p. 317), promoting decolonial agendas in education. However, in Québec, local universities were reported to be among the last in Canada to provide land acknowledgements. Wilkes and colleagues (2017) explain that the province is a site of "double colonization from Québec as well as Canada" and the reluctance to make such acknowledgements "conflict with narratives about Québec as a distinct society" (p. 114), underscoring potential implementation difficulties for L2 teachers. Territorial acknowledgements are also criticized as performative when they lack "solidarity praxis" (i.e., concrete action) or when allochthonous speakers do not self-locate themselves (i.e., "individual positionalities") in the colonial process (Asher et al., 2018, p. 330), an activity we explore next.

Multimodal Autobiographical Landguaging Portrait. The Multimodal Autobiographical Landguaging Portrait (MALP) is an L2 teacher reflection tool designed for imperial language instructors to locate their language teaching and learning experiences to the

territories where they occurred, addressing land insensitivity issues (Chung & Chung Arsenault, 2023). Developed over several cycles (Chung & Cardoso, in press; Chung & Chung Arsenault, 2023; Chung & dela Cruz, 2024), imperial L2 instructors are asked to reflect on their language learning experiences (i.e., elementary, high school, CEGEP/ college, university), identify the land(s) this education occurred on, and explain and discuss with their colleagues whether their language experiences included those indigenous to these lands or someone else's (see Appendix A of Chung & dela Cruz, 2024 for full question list). In previous studies, although MALP users expressed a desire to incorporate Indigenist perspectives into their imperial curriculum, only those instructors with knowledge of or experience with Indigenous languages and cultures were able to personally articulate how imperialism had affected them and their families, self-locating themselves in the colonial process (Chung & Cardoso, in press). The MALP thus promotes decolonial agendas by responding to limitations voiced by the teacher candidates discussed in Manuscript B (Chapter 3), who expressed a need for greater support in learning about imperial histories. For imperial L2 instructors, self-reflection is necessary for repairing relationships with the communities that imperialism continues to marginalize (Charity Hudley, et al. 2020; Flores & Rosa, 2015) and it holds the potential to unsettle imperial worldviews (Tuck & Yang, 2012), including those embedded in curriculum design (Kouri, 2020).

Mapping. Online mapping tools such as *Parlure Games*, conceptualized and explored in Manuscript B (Chapter 3), facilitate critical questioning of imperial borders across time and geography. However, as discussed, one limitation is that maps can normalize imperial expansionism as normal or inevitable. Another limitation is that Western maps do not typically inform users about how ecosystems operate within a territory (e.g., plant cycles, animal migration paths). Lucchesi (2018) provides several examples of how Indigenous mapping

methodologies can contest imperial erasure. These include ancestral maps, which transmit ancestral knowledge of ceremonies and landscapes (e.g., petroglyph maps for food sources), or decolonial maps, which reclaim and revitalize ancestral knowledges that were endangered by colonization (e.g., oceanic Indigenous navigation tools focused on spatiality).

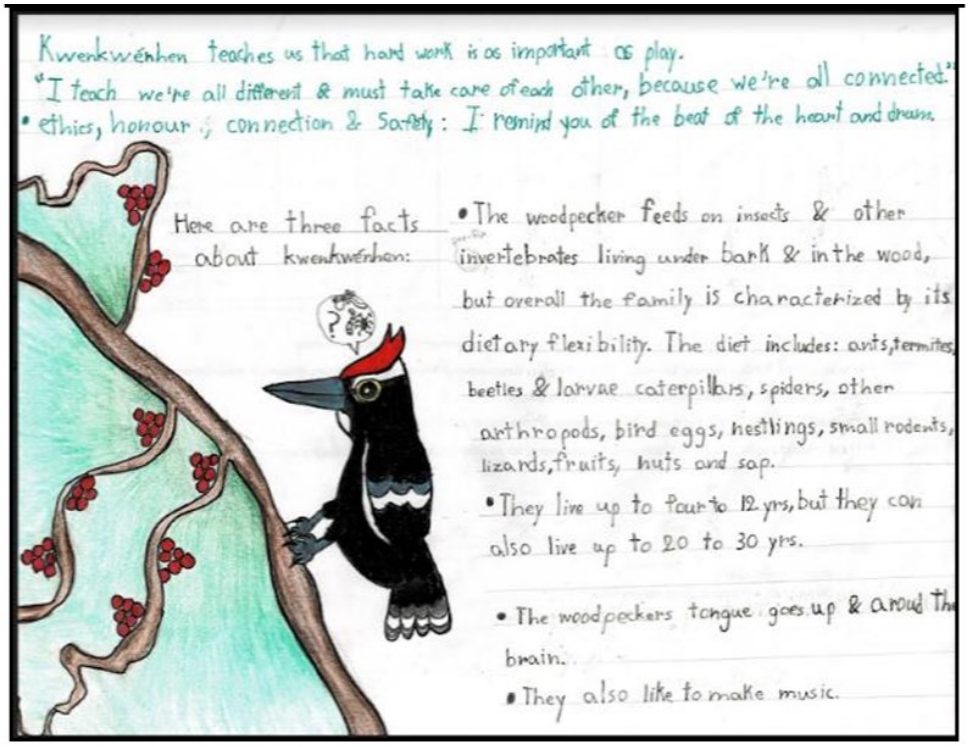
Multilingual Field Guide. Field guides are defined as "geographically restricted or taxonomically constrained […] descriptions of regional natural communities (e.g., flora and fauna) […] with illustrations, clear taxonomic organization, and prose accessible to the lay public […] including tips for accurately observing them, their evolutionary relationships, and keys with which to identify them" (Farnsworth et al., 2013, p. 891). As detailed in Chung and Chung Arsenault (2023), this land-centered multilingual activity focuses on flora and fauna observable in L2 learners' immediate ecosystem, further addressing the limitations of Manuscript B (Chapter 3) to inform users how an ecosystem operates. Using Web 2.0 tools (e.g., iNaturalist app, online dictionaries), learners develop multimodal (e.g., tactile and visual observation, art-based depictions) and plurilingual competencies by exploring species' names and their pronunciations in multiple languages (e.g., Latin, English, French, and Kanien'kehá), engaging with reading materials in either their L1 or target language, and reporting their findings in the target language (see Figure 11 for example of a multilingual field guide entry).

A completed guide sensitizes learners to the biodiversity of their surrounding ecosystem using multiple languages and involves learning how to identify and care for autochthonous and allochthonous elements, a goal of sustainable imperial L2 learning (Katunich & Goulah, 2020). As can be seen, these activities all recognize "the agency of non-human entities for their own characteristics" by focusing on the "consciousness of the landscapes, images, languages, themes,

metaphors and stories of the Indigenous world" (Smith, 2021, p. 206, 167), thereby opening spaces for "pluralities, multiplicities, and diversities" (Battiste, 2013, p. 107).

Figure 11

Multilingual field guide (Chung & Chung Arsenault, 2023, p. 51)



These four *Landguaging* activities involve classroom-based tasks that build plurilingual/pluricultural competencies that are land-centered. These ecolinguistic student-centered activities address the teacher-centric focus of the studies in this dissertation. They also sensitize non-Indigenous people to the land they are settled upon, sharpening their environmental attunement (see also the plurilingual *Landguaging* template in Chung & dela Cruz, 2024). Ongoing ecolinguistic research, however, should heed Mühlhäusler's (2020) warning and not over-intellectualize the field, but rather build concrete, communicative relationships with land that include "practical experience in agriculture, animal husbandry, writing environmental impact statements, language revival, ecotourism, economics" (p. 6), sustaining its health for future generations. As a land-centered (inclusive of Indigenous epistemologies) and plurilingual pedagogy (inclusive of allochthonous peoples), *Landguaging* attempts to address the indigenocidal and assimilative triad that L2 settler colonial education is principled upon. This makes *Landguaging* part of a larger movement in critical land-based education research focused on repairing the socioecological damage of imperialism through localized community efforts (Calderon, 2014), supporting Indigenist agendas and decolonizing movements in L2 education.

Concluding Remarks

In conclusion, the goal of this dissertation was to critically examine how sociophonetic variation is treated in the L2 teaching of imperial languages within the settler colonial context of Canada. In Manuscript A (Chapter 2), I used a comparative case study to explore audiovisual material used in intermediate-level L2 classrooms, the proficiency level where sociophonetic variation is generally introduced to learners (Ender, 2022; Flege & Bohn, 2021). After interviewing teachers to better understand the nature of their audiovisual curriculum, I inventoried the type and duration of five social speech markers (age, gender, race, region, native

speaker status) that comprised the audiovisual materials of their classrooms. Although instructors reported positive feelings towards including social speech marker variation, and were themselves plurilingual, their materials were invariable across most markers.

In response to this invariability, Manuscript B (Chapter 3) followed Cardoso's (2022) chronological framework for CALL research and documented the development of *Parlure Games*. This CALL tool incorporates HVPT characteristics, known to support robust language learning, and ecological principles, deemed sociocognitively advantageous for learning, to support L2 teachers in achieving three pedagogical goals: (i) exposing learners of an imperial language to sociophonetic variation; (ii) developing their plurilingual competencies; and (iii) enabling them to critically discuss imperial expansionism. Based on feedback from the TAM-2 survey and follow-up interviews, imperial L2 instructors rated the tool highly across three teaching goals, indicating strong potential for classroom adoption.

In response to the limitations of this research, this concluding chapter outlined how plurilingual pedagogies that are land-centric can further support imperial L2 instructors and their students in critically reflecting on and making connections to their language learning/teaching experiences and the territory upon which they occur (i.e., via *Landguaging*). When such plurilingual and ecolinguistic pedagogies are used for imperial languages in settler colonial contexts (i.e., the implantation of allochthonous people and structures, the dispossession of Indigenous lands and erasure of Indigenous peoples, and the gatekeeping of allochthonous settlers), they become decolonial, resisting colonization's assimilative and land-insensitizing structures. Listening to many voices repairs human relations, but listening to land repairs socioecological relationships, orienting applied linguistics in a liberatory direction.

References

Abercrombie, D. (1967). *Elements of general phonetics*. Aldine.

Alghabban, S., Khattab, G., & Al-Tamimi, J. (2024, March). The next step for HVPT training: a case for using L1 and L2 varieties. In BAAP (The British Association of Academic Phoneticians). https://hal.science/hal-04958747v1

Anya, U. (2021). Critical race pedagogy for more effective and inclusive world language teaching. *Applied Linguistics, 42*(6), 1055-1069.

Armstrong, J. (2017). Land speaking. In S. McCall, D., Gaertner, D. Reder, & G. Hill (Eds.), *Read, listen, tell: Indigenous stories from Turtle Island* (pp. 141-155). Wilfrid Laurier University Press.

Asher, L., Curnow, J., & Davis, A. (2018). The limits of settlers' territorial acknowledgements. *Curriculum Inquiry, 48*(3), 316-334.

Bahrani, T., & Sim, T. S. (2011). The role of audiovisual mass media news in language learning. *English Language Teaching, 4*(2), 260-266.

Bailyn, J. F. (2010). To what degree are Croatian and Serbian the same language? Evidence from a translation study. *Journal of Slavic Linguistics*, *18*(2), 181-219.

Bakali, N. (2022). White supremacist mythologies in Canadian educational curricula. *Islamophobia Studies Journal, 7*(2), 201-214.

Baker-Bell, A. (2020). Dismantling anti-black linguistic racism in English language arts classrooms: Toward an anti-racist black language pedagogy. *Theory Into Practice, 59*(1), 8-21. https://doi.org/10.1080/00405841.2019.1665415

Baker, W., & Smith, L. C. (2010). The impact of L2 dialect on learning French vowels: Native English speakers learning Québecois and European French. *Canadian Modern Language Review, 66*(5), 711-738.

Bale, J., & Lackner, L. (2022). Centering multilingual learners and countering racism in teacher education: A comparative analysis of research in Austria, Germany and Canada. In *The Palgrave handbook of teacher education research* (pp. 1156-1182). Springer International Publishing.

Bangou, F. (2022). Rhizo-creation of second-language teachers' capacity for technological integration. *Canadian Journal of Learning and Technology, 48*(3), 1-22.

Barriuso, T., & Hayes-Harb, R. (2018). High variability phonetic training as a bridge from research to practice. *CATESOL Journal, 30*(1), 177-194.

Battiste, M. (2013). *Decolonizing education: Nourishing the learning spirit*. UBC Press.

Bazinet, T. (2023). Tracing understanding of sovereignty and settler-colonial violence in the Québec's Viens Commission (2016–2019). *Settler Colonial Studies, 13*(2), 174-193.

Bedecarré, S. (2022). Unlearning Francophonie: Legacies of colonialism in French grammar. In S. Bouamer & L. Bourdeau (Eds.) *Diversity and decolonization in French studies: New approaches to teaching* (pp. 33-50). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-95357-7_3

Best, C. T. (1995). A direct realist view of cross-language speech perception. In W. Strange (Ed.) *Speech perception and linguistic experience: Issues in cross-language research* (pp. 171-204) York Press.

Best, C. T. & Tyler, M. (2007). Nonnative and second-language speech perception: Commonalities and complementarities. In Bohn, O.-S., & Munro, M. J. (Eds.). *Language*

experience in second language speech learning: In honor of James Emil Flege (pp. 13-34). J. Benjamins Publishing Company. https://doi.org/10.1075/lllt.17.07bes

Bhattacharya, K. (2021). De/colonizing educational research. In *Oxford Research Encyclopedia of Education*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190264093.013.1386

Blin, F. (2016). Towards an 'ecological' CALL theory: Theoretical perspectives and their instantiation in CALL research and practice. In *The Routledge handbook of language learning and technology* (pp. 39-54). Routledge.

Blin, F., Jalkanen, J., & Taalas, P. (2016). Sustainable CALL development. In *The Routledge handbook of language learning and technology* (pp. 223-238). Routledge.

Borg, S. (2018). Language teacher cognition: Perspectives and debates. *Second handbook of English language teaching*, 1149-1170.

Borg, S., & Edmett, A. (2019). Developing a self-assessment tool for English language teachers. *Language Teaching Research*, *23*(5), 655-679.

Boyd-Barrett, O., & Mirrlees, T. (2020). Introduction: Media Imperialism: Continuity and Change. In O. Boyd-Barrett & T. Mirrlees (Eds) *Media imperialism: continuity and change* (pp. 1-10). Rowman & Littlefield.

Bradlow, A. R., Akahane-Yamada, R., Pisoni, D. B., & Tohkura, Y. I. (1999). Training Japanese listeners to identify English /r/and/l/: Long-term retention of learning in perception and production. *Attention, Perception, & Psychophysics, 61*(5), 977-985.

Brekelmans, G., Lavan, N., Saito, H., Clayards, M. & Wonnacott, E. (2022). Does high variability training improve the learning of non-native phoneme contrasts over low

variability training? A replication. *Journal of Memory and Language, 126*, 1-24. https://doi.org/10.1016/j.jml.2022.104352

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development*. Sage Publications.

Bybee, J. (2001). *Frequency and the emergence of linguistic structure*. John Benjamins Publishing Company. https://doi.org/10.1075/tsl.45

Calderon, D. (2014). Speaking back to manifest destinies: A land education-based approach to critical curriculum inquiry. *Environmental Education Research, 20*(1), 24-36. https://doi.org/10.1080/13504622.2013.865114

Cardoso, W. (2022). Technology for speaking development. In T. Derwing, M. Munro & R. Thomson (Eds.), *Routledge handbook on second language acquisition and speaking* (pp. 299-313). Routledge. https://doi.org/10.4324/9781003022497-26

Castonguay, C. (2008, April 20). Le français, langue de travail des francotropes. *L'aut'Journal*. https://www.lautjournal.info/20080420/le-francais-langue-de-travail-des-francotropes

Chambers, J. K., & Trudgill, P. (1998). *Dialectology*. Cambridge University Press.

Chapelle, C. A. (2009). The relationship between second language acquisition theory and computer-assisted language learning. *The Modern Language Journal, 93*(s1), 741–753

Chapelle, C. A. (2014). Five decades of Canadian and Québec content in French textbooks in the United States. *American Review of Canadian Studies, 44*(4), 415-432.

Charity Hudley, A. H. (2023). Liberatory linguistics. *Dædalus, 152*(3), 212–226. doi: https://doi.org/10.1162/daed_a_02027

Charity Hudley, A. H, Mallinson, C., & Bucholtz, M. (2020). Toward racial justice in linguistics: Interdisciplinary insights into theorizing race in the discipline and diversifying the profession. *Language*, *96*(4), e200-e235.

Chen, S. (2016). Language and ecology: A content analysis of ecolinguistics as an emerging research field. *Ampersand, 3*, 108-116.

Chung, R. (2019, October 13). Descendant of the "good" immigrants. *Belonging, Identity, Language, Diversity.* https://bild-lida.ca/blog/uncategorized/descendant-of-the-good-immigrants-by-rhonda-chung/

Chung, R. (2022, February 28). Welcome to the Chungle: Reconnection as colonial defiance. *Belonging, Identity, Language, Diversity.* https://bild-lida.ca/blog/uncategorized/welcome-to-the-chungle-reconnection-as-colonial-defiance-by-rhonda-chung/

Chung, R. (2023, January 23). The art of Landguaging across borders: Land-sensitive curriculum for imperial language teachers. *Belonging, Identity, Language, Diversity.* https://bild-lida.ca/blog/uncategorized/the-art-of-landguaging-across-borders-land-sensitive-curriculum-for-imperial-language-teachers-by-rhonda-chung/

Chung, R. & Cardoso, W. (2022). The art of 'Landguaging' in the city: Teacher reflection for inclusive linguistic futures. In T. Bastiaens (Ed.), *Proceedings of EdMedia + Innovate Learning* (pp. 671-676). New York City, NY, United States: Association for the Advancement of Computing in Education (AACE). https://www.learntechlib.org/p/221355.

Chung, R., & Cardoso, W. (2024). *Parlure Game*s: Leaping outta the HVPT lab and into the ecological classroom. *TESL Canada Journal, 41*(1), 79-102. https://doi.org/10.18806/tesl.v41i1/1400

Chung, R., & Cardoso, W. (In press). *Landguaging* imperialism through teacher-reflection art: Land-sensitizing tools for instructors. *Canadian Modern Language Review*.

Chung, R., & Chung Arsenault, W. (2023). 'Landguaging' the L2 classroom: Inclusive pedagogies & land-sensitive curriculum through teacher reflection art. *Concordia University Working Papers in Applied Linguistics, 7*, 29-54.

Chung, R. & dela Cruz, J. (2024). Pedagogies of inclusion must start from within: Landguaging teacher reflection and plurilingualism in the "L2" classroom. In A. Charity Hudley, C. Mallinson, & M. Bucholtz (Eds.), *Inclusion in Linguistics* (pp. 291-311). Oxford University Press.

Clopper, C., & Pisoni, D. (2004a). Homebodies and army brats: Some effects of early linguistic experience and residential history on dialect categorization. *Language Variation and Change, 16*(1), 31-48.

Clopper, C., & Pisoni, D. (2004b). Effects of talker variability on perceptual learning of dialects. *Language and speech, 47*(3), 207-238.

Competency 15 - First Nations Education Council. (2020). https://cepn-fnec.ca/en/wp-content/uploads/2021/10/Competency-15-Final.pdf

Crandall, J. (2023). Videographic, musical, and linguistic partnerships for decolonization: Engaging with place-based articulations of Indigenous identity and Wâhkôhtowin. *Humanities, 12*(4), 72. https://doi.org/10.3390/h12040072

Curzan, A., Queen, R. M., VanEyk, K., & Weissler, R. E. (2023). Language standardization & linguistic subordination. *Dædalus*, *152*(3), 18-35.

Dasgupta, P. (1993) *The otherness of English: India's auntie tongue syndrome*. Sage.

Deloria, V., & Wildcat, D. R. (2001). *Power and place: Indian education in America*. Fulcrum Books.

Derwing, T. M., & Munro, M. J. (2009). Putting accent in its place: Rethinking obstacles to communication. *Language Teaching, 42*(4), 476–490. doi:10.1017/S026144480800551X

Derwing, T. M., Rossiter, M. J., Munro, M. J., & Thomson, R. I. (2004). Second language fluency: Judgments on different tasks. *Language Learning, 54*(4), 655-679.

Dominic, M., Francis, S., & Pilomenraj, A. (2014). E-learning in web 3.0. *International Journal of Modern Education and Computer Science, 6*(2), 8-14. DOI: 10.5815/ijmecs.2014.02.02

Di Gangi, P. (2010). *Impérialisme toponymique au Québec, 1911-1928*. Retrieved April 17, 2025 https://web.archive.org/web/20240120191425/https://www.algonquinnation.ca/toponym/toponymical%20imperialism_french.pdf

Dragojevic, M., Mastro, D., Giles, H., & Sink, A. (2016). Silencing nonstandard speakers: A content analysis of accent portrayals on American primetime television. *Language in society, 45*(1), 59-85.

Duchemin, M. (2017). Les représentations associées aux français nationaux, aux espaces géographiques et aux locuteurs dans les manuels de français langue étrangère et de français langue seconde: Étude comparée entre la France et le Québec. *Canadian Journal of Applied Linguistics, 20*(2), 51–70. https://doi.org/10.7202/1042676ar

Duff, P. (2008). *Case study research in applied linguistics*. Routledge.

Egbert, J. (2005). Conducting research on CALL. In J. L. Egbert & G. M. Petrie (Eds.), *CALL research perspectives* (pp. 3–8). Erlbaum.

Ehrlich, S., & Avery, P. (1992). *Teaching American English pronunciation-Oxford handbooks for language teachers*. Oxford University Press.

Eisenstein, M. R. (1986). Target language variation and second-language acquisition: Learning English in New York City. *World Englishes,5*(1), 31-46..

Ender, A. (2017). What is the target variety? The diverse effects of standard–dialect variation in second language acquisition. In G. De Vogelaer & M. Katerbow (eds) *Acquiring sociolinguistic variation* (pp. 155-184). John Benjamins Publishing Company.

Ender, A. (2022). Pedagogical norms and standards. In *The Routledge Handbook of Second Language Acquisition and Sociolinguistics* (pp. 59-71). Routledge.

Escudero, P., & Boersma, P. (2004). Bridging the gap between L2 speech perception research and phonological theory. *Studies in Second Language Acquisition, 26*(4), 551-585. https://doi.org/10.1017/S0272263104040021

Etienne, C., & Sax, K. (2009). Stylistic variation in French: Bridging the gap between research and textbooks. *The Modern Language Journal*, *93*(4), 584-606.

Evans, B. G., & Iverson, P. (2007). Plasticity in vowel perception and production: A study of accent change in young adults. *The Journal of the Acoustical Society of America*, *121*(6), 3814-3826.

Fairclough, N. (2015). *Language and power*. Routledge.

Farnsworth, E. J., Chu, M., Kress, W. J., Neill, A. K., Best, J. H., Pickering, J., Stevenson, R. D., Courtney, G. W., VanDyk, J. K. & Ellison, A. M. (2013). Next-generation field guides. *BioScience*, *63*(11), 891-899.

Farrell, T. (2015). *Promoting teacher reflection in second language education: A framework for TESOL professionals*. Routledge, Taylor & Francis Group.

Flege, J., & Bohn, O. (2021). The revised speech learning model (SLM-r) applied. In R. Wayland (Ed.) *Second language speech learning theoretical and empirical progress* (pp. 84-118). Cambridge University Press. https://doi.org/10.1017/9781108886901.002

Fleras, A. (2011). *The media gaze: Representations of diversities in Canada*. UBC Press.

Flores, N., & Rosa, J. (2015). Undoing appropriateness: Raciolinguistic ideologies and language diversity in education. *Harvard Educational Review, 85*(2), 149-171.

Foulkes, P., & Docherty, G. (2006). The social life of phonetics and phonology. *Journal of phonetics, 34*(4), 409-438.

Franks, S. (2025, April 16). Land acknowledgments aren't political. They uphold the rule of law in Canada. *The Globe and Mail*. https://www.theglobeandmail.com/opinion/article-land-acknowledgments-arent-political-they-uphold-the-rule-of-law-in/

French, L., & Beaulieu, S. (2020). Can beginner L2 learners handle explicit instruction about language variation? A proof-of-concept study of French negation. *Language Awareness, 29*(3-4), 272-285. https://doi.org/10.1080/09658416.2020.1782417

Galante, A. (2025). Plurilingual and pluricultural competence: Origins, current trends, and future directions. In C. Fäcke, A. Gao & P. Garrett-Rucks (Eds.), *The Handbook of plurilingual and intercultural language learning* (pp. 333-348). John Wiley & Sons.

Galante, A., Chiras, M., dela Cruz, J., & Zeaiter, L. (2022). *Plurilingual guide: Implementing critical plurilingual pedagogy in language education*. Plurilingual Lab Publishing. https://www.mcgill.ca/plurilinguallab/files/plurilinguallab/plurilingual_guide.pdf

Galante, A., & dela Cruz, J. W. N. (2024). Plurilingual and pluricultural as the new normal: an examination of language use and identity in the multilingual city of Montreal. *Journal of Multilingual and Multicultural Development*, *45*(4), 868-883.

Garrett, N. (1991). Technology in the service of language learning: Trends and issues. *The Modern Language Journal, 75*(1), 74-101.

Garrett, N. (2009). Computer-assisted language learning trends and issues revisited: Integrating innovation. *The Modern Language Journal, 93*(s1), 719-740.

Genesee, F. (1987). *Learning through two languages: Studies of immersion and bilingual education*. Newbury House.

Gibson, J. J. (1966). *The senses considered as perceptual systems*. Houghton Mifflin.

Gibson, J. J. (1979). *The ecological approach to visual perception*. Erlbaum.

Government of Canada (2025). Origin of the names of Canada and its provinces and territories. Retrieved April 26, 2025. https://natural-resources.canada.ca/maps-tools-publications/maps/geographical-names-canada/origin-names-canada-its-provinces-territories

Government of Canada (2024). First Nations. Retrieved May 15, 2024. https://www.rcaanc-cirnac.gc.ca/eng/1100100013791/1535470872302

Gouvernement du Québec (2024). The 11 Indigenous nations of Québec. Retrieved August 23, 2025. https://www.quebec.ca/en/government/quebec-at-a-glance/first-nations-and-inuit/profile-of-the-nations/about-nations

Guerrettaz, A., & Johnston, B. (2013). Materials in the classroom ecology. *The Modern Language Journal, 97*(3), 779-796. https://doi.org/10.1111/j.1540-4781.2013.12027.x

Guerrettaz, A. M., Mathieu, C. S., Lee, S., & Berwick, A. (2022). Materials use in language classrooms: A research agenda. *Language Teaching, 55*(4), 547-564. https://doi.org/10.1017/S0261444821000021

Guida, R. (2022). Approaching French cultures in the FSL classroom: The salade niçoise recipe. *OLBI Journal, 12*, 233-262.

Hall, D. (2018). Dialects of French. In C. Boberg. J. Nerbonne, & D. Watt (Eds.), *The handbook of dialectology* (pp. 474-485). John Wiley & Sons.

Hall-Lew, L., Moore, E., & Podesva, R. (2021). Social meaning and linguistic variation: Theoretical foundations. In L. Hall-Lew, E. Moore, & R. Podesva (Eds.). *Social meaning and linguistic variation: Theorizing the third wave* (pp. 1-24). Cambridge University Press. https://doi.org/10.1017/9781108578684.001

Halliday, M.A.K. (1990). New ways of analysing meaning: A challenge to applied linguistics. *Journal of Applied Linguistics, 6*, 7-36 .

Haque, E. (2012). *Multiculturalism within a bilingual framework: Language, race, and belonging in Canada*. University of Toronto Press.

Hardison, D., & Pennington, M. (2021). Multimodal second-language communication: Research findings and pedagogical implications. *RELC Journal, 52*(1), 62-76. https://doi.org/10.1177/0033688220966635

Hauser, M. D., Chomsky, N., & Fitch, W. T. (2002). The faculty of language: what is it, who has it, and how did it evolve? *Science, 298*(5598), 1569-1579.

Herman, E. S., & Chomsky, N. (2002). *Manufacturing consent: The political economy of mass media*. Pantheon Books.

Hormann, B. (1947). Speech, prejudice, and the schools in Hawaii. *Social Process in Hawaii, 11*, 74–80. https://hdl.handle.net/10125/105547

Hubbard, P. (2017). Technologies for teaching and learning L2 listening. In C. Chapelle & S. Sauro (Eds.) *The handbook of technology and second language teaching and learning* (pp. 93-106). Wiley Blackwell. https://doi.org/10.1002/9781118914069.ch7

Hubbard, P. (2019). Five keys from the past to the future of CALL. *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT), 9*(3), 1-13.

Hubbard, P. (2024a). Technologies, tools and tutors. In R. Hampel & U. Stickler (Eds) *The Bloomsbury Handbook of Language Learning and Technology*, pp. 21-34. Bloomsbury.

Hubbard, P. (2024b). Future Directions in English Language Teacher Education in a Changing World. In J. S. Lee, D. Zou, & M. M. Gu (Eds.) *Technology and English Language Teaching in a Changing World: A Practical Guide for Teachers and Teacher Educators* (pp. 189-201). Springer International Publishing.

Hubbard, P., & Colpaert, J. (2019). Toward transdisciplinarity in computer-assisted language learning. *CALICO Journal, 36*(2), 81-99.

Irvine, J., & Gal, S. (2000). Language ideology and linguistic differentiation. In P. Kroskrity (Ed.) *Regimes of language: Ideologies, polities, and identities* (pp. 35-83). School of American Research.

Jordan, P., Adamič, M. O., & Woodman, P. (Eds). (2007). *Exonyms and the international standardisation of geographical names*. Wiener Osteuropa Studien.

Johnson, C., & Cardoso, W. (2024). Hey Google, let's write: Examining L2 learners' acceptance of automatic speech recognition as a writing tool. *CALICO Journal*, *41*(2), 122-145.

Johnson, K., & Sjerps, M. J. (2021). Speaker normalization in speech perception. In J. S. Pardo, L. C. Nygaard, R. E. Remez, D. B. Pisoni, *The handbook of speech perception* (pp. 145-176). John Wiley & Sons, Inc.

Kachru, B. (1985). Standards, codification and sociolinguistic realism: English language in the outer circle. In R. Quirk and H. Widowson (Eds.), *English in the world: Teaching and learning the language and literatures* (p. 11-36). Cambridge: Cambridge University Press.

Kadmon, N. (2007). The exonym and the endonym – Attempting to define the undefinable? In P. Jordan, M. Adamič, P. Woodman (Eds.) *Exonyms and the international standardisation of geographical names* (pp. 61-67). Wiener Osteuropa Studien.

Kang, O., & Rubin, D. L. (2009). Reverse linguistic stereotyping: Measuring the effect of listener expectations on speech evaluation. *Journal of Language and Social Psychology, 28*(4), 441-456.

Katunich, J., & Goulah, J. (2020). Introduction: TESOL and sustainability. In J. Goulah & J. Katunich (Eds) *TESOL and sustainability: English language teaching in the Anthropocene era* (pp. 1-16). Bloomsbury Publishing.

Kerswill, P. (2013). Koineization. In J. K. Chambers and N. Schilling (Eds.) *The handbook of language variation and change* (2nd ed.), pp. 519-536. Wiley-Blackwell.

Kessler, G. (2007). Formal and informal CALL preparation and teacher attitude toward technology. *Computer Assisted Language Learning, 20*(2), 173-188.

Kimmerer, R. W. (2013). *Braiding sweetgrass*. Milkweed Editions.

Kingué, M. (1994). *L'Afrique francophone: pédagogie et méthode*. *French Review, 68*(1) 17-31.

Kircher, R. (2014). Thirty years after Bill 101: A contemporary perspective on attitudes towards English and French in Montreal. *The Canadian Journal of Applied Linguistics, 17*(1), 20–50.

Knisely, K. (2020). Subverting the culturally unreadable: Understanding the self-positioning of non-binary speakers of French. *The French Review, 94*(2), 173-192. https://doi.org/10.1353/tfr.2020.0280

Kouri, S. (2020). Settler education: Acknowledgement, self-location, and settler ethics in teaching and learning. *International Journal of Child, Youth and Family Studies*, *11*(3), 56-79.

Kovach, M. (2021). *Indigenous methodologies: Characteristics, conversations, and contexts*. University of Toronto Press.

Kramsch, C., & Steffensen, S. V. (2008). Ecological perspectives on second language acquisition and socialization. *Encyclopedia of Language and Education*, *8*(1), 17-28.

Kubota, R. (2021). Critical antiracist pedagogy in ELT. *ELT Journal, 75*(3), 237-246.

Kubota, R. (2016). The multi/plural turn, postcolonial theory, and neoliberal multiculturalism: Complicities and implications for Applied Linguistics. *Applied Linguistics, 37*(4), 474–494. https://doi.org/10.1093/applin/amu045

Kuhl, P. (2000). A new view of language acquisition. *Proceedings of the National Academy of Sciences, 97*(22), 11850-11857. https://doi.org/10.1073/pnas.97.22.11850

Kunnas, M. (2023). Who Is Immersion for?: A Critical Analysis of French Immersion Policies. *Canadian Journal of Applied Linguistics*, *26*(1), 46-68.

Kutlu, E. (2023). Now you see me, now you mishear me: Raciolinguistic accounts of speech perception in different English varieties. *Journal of Multilingual and Multicultural Development*, *44*(6), 511-525.

Kuo, I. C. (2006). Addressing the issue of teaching English as a lingua franca. *ELT journal, 60*(3), 213-221.

Labov, W. (2006). A sociolinguistic perspective on sociophonetic research. *Journal of phonetics*, *34*(4), 500-515.

Lafford, B. A. (2009). Toward an ecological CALL: Update to Garrett (1991). *The Modern Language Journal, 93*(s1), 673-696.

Lafford, B. A. (2019). Revisiting the Normalization of CALL: A Critical Pedagogical Approach. *Céfiro: A Journal of the Céfiro Graduate Student Organization,* 15, 134–164.

Lam, H., & O'Brien, M. G. (2014). Perceptual dialectology in second language learners of German. *System, 46*, 151-162.

Laporte, P-E. (1993). *La planification stratégique ou l'agenda du CFL les prochaines années. Bulletins du Conseil de la langue française,* 10, pp. 1-3.

Larman, C., & Basili, V. (2003). Iterative and incremental development: A brief history. *Computer, 36*(6), 47-56. https://doi.org/10.1109/MC.2003.1204375

Larsen-Freeman, D. & Cameron, L. (2008). *Complex systems and applied linguistics*. Oxford University Press.

Larsen-Freeman, D. (2020). Complex dynamics systems theory. In B. VanPatten, G. Keating, & S. Wulff (Eds.) *Theories in second language acquisition: An introduction* (pp. 248-270). Routledge.

Lau, S. (2022). Critical ESL education in Canada. In P. Price (Ed.) *The Oxford encyclopedia of race and education*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190264093.013.1763

Laver, J. & Trudgill, P. (1979). Phonetic and linguistic markers in speech. In K. Scherer & H. Giles (Eds.) *Social markers in speech* (pp. 1-31). Cambridge University Press.

Levis, J. (2020). Changes in L2 pronunciation: 25 years of intelligibility, comprehensibility, and accentedness. *Journal of Second Language Pronunciation*, *6*(3), 277-282.

Levis, J. (2021). L2 pronunciation research and teaching: The importance of many languages. *Journal of Second Language Pronunciation, 7*(2), 141-153.

Levis, J. M., & Silpachai, A. O. (2022). Speech intelligibility. In *The Routledge handbook of second language acquisition and speaking* (pp. 160-173). Routledge.

Lippi-Green, R. (2012). *English with an accent: Language, ideology and discrimination in the United States* (2nd ed). Taylor & Francis. https://doi.org/10.4324/9780203348802

Lively, S. E., Logan, J. S., & Pisoni, D. B. (1993). Training Japanese listeners to identify English /r/and/l/. II: The role of phonetic environment and talker variability in learning new perceptual categories. T*he Journal of the Acoustical Society of America, 94*(3), 1242-1255.

Lively, S. E., Pisoni, D. B., Yamada, R. A., Tohkura, Y. I., & Yamada, T. (1994). Training Japanese listeners to identify English /r/and/l/. III: Long-term retention of new phonetic categories. *The Journal of the Acoustical Society of America, 96*(4), 2076-2087.

Logan, J. S., Lively, S. E., & Pisoni, D. B. (1991). Training Japanese listeners to identify English /r/and/l/: A first report. *The Journal of the Acoustical Society of America, 89*(2), 874-886.

Longpré, T. (2025). Défis et perspectives de la *francisation* des adultes au Québec. *Recherches sociographiques, 66*(1), 171-184.

Lucchesi, A. H. E. (2018). “Indians don't make maps”: Indigenous cartographic traditions and innovations. *American Indian Culture and Research Journal*, *42*(3), 11-26.

Mace, W. (1977). James J. Gibson's strategy for perceiving: Ask not what's inside your head, but what's your head inside of. In R. Shaw & J. Bransford (Eds.) *Perceiving, acting, and knowing: Towards an ecological psychology* (pp. 43-65). Erlbaum.

Macedo, D. (2019). Rupturing the yoke of colonialism in foreign language education: An introduction. In D. Macedo (Ed.) *Decolonizing foreign language education* (pp. 1-49). Routledge.

Mahtani, M. (2009). Teaching diverse students: Teaching for inclusion. In M. Solem, K. Foote, & J. Monk (Eds.) *Aspiring academics: A resource book for graduate students and early career faculty* (pp. 121-133). Pearson Prentice Hall.

Major, R. C. (2001). *Foreign accent: The ontogeny and phylogeny of second language phonology*. Erlbaum.

Major, R. C., Fitzmaurice, S. M., Bunta, F., & Balasubramanian, C. (2005). Testing the effects of regional, ethnic, and international dialects of English on listening comprehension. *Language Learning, 55*(1), 37-69.

Mariotti, C. (2014) A survey on stakeholders’ perceptions of subtitles as a means to promote foreign language learning. In Y. Gambier, A. Caimi, & C. Mariotti (Eds.), *Subtitles and language learning: Principles, strategies and practical experiences* (pp. 83–103). Peter Lang.

Ministère de l'Immigration, de la *Francisation* et de l'Intégration. (2019*). Programme d'intégration linguistique pour les immigrants*. http://www.education.gouv.qc.ca/adultes/formation-generale-des-adultes/*francisation*/

Ministère de l'Éducation, du Loisirs et du Sport (MELS). (2015). *Programme d'études Francisation*. http://www.education.gouv.qc.ca/fileadmin/site_web/documents/dpse/educ_adulte_action_comm/Adultes_FGA_progetudes_domainelangue_*francisation*_2015.pdf

MEES. (2015). Programme d'études, *francisation*: Domaine des langues - formation générale des adultes. Retrieved from https://cdn-contenu.Québec.ca/cdn-contenu/education/formation-generale-adultes/programmes/FGA-*francisation*-programme-etudes.pdf

Motha, S. (2014). *Race, empire, and English language teaching: Creating responsible and ethical anti-racist practice*. Teachers College Press.

Mühlhäusler, P. (2020). Quo vadis ecolinguistics. *Ecolinguística: Revista Brasileira de Ecologia e Linguagem, 6*(1), 5-23.

Muñoz, C. (2022). Audiovisual input in L2 learning. *Language, Interaction and Acquisition, 13*(1), 125-143.

Muñoz, C., & Miralpeix, I. (Eds.). (2024). *Audiovisual input and second language learning*. John Benjamins Publishing Company.

Naess, A. (2017). The shallow and the deep, long-range ecology movement: A summary. *In The ethics of the environment* (pp. 115-120). Routledge.

Nelson, C. A. (2016). *Slavery, geography and empire in nineteenth-century marine landscapes of Montreal and Jamaica*. Routledge.

Nettle, D. (1996). Language diversity in West Africa: An ecological approach. *Journal of Anthropological Archaeology, 15*(4), 403-438.

Nishi, K., & Kewley-Port, D. (2007a). Training Japanese listeners to perceive American English vowels: Influence of training sets. *Journal of Speech, Language, and Hearing Research*, *50*(6), 1496–1509. 10.1044/1092-4388(2007/103)

Nishi, K., and Kewley-Port, D. (2007b). Second language vowel production training: effects of set size, training order and native language. In J. Trouvain & W. John (Eds), *Proceedings of the 16th International Congress of Phonetic Sciences ICPhS XVI* (pp. 1621-1624). Saarbrücken, Germany.

Nishi, K., & Kewley-Port, D. (2008). Nonnative speech perception training using vowel subsets: Effects of vowels in sets and order of training. *Journal of Speech, Language, and Hearing Research*, *51*(6), 1480-1493.

Nycz, J. (2015). Second dialect acquisition: A sociophonetic perspective. *Language and Linguistics Compass*, *9*(11), 469-482.

Nycz, J. (2019). Media and second dialect acquisition. *Annual Review of Applied Linguistics*, *39*, 152-160.

Oakes, L., & Peled, Y. (2018). *Normative language policy: Ethics, politics, principles*. Cambridge University Press.

O'Brien, M., & Smith, L. (2010). Role of first language dialect in the production of second language German vowels. *International Review of Applied Linguistics in Language Teaching, 48*(4), 297-330. https://doi.org/10.1515/iral.2010.013

Offord, M. (1996) *French sociolinguistics*. Multilingual Matters Ltd.

Oostendorp, M. (2022). Raced repertoires: The linguistic repertoire as multi-semiotic and racialized. *Applied Linguistics, 43*(1), 65–87. https://doi.org/10.1093/applin/amab018

Ortega, L. (2019). SLA and Study of Equitable Multilingualism. *The Modern Language Journal, 103*(1), 23-38.

Ortega, L. (2017). New CALL-SLA research interfaces for the 21st century: Towards equitable multilingualism. *CALICO Journal, 34*(3), 283-316.

Pattemore, A., & Muñoz, C. (2024). Perceptions of learning from audiovisual input and changes in L2 viewing preferences: The roles of on-screen text and proficiency. *ReCALL, 36*(2), 135-151.

Pennycook, A. (2018). Posthumanist applied linguistics. *Applied Linguistics, 39*(4), 445-461.

Pennycook, A. (2022). Critical applied linguistics in the 2020s. *Critical Inquiry in Language Studies*, *19*(1), 1-21.

Pennycook, A. (2025). After words: There is no language without materiality. *Signs and Society*, *12*(1), 109-123.

Pennycook, A., & Otsuji, E. (2019). Mundane metrolingualism. *International Journal of Multilingualism*, *16*(2), 175-186.

Perez, M. M. (2022). Second or foreign language learning through watching audio-visual input and the role of on-screen text. *Language Teaching*, *55*(2), 163-192.

Phillipson, R. (1992). *Linguistic imperialism*. Oxford University Press.

Phillipson, R. (2009). *Linguistic imperialism continued*. Orient Blackswan.

Pierrehumbert, J. B. (2016). Phonological representation: Beyond abstract versus episodic. *Annual Review of Linguistics, 2*(1), 33-52.

Pierrehumbert, J. B. (2006). The next toolkit. *Journal of Phonetics, 34*(4), 516-530.

Piller, I., & Bodis, A. (2024). Marking and unmarking the (non) native speaker through English language proficiency requirements for university admission. *Language in Society*, *53*(1), 1-23.

Pisoni, D. B., Lively, S. E., & Logan, J. S. (1994). Perceptual learning of nonnative speech contrasts: Implications for theories of speech perception. In J. C. Goodman & H. C. Nusbaum (Eds.), *The development of speech perception: The transition from speech sounds to spoken words* (pp. 121–166). The MIT Press.

Pitts, M., & Gallois, C. (2019). Social markers in language and speech. *Oxford Research Encyclopedia of Psychology*. https://doi.org/10.1093/acrefore/9780190236557.013.300

Qasserras, L. (2023). Systematic review of communicative language teaching (CLT) in language education: A balanced perspective. *European Journal of Education and Pedagogy*, *4*(6), 17-23.

Québec Education Program. (2021). Reference framework for professional competencies - For teachers. https://cdn-contenu.Québec.ca/cdn-contenu/adm/min/education/publications-adm/devenir-enseignant/reference_framework_professional_competencies_teacher.pdf?1611584651

Québec Education Program. (2001). Québec Education Program: Preschool Education, Elementary Education. https://cdn-contenu.Québec.ca/cdn-contenu/education/pfeq/Programme-prescolaire-primaire-AN.pdf

Quijano, M. G. (2020). Mass media and the development of reading and listening skills of second language learners. *Journal of Critical Review, 7*(15), 1163-1173.

Ramírez, C. K., Lafford, B. A., & Wermers, J. E. (2021). *Online world language instruction training and assessment: An ecological approach*. Georgetown University Press.

Rauschecker, J. P. (2018). Where did language come from? Precursor mechanisms in nonhuman primates. *Current opinion in behavioral sciences, 21,* 195-204.

Raviv, L., Lupyan, G., & Green, S. C. (2022). How variability shapes learning and generalization. *Trends in Cognitive Sciences, 26*(6), 462-483.

Reid, J. (2010). The doctrine of discovery and Canadian law. *The Canadian Journal of Native Studies*, *30*(2), 335-359.

Reinhardt, J. (2019). Social media in second and foreign language teaching and learning: Blogs, wikis, and social networking. *Language Teaching, 52*(1), 1-39.

Remysen, W. (2018). L'insécurité linguistique à l'école : un sujet d'étude et un champ d'intervention pour les sociolinguistes. In N. Vincent &S. Piron (Eds). *La linguistique et le dictionnaire au service de l'enseignement du français au Québec* (pp. 25-59). Nota Bene.

Riches, C., & Parks, P. (2021). Navigating linguistic identities: ESL teaching contexts in Québec. *TESL Canada Journal, 38*(1), 28-48.

Riverin-Coutlée, J., & Roy, J. P. (2022). A descriptive account of the Québec French diphthong fête. *Journal of the International Phonetic Association, 52*(2), 228-245.

Rosa, J., & Flores, N. (2023). Rethinking language barriers & social justice from a raciolinguistic perspective. *Daedalus, 152*(3), 99-114.

Roy, O. (2012). The colour of gayness: Representations of queers of colour in Québec's gay media. *Sexualities, 15*(2), 175-190.

Sacred Land Film Project. (2015, May 7). *Vine Deloria Jr. - "Time of its Own" - Clashing Worldviews at Devils Tower* [Video]. YouTube. https://www.youtube.com/watch?v=syfLkkAQfBg&t

Saldaña, J. (2021). *The coding manual for qualitative researchers* (4th ed.). SAGE

Salien, J. M. (1998). Quebec French: Attitudes and pedagogical perspectives. *The Modern Language Journal, 82*(1), 95-102.

Saraceni, M. (2010). *The relocation of English: Shifting paradigms in a global era*. Palgrave Macmillan.

Schoonmaker-Gates, E. (2017). Regional variation in the language classroom and beyond: Mapping learners' developing dialectal competence. *Foreign Language Annals, 50*(1), 177-194.

Schoonmaker-Gates, E. (2023). Dialect-specificity and learners' L2 perceptual resilience after study abroad. *Journal of Second Language Pronunciation, 9*(3), 362-383.

Seeger, I. (2019). Addressing 'Super-Diversity' in the language classroom through multilingual films and peer-generated YouTube content. In C. Herrero & I. Vanderschelden (Eds.) *Using film and media in the language classroom: Reflections on research-led teaching* (pp. 30-47). Multilingual Matters. https://doi.org/10.21832/9781788924498-006

Shankweiler, D., Strange, W., & Verbrugge, R. (1977). Speech and the problem of perceptual constancy. In R. Shaw & J. Bradford (Eds.) P*erceiving, acting, and comprehending: Toward an ecological psychology* (pp. 315-345). Lawrence Erblaum Associates.

Siegel, J. (1999). Stigmatized and standardized varieties in the classroom: Interference or separation?. *TESOL Quarterly*, *33*(4), 701-728.

Siegel, J. (2010). *Second dialect acquisition*. Cambridge University Press.

Skutnabb-Kangas, T. (2003). Linguistic diversity and biodiversity: The threat from killer languages. In C. Mair (Ed.) *The politics of English as a world language: New horizons in postcolonial cultural studies* (pp. 31-52). Rodopi.

Smith, L. T. (2021). *Decolonizing methodologies research and Indigenous peoples* (3rd ed.). Zed Books.

Smyth, E., & Hamel, T. (2016). The history of initial teacher education in Canada: Québec and Ontario. *Educação & Formação, Fortaleza, 1*(1), 88-109

Spolsky, B. (2002). Norms, native speakers, and reversing language shift. In In S. M. Gass, K. Bardovi-Harlig, S Sieloff Magnan, & J. Walz (Eds.) *Pedagogical norms for second and foreign language learning and teaching: Studies in honour of Albert Valdman* (pp. 41-58).

Statistics Canada. (2021). *Speaking of work: Languages of work across Canada*. Retrieved May 15, 2024. https://www12.statcan.gc.ca/census-recensement/2021/as-sa/98-200-X/2021010/98-200-x2021010-eng.cfm

Statistics Canada. (2023). *Canada at a glance: Immigration and ethnocultural*. https://www150.statcan.gc.ca/n1/pub/12-581-x/2023001/sec2-eng.htm

Statistics Canada. (2024). *First Nations*. https://www.rcaanc-cirnac.gc.ca/eng/1100100013791/1535470872302 (accessed March 10, 2025)

Steffensen, S. V. (2024). Surveying ecolinguistics. *Journal of World Languages*, 1-49. DeGruyter Mouton. https://doi.org/10.1515/jwl-2024-0044

Steffensen, S. V. & Baggs, E. (2024). Ecolinguistics and the cognitive ecology of global warming. In *Language as an ecological phenomenon: Languaging and bioecologies in human-environment relationships* (pp. 55-81). Bloomsbury.

Steffensen, S. V., & Kramsch, C. (2017). The ecology of second language acquisition and socialization. In P. Duff, & S. May, S. (Eds) *Language socialization*. *Encyclopedia of*

Language and Education (pp. 17-32). Springer. https://doi.org/10.1007/978-3-319-02327- 4_2-1

Sterzuk, A. (2011). *The struggle for legitimacy: Indigenized Englishes in settler schools* (Vol. 12). Multilingual Matters.

Sterzuk, A. (2015). 'The standard remains the same': Language standardisation, race and othering in higher education. *Journal of Multilingual and Multicultural Development, 36*(1), 53–66. https://doi.org/10.1080/01434632.2014.892501

Sterzuk, A. (2020). Building language teacher awareness of colonial histories and imperialistic oppression through the linguistic landscape. In D. Malinowski, H. Maxim & S. Dubreil (Eds.) Language teaching in the linguistic landscape: Mobilizing pedagogy in public space (pp. 145-162). Springer. https://doi.org/10.1007/978-3-030-55761-4_7

Stringer, D. (2024). Folkbiology in endangered languages: Cognitive universals and lexical relativity. *Sociolinguistic Studies*, *18*(3-4), 357-376.

Sundberg, R., & Cardoso, W. (2022). The feasibility of using Bande à Part to aid French language learners. *CALICO Journal, 39*(2), 196-218.

Strange, W., & Dittmann, S. (1984). Effects of discrimination training on the perception of/rl/by Japanese adults learning English. *Perception & psychophysics, 36*(2), 131-145.

Sun, Y., Wang, G., & Feng, H. (2021). Linguistic studies on social media: A bibliometric analysis. *Sage Open, 11*(3), 1-12. https://doi.org/10.1177/2158244021104757

Sydorenko, T., Cárdenas-Claros, M. S., Huntley, E., & Perez, M. M. (2024). Audiovisual input in language learning: Teachers' perspectives. *Language Learning & Technology, 28*(1), 1-25.

Tarone, E. (2007). Sociolinguistic approaches to second language acquisition research: 1997-2007. *The Modern Language Journal, 91*(S1), 837-848. https://doi.org/10.1111/j.1540-4781.2007.00672.x

Tanchuk, N., Kruse, M., & McDonough, K. (2018). Indigenous course requirements: A liberaldemocratic justification. *Philosophical Inquiry in Education*, *25*(2), 134-153.

Teasdale, A. (1997). On the differential substitution of English [u]: A phonetic approach. *Calgary Working Papers in Linguistics, 19*, 71–85.

Thorne, S. L., Black, R. W., & Sykes, J. M. (2009). Second language use, socialization, and learning in Internet interest communities and online gaming. *Modern Language Journal, 93*(s1), 802– 821.

Thorne, S. L. (2013). Language learning, ecological validity, and innovation under conditions of superdiversity. *Bellaterra Journal of Teaching & Learning Language & Literature, 6*(2), 1–27.

Tin, T. B. (2012). Freedom, constraints and creativity in language learning tasks: New task features. *Innovation in Language Learning and Teaching, 6*(2), 177–186.

Trask, H. K. (2004). The color of violence. *Social Justice, 31*(4), 8-16.

Trudgill, P. (2011). Standard English: What it isn't. In T. Bex & R. J. Watts (Ed.s) S*tandard English: The widening debate*, (pp. 117-128), Routledge.

Tuck, E. & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, Education & Society, 1*(1), 1–40.

Turcotte, D. (2014). La place du français en usage au Québec dans le grand dictionnaire terminologique (GDT). In W. Remysen (ed) *Les français d'ici : du discours d'autorité a la description des normes et des usages* (pp. 129-140). Presses de l'Université Laval.

Tyler, M. (2019). PAM-L2 and phonological category acquisition in the foreign language classroom. In A. Nyvad, M. Hejná, A. Højen, A. Jespersen, & M. Sørensen (Eds.), *A sound approach to language matters: In honor of Ocke-Schwen Bohn* (pp. 607-630). https://doi.org/10.7146/aul.322.218

Tyler, M. D., Ball, C. C., & Best, C. T. (2024). Listening and speech perception. In E. Wagner, A. Batty, & E. Galaczi (Eds) *The Routledge Handbook of second language acquisition and listening* (pp. 29-41). Routledge.

UNESCO. (2017). *A guide for ensuring inclusion and equity in education*. UNESCO. https://inclusiveeducation.ca/wp-content/uploads/sites/3/2013/07/UNESCO-InclusionEducation.pdf

Uzum, B., Yazan, B., Zahrawi, S., Bouamer, S., & Malakaj, E. (2021). A comparative analysis of cultural representations in collegiate world language textbooks (Arabic, French, and German). *Linguistics and Education, 61*(100900), 1-12.

Valdman, A. (1989). The elaboration of pedagogical norms for second language learners in a conflictual diglossia situation. In S. Gass, C. Madden, D. R. Preston, & L. Selinker (Eds.), *Variation in second language acquisition. Volume I: Discourse and pragmatics* (pp. 15–34). Multilingual Matters

Valdman, A. (2003). The acquisition of sociostylistic and sociopragmatic variation by instructed second language learners: The elaboration of pedagogical norms. In C. Blyth (Ed.) *The sociolinguistics of foreign-language classrooms: Contributions of the native, the near-native, and the non-native speaker* (pp. 57- 78). Heinle.

van Lier, L. (2000). From input to affordance: Social-interactive learning from an ecological perspective. In J.P. Lantolf (Ed.) *Sociocultural theory and second language learning* (pp. 245-259). Oxford University Press.

van Lier, L. (2004). *The ecology and semiotics of language learning: A sociocultural perspective*. Springer.

van Lier, L. (2011). Language learning: An ecological-semiotic approach. In *Handbook of research in second language teaching and learning* (pp. 383-394). Routledge.

VanPatten, B., & Williams, J. (2015). Introduction: The nature of theories. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition* (2nd ed.; pp. 1-16). Routledge.

Veracini, L. (2022). *Colonialism: A global history*. Routledge.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science, 46*(2), 186–204. https://doi.org/10.1287/mnsc.46.2.186.11926

Vincent, J. (2012). Varieties of variation, and the variation of varieties. *Anglistica AION: An Interdisciplinary Journal, 16*(1/2), 9-26.

Walz, J. (1980). Colonialistic attitudes toward the French-speaking world in American textbooks. *Contemporary French Civilization, 5*(1), 87-104.

Walz, J. (1986). Is oral proficiency possible with today's French textbooks? *The Modern Language Journal, 70*(1), 13-20.

Wardhaugh, R. & Fuller, J. (2015). *Introduction to sociolinguistics* (7th ed.). Wiley Blackwell.

Weaver, C. H. (1972). *Human listening; processes and behavior*. Bobbs-Merrill.

Webb, S. (2014). Extensive viewing: Language learning through watching television. In D. Nunan & J. C. Richards (Eds.), *Language learning beyond the classroom* (pp. 159–168). Routledge. https://doi.org/10.4324/9781315883472

Wei, L., & García, O. (2022). Not a first language but one repertoire: Translanguaging as a decolonizing project. *RELC journal*, *53*(2), 313-324.

Wernicke, M. (2017). Navigating native-speaker ideologies as FSL teacher. *Canadian modern language review*, *73*(2), 208-236.

Wernicke, M. (2021). Preparing teachers for multilingual classrooms in English Canada. In M. Wernicke, S. Hammer & A. Hansen (Eds.), *Preparing teachers to work with multilingual learners* (pp. 168-190). https://doi.org/10.21832/9781788926119-011

Werker, J. F. (1995). Exploring developmental changes in cross-language speech perception. In L. R. Gleitman & M. Liberman (Eds.), *Language: An invitation to cognitive science* (2nd ed., Vol. 1, pp. 87–106). MIT Press.

Wilkes, R., Duong, A., Kesler, L., & Ramos, H. (2017). Canadian university acknowledgment of Indigenous lands, treaties, and peoples. *Canadian Review of Sociology/Revue Canadienne de sociologie, 54*(1), 89–120.

Wolfe, P. (2006). Settler colonialism and the elimination of the native. *Journal of genocide research*, *8*(4), 387-409.

Wolfram, W., Charity Hudley, A. H., & Valdés. G. (2023). Language & Social Justice in the United States: An Introduction. *Daedalus, 12*(3), 5–17. doi: https://doi.org/10.1162/daed_e_02014

Wolfram, W., Reaser, J., & Vaughn, C. (2008). Operationalizing linguistic gratuity: From principle to practice. *Language and Linguistics Compass*, *2*(6), 1109-1134.

Wong, A. (2011). The disquieting revolution: A genealogy of reason and racism in the Québec press. *Global Media Journal: Canadian Edition, 4*(1), 145-162.

Woodman, J. (2007). Exonyms and UGEGN: An unhappy history. In P. Jordan, M. Adamič, P. Woodman (eds.) *Exonyms and the international standardisation of geographical names* (pp. 7-10). Wiener Osteuropa Studien.

Zéphir, F. (1999). Caribbean films in the French curriculum: Strengthening linguistic and multicultural competency. *French Review, 72*(3), 515-528.

Zhou, W. (2021). Ecolinguistics: A half-century overview. *Journal of World Languages*, *7*(3), 461-486.

Appendix A

FSL Teacher Biodata Questionnaire

1. Age:

2. Gender:

3. Is French your first language?

    a) Yes

    b) No, my first language is:

4) If you know other languages, please indicate if it is your second/third language, including your proficiency level (i.e., basic/intermediate/advanced/native-like):

5) What French accent/dialect have people told you that you have?

6) How many French-speaking cities/countries have you lived in or visited in your lifetime?

7) What French accents/dialects are you familiar with (e.g., Acadian, dialects from France, etc.)?

7b) Do you believe you could easily communicate with people from the regions that you identified above?

8) What French accents/dialects have you had trouble understanding or communicating with (e.g., Acadian, dialects from France, etc.)?

9) What French dialects do you speak; please indicate your proficiency. (i.e., basic/intermediate/advanced/native-like)

10) How many years have you been teaching French?

11) What proficiency levels of French have you taught or do you normally teach?

12) In what cities have you taught French; indicate the duration. (e.g., Trois-Rivières for 3 months)

13) What is the last level of education that you completed? M.A. in applied linguistics

14) Have you completed a degree focused on second language teaching?

a) Yes – degree name:

b) No, but I took the following language teaching courses:

c) No, but I feel that my experiences/backgrounds in the following were useful:

d) Other:

15) Have you ever taught any form-focused French classes? For example, DELF preparation courses, pronunciation or conversation classes?

Appendix B

Broad-framing Questions for FSL Instructors

1. In any given class, how often would you say you use audiovisual input? (music videos, dialogues/speeches, YouTube clips, TV, movies, etc.). E.g., every class, every other class, every few classes, rarely, never.
2. Where do you typically find audiovisual input?
3. How do you decide what kind of audiovisual input is appropriate for your classroom?
4. Similarly, how do you decide what kind of audiovisual input is inappropriate for the classroom?
5. In your opinion, what elements represent "good" audiovisual material for learning?
6. In the same vein, what elements would represent "bad" audiovisual material for learning?
7. In your opinion, do certain proficiency levels (e.g., beginner, intermediate, and advanced) require different types of audiovisual input? Please explain.
8. Have students ever complained of not understanding French used outside of the classroom? If so, what did they describe?
9. Are there any strategies that you have taught, or that you have seen students use, to help them navigate these difficulties?
10. Can you name any audiovisual input that you have used in your classes that:
    - You found useful
    - Students seemed to enjoy
    - Were deemed mandatory by administration
11. Similarly, can you name any audiovisual input that you have used in your classes that:
    - You did not find useful

- Students did not seem to enjoy
- Were restricted to be used by administration

12. Are you mandated by your institution or curriculum to use certain types of textbooks or audio input in the classroom? If so, please provide the names of these resources.
13. When choosing audiovisual materials for your classroom, do you have preferences for male or female voices? Age? Region? Racial background? Native speaker?
14. When choosing spoken audiovisual material for your classroom, are there any voices you target or avoid? For example: age groups, fe/male speakers, races, regions, non/native speakers. Why?
15. Have you ever used reading material that reflects spoken French (e.g., speeches, plays, dialogues, etc.)?
    a) If so, please provide an example of the reading material. Please also provide an example of which accent/dialect this material was conveying:
    b) If not, is there a reason why you did to not use such material?
16. Have students ever stated they had difficulty understanding: Men, women or both? A particular French region? A particular age or racial group?
17. Have you ever changed aspects of your aural curriculum to address a student's need?
    a) If so, please provide examples of changes made due to student requests (e.g., What were their needs, what activities did you use to help them?)
    b) No, I typically do not change my curriculum because…
18. How do you think your audiovisual curriculum might prepare learners for interacting with diverse French speakers?

19. In your opinion, what can learners do to ameliorate their listening skills for the different French varieties they are bound to encounter?

Appendix C

Technology Assessment Model 2 (TAM2) rating questions

TAM2: Perceived usefulness

Using *Parlure Games* in an ESL class could:

- Improve the effectiveness of listening tasks
- Boost student productivity (e.g., speaking)
- Enhance my listening training program
- Be useful
- Permit me to complete listening tasks rapidly
- Make listening tasks easier to teach

TAM2: Perceived ease of use

- My interaction with *Parlure Games* is clear and understandable.
- I found *Parlure Games* easy to use.
- I found it easy to get *Parlure Games* to do what I wanted it to do.
- I found my interactions with *Parlure Games* to be smooth.
- Learning how *Parlure Games* works was easy.
- It was easy for me to become adept at using *Parlure Games* .

Appendix D

Technology Assessment Model 2 (TAM2) Questionnaire: Feedback on Three Teaching Goals of *Parlure Games*

Teaching sociophonetic variation

Based on what we learned in class regarding HVPT and the importance of listening to diverse dialects of the target language, could *Parlure Games* contribute to dialectal learning? How?

Plurilingual teaching

Based on what we learned in class regarding critical ESL and the importance of supporting plurilingual competence, could *Parlure Games* contribute to plurilingual learning? How?

Critically discussing imperialism

Could *Parlure Games* contribute to discussing English imperialism? How?

Open Constructs

- What did you like about *Parlure Games*?
- What did you not like about *Parlure Games*?
- What would you like to see in future versions?
- Other comments?