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Canadian Hockey English: Production and Perception

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Affidavit

I, undersigned, Julie Dallinges, hereby declare that the work presented in this manuscript is my own work, carried out under the scientific direction of Linda Pillière and Jeff Tennant, in accordance with the principles of honesty, integrity and responsibility inherent to the research mission. The research work and the writing of this manuscript have been carried out in compliance with both the French national charter for Research Integrity and the Aix-Marseille University charter on the fight against plagiarism.

This work has not been submitted previously either in this country or in another country in the same or in a similar version to any other examination body.

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Résumé

Cette thèse examine le parler des joueurs de hockey sur glace anglophones au Canada, et s'interroge sur l'existence d'une variété distincte propre à ces locuteurs qui pourrait être appelée « Anglais canadien du hockey ». J'effectue une analyse acoustique de deux variables phonétiques canadiennes les plus décrites: Canadian Raising (CR) et the Canadian Vowel Shift (CVS), dans les enregistrements du corpus PAC-LVTI Ontario (Canada) Hockey English. J'examine la possibilité que ces variables soient conditionnées par le degré d'engagement des joueurs de hockey dans leur sport. En parallèle, j'explore les représentations que peuvent avoir les Ontariens envers l'anglais canadien et le parler hockey grâce à un questionnaire en ligne. Je teste aussi la capacité des participants à identifier un joueur de hockey d'après un échantillon de parole. Les résultats de production montrent que les variables étudiées sont présentes dans le parler de ces joueurs de hockey. De plus, les joueurs de hockey avec le plus fort taux d'engagement dans leur sport réalisent plus de CR de la voyelle /ai/ (PRICE), mais cela n'est pas le cas pour la voyelle /au/ (MOUTH). Le CVS, en revanche, n'est pas conditionné par le taux d'engagement des joueurs de hockey. Les résultats de perception révèlent que les Ontariens associent des caractéristiques lexicales, orthographiques et phonétiques à l'anglais canadien, et que celui-ci est présenté comme étant distinct des anglais américain et britannique. Les participants reconnaissent que les joueurs de hockey possèdent un parler hockey qu'ils décrivent avec des caractéristiques lexicales, et qu'ils associent à la ruralité et au manque d'éducation. Certains le perçoivent comme une version stéréotypée de l'anglais canadien. Les joueurs de hockey n'ont pas été correctement identifiés par les participants, mais les résultats ont permis de mieux comprendre l'influence de l'étiquette « joueur de hockey » sur l'évaluation de l'enregistrement d'un locuteur Canadien.

Mots clés : Anglais canadien, Anglais canadien du hockey, Canadian Raising, le Canadian Vowel Shift, Perception, Identité, Indexicalité, sociolinguistique.

Abstract

The present dissertation investigates the English spoken by ice hockey players in Canada, asking whether there might be a distinct language variety that could be called "Canadian Hockey English". Applying acoustic analysis to recorded samples from the PAC-LVTI Ontario (Canada) Hockey English Corpus, I study two well-known Canadian English phonetic features: Canadian Raising and the Canadian Vowel Shift. I am particularly interested in determining whether these two variables are conditioned by the degree of hockey players' engagement in the sport. In parallel, using a three-part online survey, I explore anglophone Ontarians' knowledge and awareness of both Canadian English and Hockey English. I also test whether respondents can identify hockey players' speech from listening to speech samples. Results of the production component of the study show that the speech of hockey players displays both Canadian features, and that speakers with a higher degree of involvement in the sport show more Canadian Raising in the /ai/ vowel of the PRICE lexical set, but not in the /au/ vowel of MOUTH. The Canadian Vowel Shift, on the other hand, does not appear to be conditioned by this factor of hockey engagement. The results of the perception component indicate that Ontarian respondents associate lexical, spelling and pronunciation features with Canadian English, which they distinguish from both American and British Englishes. Most respondents also acknowledge the existence of Hockey English, which they identify through lexical features, and which they associate with rurality and a lack of education. Some participants report that HE displays stereotypical features of Canadian English. Although respondents are not accurate in their identification of hockey players, the findings provide valuable insight into the influence of the label "hockey player" on respondents' ratings of the recorded samples of Canadian English.

Keywords: Canadian English, Hockey English, Canadian Raising, the Canadian Vowel Shift, Perception, identity, indexicality, sociolinguistics.

Lay audience summary

The present dissertation investigates the English spoken by ice hockey players in Canada, asking whether they might have a particular way of speaking that could be called "Canadian Hockey English". Interest in this community is sparked by the strong link between hockey, Canada's national sport since 1994, and Canadian identity. In order to answer this research question, this thesis combines two parts. I first recorded the speech of 19 non-professional hockey players living in London, Ontario, following the methodology of sociolinguistics, a field interested in studying how language varies and changes. I focus on two specific Canadian features: vowel sounds in words such as M**OU**TH and PR**I**CE, and those in words like K**I**T, DR**E**SS and TR**A**P. The analysis focuses on determining whether ice hockey players' engagement in the sport may influence how they display their Canadian identity in their pronunciation of these vowel sounds. In the second part, I used a three-part online survey to discover participants' beliefs and representations about Canadian English and Hockey English, as well as a listening task that asked participants to listen to short recordings, rate the speakers on personal traits (e.g., friendly, educated), and say if they would identify these speakers as hockey players. The online survey was completed by 249 participants, all anglophone Ontarians, born and currently living in Ontario. While results for pronunciation features do not convincingly point to the existence of a distinct Canadian Hockey English, results of the perception study do confirm Ontarians' belief that Canadian hockey players have a particular way of speaking English.

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Table of content

List of Tables

List of Figures

List of abbreviations

/ai/: the PRICE diphthong in all other environments
/aiD/: the PRICE diphthong followed by a voiced consonant
/aiN/: the PRICE diphthong followed by a nasal
/aiT/: the PRICE diphthong followed by a voiceless consonant
ANAE: Atlas of North American English (Labov et al. 2006)
ANOVA: Analysis of Variance
/au/: the MOUTH diphthong in all other environments
/auD/: the MOUTH diphthong followed by a voiced consonant
/auN/: the MOUTH diphthong followed by a nasal
/auT/: the MOUTH diphthong followed by a voiceless consonant
BrE: British English
CE: Canadian English
AmE: American English
CR: Canadian Raising
CVS: the Canadian Vowel Shift
CoP: Community of Practice
DCHP-1: The Dictionary of Canadianisms Historical Principles-1 (Avis 1967)
DCHP-2: The Dictionary of Canadianisms Historical Principles-2 (Dollinger and Fee 2017)
F1: First formant (open/close dimension)
F2: Second formant (front/back dimension)
FN: Female non-player
FP: Female player
LVTI: Langue, Ville, Travail, Identité / Language, City, Work, Identity
PAC: Phonologie de l'Anglais Contemporain / Phonology of Contemporary English (Durand and Przewozny 2012, Tarrier et al. 2019, Przewozny et al. 2020)
Hz: Hertz
N: The total number of individuals or observations in a sample
N/A: Not Applicable
HII: Hockey Involvement Index
MANOVA: Multivariate Analysis of Variance
MN: Male non-player
MP: Male player
NHL: National Hockey League
NYC: New York City
Q: Question
SES: Socioeconomic status
U.S.: the United States

Introduction

This thesis focuses on Canadian English (CE) and specifically on the English spoken by Anglophone Canadians who play their country's national sport: ice hockey. I seek to determine, from the standpoint of both production and perception, whether one can speak of a distinct language variety that could be called Canadian Hockey English (HE). I define HE as a variety spoken by nonprofessional ice hockey players, regardless of their level of play or skill in the sport. This variety is understood to be related to the social background of the speakers rather than their geographical origin and can also be characterised as a sociolect or a social dialect (Trudgill 2003: 122).

I conducted this research project in several steps, but it principally originated from my master's research and a 2015 pilot study. In that study, I carried out 23 sociolinguistic interviews during which I collected Ontarians' self-reported perceptions on CE and discussed whether or not they believed their variety of English to be an aspect of their identity. One participant stated that the speech of hockey players was representative of CE (e.g., "If you study Canadian English, you should study the hockey players' talk"), suggesting that Canadians hold stereotypes about the way Canadian hockey players speak. This comment is not surprising but sparked my interest due to the important status of hockey in Canada, as it has indeed been Canada's national winter sport since 1994. Hockey has remained a constant expression of Canadian identity (Chambers 2014: 60), and Canadian pride has been embedded in the sport ever since the first indoor game was played on March 3rd, 1875 in Montreal (Robidoux 2002: 219).

On further investigation, I discovered that despite the importance given to hockey in Canada, only a few studies investigate lexical aspects of HE (Bednarek 2009, Bray 2015) or refer to the hockey lexicon (Barber 2008), with one Ph.D. thesis delving into the variety spoken by professional American-born ice hockey players (Bray 2022). Furthermore, no acoustic analysis has been conducted on Canadian HE yet, and phonetic and phonological aspects of HE remain undescribed.

This twofold research project started with the production study and was first concerned with the actual variety of English spoken by hockey players (HE). I carried out an innovative empirical research project on spoken HE to address the gap in the research. I collected a corpus

of English spoken by Canadian hockey players (PAC-LVTI[1] Ontario (Canada) Hockey English Corpus, following the PAC-LVTI methodology (Durand and Przewozny 2012, Tarrier et al. 2019, Przewozny et al. 2020), a protocol of semi-structured sociolinguistic interviews, to investigate what effect if any, membership in a community of practice (CoP) of hockey players might have on the realisation of typical phonetic characteristics of CE, and to what extent such an eventual effect might explain non-linguists' perception of HE as epitomising typical features of CE.

The two phonetic variables I chose, Canadian Raising (CR) and the Canadian Vowel Shift (CVS), are mentioned in Labov et al.'s work (2006: 223) as features that distinguish CE from other English varieties. These variables are considered to be typically Canadian and are prevalent in the description of the Canadian English variety (Chambers 1973: 113, Chambers 2006: 106). CR is the raising of the nuclei of the diphthongs /ai/ PRICE and /au/ MOUTH before voiceless obstruents[2] (e.g., *h**ou**se*, or *l**i**fe*) (Joos 1942, Chambers 1973). The CVS is a shift which involves the lowering and retraction of short lax vowels /ɪ/ KIT, /ɛ/ DRESS and /æ/ TRAP in the vowel space (e.g., *t**i**cks*, *t**e**x*, *t**a**x*) (Clarke et al. 1995, Labov et al. 2006). The production study addresses the following research questions:

(1) Are both CR and the CVS present in the speech of the hockey players participating in the study?

(2) Are these phonetic variables conditioned by these hockey players' level of engagement with the sport?

These variables evoke two levels of salience (Trudgill 1986: 11), meaning that non-linguists have different levels of awareness of them. CR has been shown to be a change that occurs above the level of speakers' conscious awareness. Speakers are indeed aware of this way of pronouncing vowels which is sometimes used to characterise CE. It is a stereotyped variable of which non-linguists have a high level of awareness, as the everyday expression "oot and aboot" used by Americans to describe Canadian speech attests. The CVS, on the other hand, is below the level of conscious awareness (e.g., speakers are unaware of this specific way of pronouncing vowels) and remains an indicator, i.e., a non-salient variable that tends not to vary according to style (Labov 1972). Based on these differences in salience between the two variables, I advance a different overarching research hypothesis for each of these variables. On the one hand, CR is expected to be active in the speech of the hockey players participating in

[1] Phonologie de l'Anglais Contemporain / Phonology of Contemporary English- Langue, Ville, Travail, Identité / Language, City, Work, Identity.
[2] Voiceless obstruents are the following: /p/, /t/, /k/, /f/, /s/, /ʃ/, / tʃ/. Obstruent sounds obstruct the airflow.

the study, and to be correlated with players' engagement with the sport. On the other hand, the CVS is expected to be present in HE, but not be conditioned by speakers' level of involvement in hockey.

The perception component of this research project emanates from participants' comments collected during the sociolinguistic interviews of the production study (e.g., "Americans have told me I sound Canadian, something about the out and about" (KB1) and "There's like a stereotype of how [hockey players] speak […] I was gonna say more of a Canadian accent" (HS1)). In her comment, KB1 refers to the stereotypical variable of CR, and notes that Americans claim to identify Canadian speakers by their use of this pronunciation. HS1's comment reinforces the idea raised by other participants in the 2015 pilot study, highlighting that hockey players are thought to sound more typically Canadian. As a result, this perception study aims to further explore whether these preliminary findings, which evidence linguistic knowledge of non-linguists about both CE and HE, are found in a larger survey. While there exists an extensive body of work on CE (Boberg 2010, 2019; Tagliamonte and D'Arcy 2015; Walker 2015; Nycz 2016; Swan 2016), no major perception study has explored CE or the status of HE as a potentially distinct subvariety.

Since Labov's early work in the 1960s, sociolinguists have studied variation and how it relates to the constant processes of change observable in language. Sociolinguists have also been interested in speakers' reactions (both positive and negative) to and judgements of linguistic variants. The role of attitudes in speakers' reactions to linguistic variation and change has recently gained greater attention in the field as sociolinguists have recognised the importance of perception (Thomas 2002: 115).

The perception study in this dissertation is based on a three-part online survey which was distributed in Ontario. It endeavours to further assess the perceptions, the linguistic stereotypes, and the mental representations surrounding both CE and HE. It also investigates how listeners identify and evaluate HE and specifically how the presence of instances of CR in the stimuli lead (or do not lead) listeners to identify the speaker as a hockey player. The perception study addresses the following research questions:

(3) Are Ontarians aware of the existence of a Canadian variety of English (i.e., CE) and if yes, is Canadian English only perceived according to known stereotypes?

(4) Do Ontarians think there is a distinct variety of Canadian English that is spoken by hockey players? If yes, is Hockey English (HE) perceived as sounding typically Canadian?

In formulating the hypothesis that hockey players might sound to an Ontarian as being more stereotypically Canadian than average Canadians who do not play hockey, I am of course acknowledging the underlying assumption that participants recognise CE as a distinct variety of English. The literature (e.g., Dollinger 2019: 233-235) provides a good basis for assuming that most respondents would recognise that CE exists. Moreover, such a hypothesis implies that untrained listeners recognise linguistic features they associate with this variety. I assume that respondents would describe CE in terms of differences from American English (AmE) and similarities with British English (BrE), because of the role played by these English varieties in the codification of CE. The stereotype of hockey players in Canada (MacDonald 2012) is assumed to be sufficiently well known for it to be expected that respondents will recognise a distinct variety spoken by hockey players. Respondents may not use linguistic features to describe this variety, but they may rely on social characteristics such as age or gender instead, associating HE with younger or male speakers, because of the representation of hockey as a male-dominated sport. Moreover, respondents may believe that use of this variety is limited exclusively to the context of hockey.

The present thesis is divided into three main parts, and 12 chapters.

Part one reviews the sociolinguistic situation in anglophone Canada and includes three chapters. Chapter 1 focuses on the external history of CE. It emphasises the importance of the different waves of immigration in the founding of Canada, and how, during colonisation, British and American varieties of English have shaped the emerging Canadian variety of English. I rely on the examples of Canadian dictionaries and Canadian spelling to show how these English varieties have led to the consideration of competing forms in the codification of CE. Finally, this chapter summarises debates concerning the status of CE as a distinct variety of English.

Chapter 2 presents a review of the defining features of CE that serve as a basis for establishing it as a distinct variety of English, with discussion of linguistic variables as well as social and regional variation. In this chapter, I first consider CE from a phonetic standpoint, emphasising that CE distinguishes itself because of its vowel sounds rather than its consonants. I document the phonetic variables studied in this research, reviewing in some detail previous studies on CR and the CVS. Then, this chapter shows that grammatical characteristics are less salient, and that CE grammar is aligned with North American English grammar overall. However, some social variation is present and typical grammatical features are found in some areas of Canada (e.g., Newfoundland). This chapter then examines the lexical features of CE, first in relation to other English varieties to show that the Canadian lexicon is a combination of both the American and the British lexicon, and with a focus on specifically Canadian

vocabulary and expressions (Canadianisms). The other sections of this chapter are concerned with regional lexical variation and lexical studies conducted on HE. Finally, this chapter finishes with a section on CE spelling, presenting its variability and referring to spelling guides with a view to providing a complete overview of English spelling in Canada.

Chapter 3 begins with a discussion of identity and reviews how questions of identity have been investigated in sociolinguistics, with a particular focus on the agentive role of speakers within a CoP. It sheds light on identity as a dynamic concept that can be used by speakers to express membership. This chapter also presents the role of hockey in Canadian national identity, at a time when Canada was an emerging nation. This discussion helps build our understanding of the strong link between CE and hockey players in Canada in light of the importance of the sport for Canadians.

Part two of the thesis is composed of four chapters, giving a detailed account of the methodologies used, and the theoretical choices made in this research project. Chapter 4 provides a literature review of the sociolinguistic methods used in the study of language variation and change and shows how these methods have diversified over time. There is a particular focus on how recent sociolinguistic studies have shifted attention beyond the association of linguistic variables with macro social categories (e.g., gender, age, etc.) and have emphasised the study of how linguistic variables may be deployed by speakers to convey social meanings. In Chapter 4, I also present a critical review of the different sampling methods applied in sociolinguistic research. Then, I provide a description of the PAC-LVTI project that serves as a basis for gathering my corpus of hockey players' speech, focusing on the methodological tools in the PAC-LVTI protocol as well as the main objectives of the project.

Chapter 5 gives a thorough description of the production study. I begin with the rationale for the community selected and give an overview of the sampling techniques for recruiting participants. Before providing a presentation of the profile of each speaker, I give a sociolinguistic description of the speakers as a group, with details on traditional social factors (gender, age, birthplace, place of residence and socioeconomic status (SES)) as well as their degree of engagement with hockey. This chapter also introduces the two indexes, hockey involvement and SES, which were operationalised as independent variables to investigate their eventual effects on the phonetic variables. The chapter finishes with a presentation of the tools used in acoustic analyses.

Chapter 6 offers a critical review of methodologies used to elicit perceptions in attitudinal studies. This review includes discussion of the notions of perception and attitudes as well as the concept of stereotypes which is central to this study. Chapter 6 also presents the different tasks

implemented in attitudinal studies, with a particular focus on the Matched Guise Technique, the Verbal Matched Guise technique, and measurement scales. Moreover, this chapter provides a discussion on the bidirectionality of perceptions and underlines the valuable contributions of Folk Dialectology research which highlights the validity of the responses of non-specialists. To finish, the concept of linguistic insecurity is explained.

In Chapter 7, I present the perception study survey. I focus primarily on the survey participants, their selection and recruitment, in addition to providing a demographic profile of the respondents. I also include information on the structure of the survey and of the different tasks I designed. I present the questions with a particular focus on the listening task which is constructed on the model of a Verbal Matched Guise Technique. The selection of the speakers and the utterances used for the recorded stimuli and the coding system used to refer to them are also presented.

Part three is composed of five chapters which present the results of the production and perception studies. Chapter 8 outlines the analyses conducted to address the research questions on CR. The MOUTH and PRICE diphthongs are first analysed separately to determine whether they behave similarly or not. The chapter begins with observations on unnormalised vowel formant data to study whether individual speakers raise and front both diphthongs to a similar degree or not. Degrees of raising and fronting are calculated for each speaker as a basis for observation on the status of speakers who are identified as "raisers", that is, speakers who realise the nucleus of the diphthong higher in the vowel space. I also show, using normalised mean formant values, how the speakers behave as a group with respect to both raising and fronting. Further, sociolinguistic variation in raising and fronting of these diphthongs is investigated by analysing how social factors condition the shift, considering traditional social factors such as age and gender, as well as speakers' degree of engagement with hockey. I also investigate possible correlations between raising and fronting to determine whether my findings are consistent with previous studies.

Chapter 9 presents the analyses and the results for the CVS. It begins with a discussion of the phonological contexts which are known to favour or disfavour the shift. Then, following the same model as in Chapter 8, unnormalised vowel formant data are used to investigate overall trends and individual variation in the shift, including a comparison of each speaker to the speakers who realise the most shifted vowels (the shift leaders). Moreover, using normalised formant data, I analyse conditioning effects of social factors on the shift, both the traditional social factors and degree of speakers' engagement with hockey. The chapter concludes with an

analysis of the correlated movements of the different vowels involved in the shift to determine the consistency of my findings with those of previous studies.

In Chapter 10, I present the results of the online perception survey that address the perception of CE as a distinct variety, based on a series of questions asking about the existence of such a variety and the linguistic features associated with the variety. I present and discuss the responses to the tick-box task that asks respondents to evaluate the Canadian accent and CE more generally, to determine to what extent Ontarians have a positive image of the English they speak. This chapter also studies the perception of the status of CE in comparison with British and American varieties and investigates whether Canadian respondents believe that CE is a distinct variety.

Chapter 11 follows a similar outline to that of Chapter 10. It first addresses participants' awareness of a variety spoken by hockey players, and whether they believe it exists or not. Assuming that HE is perceived as sounding typically Canadian, the linguistic and social markers of HE are first addressed, followed by an analysis of the situations in which non-linguists consider that HE is most likely to be spoken. The possible existence of gender differences in the use of HE is also addressed. The fourth research question of this thesis addresses the link that may exist between HE and CE.

Chapter 12 focuses on the perception of spoken HE, based on a Verbal Matched Guise Technique. I first report the results of the identification and the evaluation of the hockey players' variety by non-linguists, based on a series of listening tasks. Then, I discuss the linguistic markers respondents say they use to recognise a Canadian hockey player, including a discussion that focuses more specifically on CR. I also consider the role of gender in respondents' identification of hockey players in recorded stimuli, noting as well the importance of the label "hockey player" in the participants' evaluation of the speakers in the recordings. Responses on four criteria in the evaluation of hockey players' speech are analysed: Canadianness, friendliness, education, and accent. I also investigate the link between the presence of CR in the spoken stimuli and the level of perceived Canadianness.

This thesis finishes with a conclusion synthesising and discussing the results presented in the five chapters of part III, with an account of the strengths and limitations of this research and suggests further areas that may be explored in future research.

Part I Canadian English: origins, development and identity

Chapter 1 Canadian English from an historical perspective

Before examining both CE and HE in detail, it is first necessary to review the history of English in Canada, starting with the period in which the country was founded, in order to understand the factors that delayed the codification of CE and the recognition of its distinctiveness in relation to American and British varieties.

1.1 Language external history of English in Canada

As Walker (2015: 33) observes, the history of speakers and the relevant events which played a significant role in the development of a language variety can be designated using the term "language-external history". This section addresses that history for English in Canada.

1.1.1 Pre-colonisation period

Before examining the waves of immigration that shaped the external history of CE, there is a need to acknowledge that numerous languages existed before the arrival of the colonisers who imposed their languages, French and English, in the territory now known as Canada. In describing the current situation of language diversity in Canada, Dollinger (2019: 2-3) mentions "at least 263 languages spoken in the country" and "about 60" of them are the languages of the original peoples who lived there before European exploration and colonisation. In fact, these Indigenous populations (Aboriginal peoples: First Nations, Inuit, and Métis), who spoke their own languages and varieties, had inhabited what was to become Canada for many centuries prior to the arrival of the first settlers. Dollinger (2019) stands out among scholars for his refusal to perpetuate a tradition of erasure of Indigenous peoples. He addresses what he calls "the difficult aspect of linguistic 'baggage'" (2019: 8) which is associated with Canadian history and needs to be acknowledged when describing that history of CE.

Dollinger (2019) describes the imposition of English and the resulting endangerment of Indigenous languages in the context of the land theft perpetuated by settler colonialism. In the period of "residential schools"[3] in Canada, from 1880s to 1996[4], lands were taken from the Indigenous peoples and held by the Hudson's Bay Company. Then, the lands controlled by the Hudson's Bay Company were transferred to the British government. At that time, Indigenous people were perceived as a threat to the expansion of a "white" society leading to the

[3] Schools that abused Aboriginal peoples, schools that implemented a cultural genocide.
[4] The last residential school closed in 1996.

development of racist sentiments (Fee 2015: 127). Treaties were signed without informed consent, on blank sheets of paper, and they were only discussed orally (2019: 4-6). Dollinger (2019: 197) further notes how Indigenous names were replaced with European names and that corporal punishment was used on Indigenous children in schools to prevent them from speaking their languages. Indeed, this latter measure is one of several elements of "physical, psychological, and sexual abuse" (2019: 97) experienced by Indigenous Peoples in the "Residential School" system that was used for more than a century as an instrument of what Senator Murray Sinclair has termed "cultural genocide" (Truth and Reconciliation Commission 2015: 133).

CE lexicography provides some instructive illustrations of the settler colonialist perspective on Indigenous Peoples. Although *the Dictionary of Canadianisms Historical Principles* (DCHP-1) (1967) is considered to be "an advanced dictionary" for the period of the 1950s and 1960s during which it was compiled, it still reflects the prevalent "colonial narrative" (2019: 204). The second edition better reflects cultural and gender-based diversity (2019: 216), but considerable work will be necessary to revise entries such as the 137 containing the word "Indian", a term which has strong negative connotations, and which is avoided by Canadians nowadays as it recalls the Indian Act of 1876 which assimilated Aboriginal peoples to white society and outlawed the use of Indigenous languages and culture.

The colonialist perspective is maintained in the dictionary by the use of terms such as "a good Indian" which is defined as "a peaceful Indian". Dollinger argues that "an Indian is not peaceful by definition, only a good Indian is" (Dollinger 2019: 202). Moreover, some definitions featured in the DCHP-1 are inexact, such as the word "residential schools", as this entry fails to describe and faithfully represent residential schools as the actual institutions they had already started to become, as previously defined in footnote 3. Dollinger suggests that "few had cared enough to find out what was really going on in the residential schools" (2019: 204) and affirms that the definitions do not correspond to the "survivors' testimonies" (2019: 206). Dollinger offers a full account of how the colonialist perspective is manifested in CE lexicography.

The next section below retraces the language-external history of the formation of CE. This overview follows Chambers' timeline of Canada's waves of immigration (2010: 12-19 and 28-32), a narrative also addressed by Walker (2015) and reflected in Scargill (1977).

> The English language in Canada, Canadian English, did not spread by accident but because of various events and the influences of all the people who have used CE over the years. The vocabulary, the grammar, the pronunciation of a language or a variety is never the product of chance. It is the product of history (Scargill 1977: 7).

While retracing this history, it should be noted that the founding of the country called Canada stems from historical ties to both Britain and the United States, which have significantly impacted the variety in terms of language forms and attitudes toward them, as it is presented throughout this thesis.

1.1.2 French and British colonisation and conflict

In the 1700s, North America was colonised by settlers from Europe, mainly from Britain, France, and Spain. It was the time of the British conquest. BrE speakers settled indiscriminately in the United States and what was to become Canada.

In 1756, war was declared between France, Britain and Spain, a war that came to be known as the Seven Years' War, motivated by Britain's ambitions to conquer New France. The Battle of Quebec (also known as the Battle of the Plains of Abraham) took place in Quebec City in September 1759 and was a decisive victory for the British leading to the surrender of Quebec. The Articles of Capitulation guaranteed the French freedom of religion, property rights and equality in trade. The fact that New France became a British possession was officialised with the Treaty of Paris (1763) which ended the Seven Years' War and imposed British supremacy over the French. Indeed, the Royal Proclamation of 1763 reshaped the territory, and the French became subjects of the British Crown, a measure intended to assimilate the French, who were in greater number in Canada at the time. Following this defeat, which ended French hegemony in North America, French influence in the continent became geographically limited to the original colony on the banks of the St. Lawrence. The Royal Proclamation recognised the First Nations' rights and also assigned the territory west of the Appalachians to the Indigenous peoples, a decision disapproved by the thirteen colonies because they wanted a westward expansion, one of the factors contributing to the outbreak of the American Revolution. The Royal Proclamation was replaced by the Quebec Act of 1774 which expanded the province of Quebec's borders to include some of the Indigenous reserves (Rouaud 2019: 22-23).

As the French outnumbered the English in the years immediately following the Conquest, it became clear to the British authorities that the total assimilation of the French-speaking population was not possible. A two-hundred-year period of French Canadian "*survivance*" followed, until the Quiet Revolution in the 1960s brought greater demands to reinforce the status of French.

1.1.3 Waves of immigration

In this section, I present the different waves of immigration, starting with the Loyalists and then the British wave and finally other groups of immigrants who later arrived in Canada.

First wave of immigration (1776-1812)

During the American Revolution (1776-1783), not all Americans supported the Revolution. In the Thirteen Colonies, 40 000 Americans who were still loyal to the Crown, known as "the United Empire Loyalists", moved to already established cities in Upper Canada (modern-day Ontario) in order to maintain their allegiance to the Crown (Walker 2015: 50). This period is often presented as the first part of the first wave of immigration leading to the first substantial English-speaking population in Canada.

A second wave of immigrants arrived from the U.S. after the Revolution. These refugees were known as the "Late Loyalists" and were not considered to be "true" Loyalists as they had immigrated for varied reasons: they were attracted by the promise of cheap lands and low taxes (Boberg 2010: 61-63). By 1812, these "Late Loyalists" outnumbered the initial Loyalists (2010: 64). In 1812, the United States declared war on Britain, with, among other goals, a view to annexing Canada. Although the United States failed to achieve that annexation, it was able to consolidate its sovereignty over its own territory (Walker 2015: 48). However, both Chambers (2004: 62) and Walker (2015: 48) suggest that the war may have led to increased "anti-American" feeling among Canadians of British descent. British immigrants could remain under the reign of the Crown and a new sense of national identity began to emerge among Canadians.

Second wave of immigration (1815-1867)

To counterbalance immigration from the Loyalists and thereby reduce the proportion of inhabitants of U.S. origin and fortify allegiance to the Crown, British governors encouraged immigration from the British Isles with the promise of free transatlantic passage and cheap lands. Avis (1973: 53) points out that this was done to "reduce Yankee influence and assert kinship with Great Britain". At the time, Scotland and Ireland suffered from poor living conditions (unemployment and famine) which favoured the migration of a considerable number of British-English speaking settlers to unsettled areas of Canada (Chambers 2014: 226). This major period of immigration lasted half a century, dramatically increasing the British based population, and expanding the population of Scottish and Irish ancestry (Bednarek 2009: 6).

Canada's independence: a lengthy process

Dollinger (2019: 29-30) retraces the highly complex situation of CE, noting that it is difficult to locate the exact point in time when Canada began, ironically suggesting it was sometime between 1867, with the Confederation and 1982 with the repatriation of the Constitution. Thus, 1867 is the date when Canada began to affirm itself as a nation; British symbols were slowly being replaced by those of Canada, with an accompanying decline of the prestige associated with the British variety of English. Chambers argues that Canada was "speedily approaching puberty in her drive toward nationhood and […] beginning to exercise her independence" (1993: 24). Additionally, 1982 is the date when Canada acquired the right to alter its foundational documents (Dollinger 2020: 2).

Further waves of immigration

Scholars identify three later waves of immigration. The period of immigration from 1890 to 1914 was mainly from the British Isles and other European countries. People immigrated in the hope of finding work, as an increased labour force was required in Canada. However, in the years following World War II, the Canadian immigration policy saw a radical change. The adoption of the New Immigration Act (1962) eliminated racial restrictions on immigration to Canada. Although non-European immigration had previously been forbidden, Canada began to accept immigrants from Asia and Latin America. As a result of this policy, the proportion of British and American immigrants decreased (Walker 2015: 55) and Canada gradually defined itself as a bilingual (the Official Languages Act 1969) and multicultural country (Walker 2015: 53) leading to a change in the cultural references Canadians used to define their identity. This global immigration continued to diminish British influence during the more recent waves of immigration (1990s-present) (Chambers 2014: 226) while new immigrants to provinces outside of Quebec continued to assimilate to Canadian anglophone culture Bednarek (2009: 3) defines Canada as "a mosaic of nations", a country in which one fifth of the population is neither French, nor British, but are rather the product of immigration. He underlines the importance of Canadian cultural diversity (2009: 3-5).

I have emphasised the external history of Canada, highlighting particularly the importance of the effects of colonisation on Indigenous peoples and on the foundation of Canada as a whole, as well as the several waves of immigration and the development of an independent country.

Following this overview of the waves of immigration and settlement phases that gave rise to the form and status of CE, I will now address more specifically how these settlement patterns led to the development of the variety of English spoken in Canada[5].

1.2 Waves of immigration and the formation of Canadian English

This section outlines the role of these major events in shaping Canada and accounts for the emergence of a CE variety, as it involves the arrival of people of different origins and language backgrounds.

1.2.1 The Loyalist influence on Canadian English

The two waves of the first period of immigration increased the number of English speakers and solidified the American roots of CE (Chambers 2014: 225).

This first wave is known to have had a significant impact on the development of early CE (Chambers 1993). The settlers who came from the Thirteen Colonies arrived with a mix of dialects (Chambers 2003, Bednarek 2009: 5), while the second wave of immigrants added to the direct influence of AmE on CE (Chambers 2014: 225). At the time, schoolteachers and schoolbooks were American and American pronunciation and spelling conventions were considered to be the norm in Canadian schools (Chambers 2004a: 231) with Webster's dictionary being the main lexicographical reference used.

1.2.2 Declining impact of British English

The impact of British immigration during the second wave of immigration needs to be somewhat qualified. Over a million people migrated from the British Isles to what was to become Canada, importing their varieties (Walker 2015: 49). As Chambers explains, these British settlers arrived "too late to alter the essential phonology and grammar of CE" (1995: 61), which echoes the reference to the "Founder Principle" (Mufwene 1996) in which Mufwene highlights that the varieties spoken by settlers may more or less influence the existing varieties, depending on the time of their arrival, early settlers having more influence on these existing

[5] Newfoundland's immigration and linguistic situation are quite different from the rest of Canada, and it only became part of Canada in 1949. It was massively and almost exclusively settled with Scottish and Irish immigrants (Boberg 2010: 65). This explains why Clarke (2011) qualifies Newfoundland as a distinct province, and other linguists describe the Newfoundland variety as separate (Zeller 1993, Chambers 1994). Dollinger (2019: 13) notes that Newfoundland presents a unique set of varieties and has been studied exclusively by several scholars for whom it is their unique object of research. Walker (2015: 88-92) notes that consonant realisations and grammatical features of the varieties spoken in Newfoundland and Labrador differ from Standard CE.

varieties. Therefore, Chambers (2014: 62) argues that "CE descends from the Loyalist-American roots of the first wave of immigration". Nevertheless, scholars' opinions diverge on this point, and I will discuss in more detail the debate on the role of the second wave of immigration. In short, it can be noted that Bloomfield (1948: 61-64) and Avis (1954) support the Loyalist Theory which asserts that the American character of CE is due to the first wave of immigration, whereas Scargill (1957) argues that this theory gives too much weight to the Loyalists and does not take into account the widespread immigration from the British Isles.

In fact, when British speakers came to Canada, their English began to be perceived as a standard and influential variety because of the dominant position that British settlers held in society, particularly in the education system. Despite this, the British variety did not have a considerable impact on CE; the children born to British immigrants did not have the same accent as their parents and their speech resembled that of the Loyalists (Chambers 2010: 17). As demonstrated by Chambers with the example of the pronunciation of "leisure" (2014: 233-236), these features from BrE were to disappear from CE. In an apparent-time study, Chambers explains that at first the pronunciation of "leisure" in CE would rhyme either with "measure" (and follows the BrE model of the /ɛ/ variant) or with "seizure" (AmE with the /i:/ variant), but his results show a correlation between the age of the speakers and the decline of the British variant, during the last 70 years, suggesting a loss of British pronunciation in CE.

Even though they failed to establish their variety in Canada, British settlers were responsible for language attitudes that persist today. They convinced Canadians of the upper-class prestige of their variety, mostly spoken at the time by educated people. Thus, Chambers (1993) shows that BrE was considered to be superior, and all other dialects of English were perceived as inferior at the time. He calls this concept "Canadian Dainty" which he attributes to the fact that British settlers, from the 1850s to the 1950s, had a high esteem for their language which they associated with an upper-class variety, presented as the only proper way of speaking.

A consequence of these two first waves of immigration was this dual heritage of CE. Chambers explains that Canadians used features of AmE and BrE indifferently at that time (2014: 230), a phenomenon he calls the "Canadian double standard". Canadians generally tolerated both forms, despite the varying perceptions of the two, with American usage sometimes being perceived as improper and British usage as too pretentious. Nevertheless, this dual usage and acceptance of both forms is described as a predominant characteristic of CE.

However, this dual heritage is not without consequences for the development of the Canadian variety. This ambivalent status, as well as the negative effects it has had, is discussed in section 1.3.3.

1.2.3 Limited impact of further waves of immigration

Although they created a demographic boom and added to the ethnic diversity of the Canadian population, further waves of immigration have been said to have had a limited impact on CE (Dollinger 2019: 205). However, this assessment needs to be revisited given the findings of Hoffmann and Walker (2010). The two authors explore correlations between ethnicity and use of specific linguistic variants. This approach belongs to the third wave of sociolinguistics[6] in which researchers investigate further social meanings that may be indexed by linguistic variants. Hoffman and Walker measure the ethnic orientation of the speakers using a questionnaire to operationalise ethnicity as an independent variable, which allows them to investigate the role of ethnicity in using certain linguistic variants. For instance, Chinese speakers, particularly those with high ethnic orientation scores, which reflect a great pride and participation in their Chinese culture, do not participate in the shift, unlike first-generation Italians who retract /æ/ but whose participation in the shift is possibly attributed to their heritage language (Hoffman and Walker 2010: 53-55).

Their study is further detailed in section 2.1.2 dealing with the CVS, but it shows a nuanced interpretation of the impact different ethnic communities may have on CE.

1.3 The role of Canadian dictionaries in the emergence and codification of CE

This section first demonstrates the importance of the Canadian Linguistic Association in the establishment of the variety, then it emphasises the role of dictionaries and the difficulties in compiling such work in order to start the codification of CE, and finishes by presenting the major dictionaries of CE.

According to Bailey, "languages declare their independence by creating dictionaries." (2009: 279). Dictionaries are cultural resources which allow members of a community to recognise themselves as speakers of the same language. In the 19th century, there was a need expressed by the public to have reference books where they could find typically Canadian vocabulary.

The Canadian variety of English had difficulty emerging from under the shadow of U.S. domination. In the 19th century, reference books used in Canada, especially dictionaries,

[6] The third-wave approach to sociolinguistics is presented in Chapter 4, section 4.2.3.

presented CE as a variety of North American English. Dollinger (2019) underlines that linguists studying North American English were American, and they were facing difficulties in describing an independent Canadian variety. Indeed, as he observes, CE was barely mentioned in American dictionaries: "Including Canadian material in an American dictionary was a poor choice in hindsight", which did not allow CE to be recognised as a distinct variety (2019: 40). Some dictionaries and glossaries existed but they were non-scholarly works, or they were American dictionaries adapted for the Canadian market (e.g., the Wintson Simplified Dictionary for Canada 1937). Both Dollinger and Scargill attest that the preliminary work required to create a Canadian dictionary is overwhelming. Canadian lexicographers had to collect sources from the British and American varieties prior to the compilation of a dictionary to make accurate references. Dollinger writes: "Canadian lexicographers had more work to do" in order to compile a dictionary of their own (2019: 41). The same thought had been developed earlier by Scargill, who notes that "a definitive history of the English language of Canada is yet to be written, and few scholars would attempt to write it at present. The vast amount of preliminary work necessary for such a history has not been done" (1957: 12). Despite such difficulties, Sandilands made an inventory of phrases used in Canada and assumed they were different from BrE but they could have possibly been AmE forms. He collected an impressive list of 853 terms and published the *Western Canadian Dictionary and Phrasebook: Picturesque Language of the Cowboy and the Broncho-Buster* (1912) Even though it was not a formal scholarly work, it is considered to be the first dictionary of CE. In the second edition in 1913, he collected 1500 terms. His work represents the first effort to codify some regional forms in CE.

The codification process of English in Canada which started in the late 1950s through the 1960s, occurred simultaneously with the growing nationalist movements which date back to the post-World War II period (Chambers 1998a: 270). Even though CE still had a dual status, studies of CE examining specific Canadian features began to be carried out with the aim of investigating: "a small but significant set of features that are uniquely Canadian." (Boberg 2000: 355).

A fundamental change in the codification of CE came about with the founding of the Canadian Linguistic Association in 1954, when, for the first time, CE became an independent object of study. In the course of its development, the Canadian Linguistic Association aimed at providing a dictionary for Canadians and to offer descriptions of the variety of English spoken in Canada. In 1955, the Association founded its own journal, *the Canadian Journal of Linguistics,* and started publishing research findings. It also established a Lexicographical

Committee in order to create a future dictionary and to tackle lexical issues. The Canadian Linguistic Association organised conferences at which issues about the variety were discussed, including the 1985 conference at Queen's University in Kingston, Ontario, under the theme "In search of the Standard in CE" which aimed at defining and describing English spoken in Canada. Such a thing had not been attempted before.

In 1956, the Lexicographical Committee planned to prepare three types of dictionaries: a series of dictionaries for use in schools and universities; a historical dictionary of the English language in Canada; and a Dictionary of Canadianisms (Scargill 1967: vi). This project turned out to be more difficult than initially envisaged. The Gage publishing house in Toronto agreed to publish the dictionary of Canadianisms, which was edited by Lovell (Avis 1967), an American lexicographer. Indeed, Lovell played an active role in the first steps of this project of codifying CE lexically. He noted the importance of the Canada–US border and collected Canadianisms while hiking in Canada (Dollinger 2019: 57-58). Lovell was the first linguist to offer to compile a Canadian dictionary; the Dictionary of Canadianisms was his idea. Dollinger (2019: 60) cites Lovell's daughter: "[Lovell] is off to Toronto to give a talk at the Canadian Linguistic Association conference where he will once again promote his project: a Canadian dictionary based on historical principles" (B. Lovell 2011: 97). Although he passed away two years after he began working on the Dictionary of Canadianisms (1962), his contribution was highly significant in establishing CE as a separate variety (Dollinger 2019: 63). Scargill and Avis took over after Lovell's demise, and the Dictionary of Canadianisms was published in 1967. It was renamed the *Dictionary of Canadianisms on Historical Principles* (DCHP-1) in its revised version and contains 10,974 entries. The online version of the DCHP-1 is based on the first edition of this dictionary.

In parallel, in the 1960s, CE began to capture public interest and Canadians started to express a desire to use their own variety of English (Schneider 2007: 245). Linguistically, CE became associated with identity claims (Boberg 2004a: 355).

Following the publication of the DC, in the 1970s and 1980s, a Toronto publishing house published the Gage dictionary series which comprised three dictionaries: *The Beginning Dictionary* (20 000 entries) (Avis 1962), *The Intermediate Dictionary* (64 000 entries) (Scargill 1963) and *The Advanced Dictionary* (90 000 entries) (Gregg 1967). This series was revised and republished under different names. *The Beginning Dictionary* was published in 1977 under the title the *Canadian Junior Dictionary*, and again in 1985, the *Gage Junior Dictionary*. *The Intermediate Dictionary* was published in 1979 as the *Canadian Intermediate Dictionary*, and *The Advanced Dictionary* was republished three times: first as the *Gage Canadian Dictionary*

(1973), then as the *Canadian Senior Dictionary* (1979) and finally again as the *Gage Canadian Dictionary* in 1983. The Gage identifies origins of words and ensures that the Canadian forms are thoroughly presented, and it is considered to be a reliable Canadian reference book.

A new generation of dictionaries appeared in the 1990s; this period is qualified as the "Canadian dictionary war." (Dollinger 2020: 7), since all publishing houses produced similar dictionaries. The *Penguin Canadian Dictionary* (Paikeday 1990) was the first general dictionary composed exclusively from Canadian corpus data. It includes 75 000 entries. Gage published and reedited a number of dictionaries, and during the same period, the ITP Nelson Canadian Dictionary of the English Language (1997) was published, with 150 000 entries. Thereafter, another significant contribution to the codification of CE is the publication of the *Canadian Oxford Dictionary*, which was first published in 1998, and reedited in 2004. As chief editor Katherine Barber notes, the *Canadian Oxford Dictionary*, based on written corpora and featuring the most familiar definition of a term for Canadians as the first entry, is composed of 2200 Canadian words and 500 regionalisms. Barber observes: "it is based on thorough research into the language: five years of work by five Canadian lexicographers examining almost twenty million words of Canadian text held in databases representing over 8,000 different Canadian publications" (Barber 1998: viii preface). Unlike other dictionaries, the *Canadian Oxford Dictionary* is compiled from current research on CE, rather than from U.S. or British sources. According to Barber, dictionaries help Canadians become aware of the differences between their variety and other varieties of English. She goes further and states: "the Canadian public embrace the dictionary enthusiastically […]. [F]or them the dictionary was tangible proof that Canadians are a distinct people, no longer subjugated to the dominant powers of Britain and the United States." (2001: 285). Barber's statement is later confirmed by Boberg (2010: 40), who notes that the Gage dictionary series and the *Canadian Oxford Dictionary* have helped legitimise CE as an independent variety, in an attempt to codify spelling, usage and grammar of CE.

The second edition of the Dictionary of Canadianisms was later published online and added 1002 entries to the DCHP-2 (Dollinger and Fee 2017). While Avis (1967) defines Canadianisms as words that originated in Canada and words whose meaning is "distinctively characteristic of Canadian usage" (1967: xiii), he does not give a precise definition of such words, and Dollinger and Fee (2017) suggest that comparative work is required to be able to know whether a word is an actual Canadianism or not. Contrary to Avis (1967), Dollinger and Fee give definitions and examples of six types of Canadianisms in the introduction to the DCHP-2. In type 1 category, readers find neologisms: words and meanings that were created

in what is now Canada (e.g., a *parkade*[7]). In type 2 category, they find words that are preserved and mostly used in Canada, while they were frequent in other English varieties (e.g., a *pencil crayon*[8]), and in type 3 category are found words that have undergone semantic change in CE (e.g., a *touque*[9] [sic]). Type 4 category includes words that are central to Canadian culture and identity, either referring to daily life (e.g., *universal healthcare*) or concerning ice hockey (e.g., a *wraparound*[10]). Type 5 category contains words which are used more frequently by Canadians than other English speakers, according to the Frequency Index, which determines a word use in the world using internet (e.g., *to table something* which means *to bring forward* in CE, while it means *to postpone* in other English varieties). Finally, in type 6 category, readers can discover words that are related to negative episodes of Canada's history and culture (e.g., a *residential school*[11]). Terms can be classified in more than one category, but there is usually one prevalent category (e.g., pencil crayon is both type 2 and 5) (2015: 6). The DCHP still remains the most reliable source of historical information for Canadians (Dollinger 2016: 599). In September 2020, the Ontario Dialects Project (Tagliamonte 2002-), enabled the addition of several words in the COD[12]. Research in lexical variation directly helps documenting Canadian vocabulary. In the following section, I shift the focus to Canadian regional dictionaries.

1.3.1 Regional Canadian dictionaries

There are only three regional scholarly dictionaries of CE: the *Dictionary of Newfoundland English* (1982), the *Dictionary of Prince Edward Island English* (1988), and the *Dictionary of Cape Breton English* (2016). Each of these dictionaries documents a variety of Canadian English spoken on a Canadian island.

The *Dictionary of Newfoundland English* (Story et al. 1982) is an influential work on Newfoundland English. It contributes to the lexical description of this variety and preserves Newfoundland culture. It does not present words that are common in all English varieties. Rather, it gives the meaning of words as well as their various spellings and explains how the words have evolved and how they would be used in Newfoundland. Its second edition (1990) contains a supplement of about 1500 words, adding new meanings and usages from the first edition.

[7] "A parking garage, a multi-storey building for parking cars" (Barber 2008: 246).
[8] A coloured pencil.
[9] "A close-fitting knitted hat, often with a tassel or pompom on the crown" or a "long knitted stocking cap" (Barber 2008:107).
[10] "A hockey move trying to score from behind the net" (Dollinger 2019: 123).
[11] See footnote 1.
[12] https://www.oed.com/discover/the-ontario-dialects-project-and-canadian-english-in-the-oed?tl=true

The *Dictionary of Prince Edward Island English* (Pratt 1988) is an essential work which provides remarks on pronunciation and spelling and contains 1000 entries which include definitions and reference quotations from Prince Edward Island sources, as well as references to the history and life in the province.

The *Dictionary of Cape Breton English* (Davey and MacKinnon 2016) is the first dictionary of the study of the vocabulary of Cape Breton Island. This regional dictionary used interviews with Cape Bretoners to record the island's linguistic identity, its vocabulary, spelling and aspects of its pronunciation. It also documents aspects of Cape Breton culture.

1.3.2 Canadian spelling conventions

In his survey of Canadian spelling conventions, Pratt (1993: 45-64) states that CE shares some norms with BrE and some with AmE, noting as well that there is some variation according to the region and the type of publication. For instance, "analyse" and "analyze" coexist, and "colour" (BrE form) can be followed by "favor" (AmE) in the same text.

About 20 years later, Boberg (2010: 40) confirms Pratt's findings and qualifies Canadian spelling as "a compromise" because it is still a mixed system. Even if some usage guides have been published (see section 2.4), there remains an ambivalent situation regarding spelling in Canada. CE spelling features are further detailed in section 2.4.

1.3.3 The ambivalent status of Canadian English

The lack of homogenous standardisation in orthography, and a lack of evidence of predominant features may lead to criticism and doubts about the existence of CE as a distinct variety. However, Dollinger (2019: 233) reports that "not everybody may be sufficiently alert to notice [the systematic differences], but they are a fact". This section retraces the first appearance of CE and focuses on a few events that may have slowed down its codification.

The first account of CE was made by Reverend Constable Geikie, a Scottish immigrant, in his discourse for the Canadian Institute (1857). He qualified CE as "a corrupt dialect", influenced by American innovations, in comparison to the prestigious British variety of English that he presents as the norm. Therefore, CE was first characterised negatively and developed through criticism about its legitimacy.

Linguistically, CE has been impacted by the influence of the two endonormative models (BrE and AmE). Because of this dual heritage, CE is often presented as a hybrid form of these two models, thus reinforcing the myth of its existence. Bloomfield (1948: 63) presents CE as a regional dialect of General American, but what he qualifies as General American remains

unclear. Later, Woods (1993) notes that Canadians should use other means than language to establish an identity because their variety is too close to the BrE and AmE varieties. This leads scholars such as Boberg to describe CE as a "standard Southern British superstratum […] imposed on a North American variety" (2004a: 355) or Trudgill to qualify CE as "a mixed dialect par excellence" (2006: 272). Furthermore, Bednarek underlines that Canada's multicultural culture "gives way for doubt" (2009: 2) in the recognition of CE, since Canada is the product of immigration as shown in section 1.1, it is more difficult to affirm a variety representing several ethnicities. I further develop the complex notion of Canadian identity in Chapter 3.

While CE is at present established, in 2000, scholars still doubt its existence. Lilles (2000), an Ontarian English Literature master's student published an article in *English Today*, a public audience journal entitled "the myth of Canadian English", in which he shows his doubts about the existence of CE. However, this article was criticised because Lilles does not use any data to support his position (Dollinger 2019: 225).

A standardised language needs the support of institutions: through education, the media and the government (Bednarek 2009: 105-106), and CE does not seem to be affirmed in schools or through the media. Education plays a key role in establishing the variety since it broadens and deepens the understanding of the language for young Canadians. However, Dollinger (2019) criticises the role of education since, according to him, this role is not assumed in schools in Canada. He notes that CE is not taught in high school and barely taught at university. Canadians are left to use both AmE and BrE (2019: 220).

Furthermore, in the media CE has always been presented as a novelty or as being weird. This phenomenon is termed the Groundhog Day Loop by Dollinger (2011, 2019: 221-226). He explains that CE has continuously been described as a new thing or that the variety has been presented as "weird" or "artificial" frequently by the press. The Canadian variety is questioned in 1957 by the *Edmonton Journal*, with the headline "A Canadian Language?", and again in 2000 by the *National Post*: "We may speak English, but have we found our voice?"). In addition, some newspapers have highlighted the "weirdness of CE". *Globe and Mail* (1979) stated that: "Canadian English is haphazard enough" and *Harbour City Star* (2007) (Nanaimo): "Only people fluent in Canadian would understand if you told them to put on a toque and dump a two-four of empties into their blue bin". Finally, some newspapers turned to specificities of the Canadian variety from 2005 onwards: *Ottawa Citizen* (2012): "Canadians change the way they say A, eh?", *Globe and Mail* (2017) "Canadianisms dictionary is 'tabled' and 'alldressed': New edition for the country's sesquicentennial owes some thanks to Austrians".

However, Bednarek (2009: 106) argues that: “the Canadian government continues to suggest that television and newspapers need to focus on the Canadian character in the sense of both the stories they present and much importantly on the language they use”. In more recent years, Dollinger (2019: 191) deplores that Canadians do not have better tools to access their language. Similarly, to date, there are only three regional dictionaries in Canada, while other regional dictionaries could be published for other provincial varieties of CE.

This chapter provided a brief overview of Canada’s foundation and development and insisted on the importance of the different waves of immigration in the formation of CE. It has demonstrated the slow process of codification of CE through the development of national, regional dictionaries and spelling reference guides, despite its ambivalent status. I have noted how awareness of a distinct Canadian variety took a considerable amount of time to emerge because it was overshadowed by British and American varieties. Yet, this hybrid status which emerged from Canada’s history also contributes to its uniqueness, as this is what I show in Chapter 2, which presents the features of CE.

Chapter 2 Characteristics of Canadian English

Following the overview in Chapter 1, showing how CE developed and was first established and codified, the present chapter offers a description of the characteristics of CE, providing a synchronic description of its phonetic, lexical, grammatical, and spelling features based on the findings of several important studies, with a view to synthesising the current state of knowledge in the area and identifying gaps in the research. A particular focus is placed on the two phonetic and phonological variables to be analysed in this study to determine the relationship between CE and the speech of Canadian hockey players: CR and the CVS. These variables have been identified as distinguishing CE from other English varieties, so they are particularly relevant for this study. Although CE has sometimes been considered homogeneous, this chapter reviews literature that demonstrates the considerable regional and social variation that can be observed in the ways English is spoken in Canada.

2.1 Phonological and phonetic characteristics

The focus in this section is on the segmental phonetics and phonology of CE which has been well documented. I begin by discussing the inventory of consonants and consonantal variation and then I present the inventory of CE vowels and their variation.

2.1.1 Consonants

In Table 2.1, I present the consonant inventory of CE, which does not differ from consonant inventories of other varieties of English. The first column gives the manner of articulation; the second indicates voicing, and the following columns give places of articulation, from front to back of the articulatory space, from left to right, from the front of the mouth to the glottis.

		bilabial	labio-dental	inter-dental	alveolar	palato-alveolar	palatal	velar	glottal
stop	voiceless	p			t			k	
	voiced	b			d			g	
fricative	voiceless		f	θ	s				h
	voiced		v	ð	z				
affricate	voiceless					ʧ			
	voiced					ʤ			
approximant		(w)			r			(w)	
nasal		m			n			ŋ	
lateral					l				

Table 2.1: Phonetic inventory of consonants of CE, adapted from Walker (2015: 79).

Although there are no major differences between the Canadian inventory and that of BrE and AmE, as I will show in this section, some phonemes vary in their phonetic realisation (Boberg 2010: 124).

/t/ and /d/ realisations

The phenomenon called "tapping" or "flapping" is the realisation of the coronal stops /t/ and /d/ as voiced alveolar flaps or taps [ɾ] in post tonic, intervocalic and post-rhotic contexts. It is found generally in North American varieties. Warkentyne (1971: 195) reports that 60% of younger speakers claim to use flapped /t/ compared to 40% of older speakers, which would suggest a change in progress in the direction of a higher frequency of flapped /t/ observable in apparent time, but one must be aware that these answers were self-reported in questionnaires, so they only reflect what speakers say they use. Gregg (1957: 25) attests to how generalised these pronunciations are, observing that in Vancouver, speakers do not report any difference in pronunciation between "matter" and "madder". However, to my knowledge, there is a lack of corpus-based studies on this variable.

/l/ realisation

In CE, /l/ is realised as dark or velarised /ɬ/ in all positions as in AmE, or more generally in North American varieties (Wells 1982). However, Josselin-Leray et al. (2015: 430) observe in their corpus that some Canadian speakers have a clear /l/ in onset positions and dark /ɬ/ in coda positions. More analyses of speech data are needed to arrive at a full account of /l/ realisation in CE.

Rhoticity

According to Boberg (2010: 131), rhoticity (r-fulness) is defined as: "the most salient difference in phonemic incidence among varieties of English: the presence or absence of non-prevocalic or coda /r/". CE is a rhotic variety which means /r/ is realised as the alveolar approximant /ɹ/ and is pronounced in all environments. Boberg (2010: 131) notes that this is similar to the realisation of the consonant in rhotic varieties of AmE, with no /r/ deletion in popular speech (except in very few enclaves). In North American varieties, the /r/ phoneme is generally realised as retroflex [ɻ], although there are few acoustic studies of the realisation of this consonant in CE (Josselin-Leray et al. 2015: 430). Brulard et al. (2015: 430-431) indeed note that few scholars have studied the quality of the consonant, which is often generally categorised as 'ɹ' at phonemic and phonetic levels.

The conditioned merger of /ju:/ and /u:/ after coronals

In Canada, the phenomenon called "yod-dropping" occurs in the sequence /Cju/. In this sequence, the yod can be dropped, and the sequence /Cj/ can be palatalised (Glain 2013: 99–103). This ongoing variation is attested across Canada (Nylvek 1992: 273–275) in Saskatchewan; Chambers (1998b: 235–244) in the greater Toronto area; Woods (1991: 140–141, 1993: 158–159, 1999: 93–96) in Ottawa; Clarke (2011) in St. John's Newfoundland; and Scargill and Warkentyne (1972: 51–52) across Canada). After /t/ and /d/, another phenomenon known as "yod coalescence" can occur: some speakers combine the yod and the stop to [tʃ] or [dʒ] (Walker 2015: 79-80).

No consensus has been reached on the use of these variants, which leads to the conservative glided variant and the glideless variant (e.g., student: /ˈstjudənt/ and /ˈstudənt/) being both reported to be used (Woods 1999). Indeed, according to Pringle (1985: 190): "one shibboleth of pronunciation" is used by Canadians to differentiate from Americans, and that is the glide retention. Clarke (1993: 87) aligns with Pringle and notes that it is a "salient marker of Canadian linguistic identity". On the other hand, later, Chambers (1998b: 242) reports that the innovative glideless variant has become the norm, and that both variants have merged, which appears to be a change towards a more American pronunciation.

In addition, a fresh approach to palatal glide usage under the third wave of variationist sociolinguistics demonstrates that the existence of the two variants is more intricately connected to social meaning than to the influence of BrE or AmE (Clarke 2011). Canadian speakers use the glided variant to express cultural erudition and education, and the glideless variant to sound more casual (see Chapter 4, section 4.2.3).

Regarding the perceptual perspective on the variable, Owens and Baker's (1984) study demonstrates that the glided pronunciation was seen as more correct in Canada. Findings confirmed by Clarke (2011: 234) show that the glided variant still carries prestige.

Voiced [w] and voiceless [ʍ] alternation

The contrast between voiced and voiceless variants, [w] or [ʍ] and [hw] in pairs like *wine* and *whine*, is a change over time (glide cluster reduction) which occurs in the majority of English dialects (Boberg 2010: 124-125). In Canada, the merger seems to be near completion. Avis (1956: 53) demonstrates that these two phonemes are slowly merging. Orkin (1970: 139) notes that retention of voiceless /ʍ/ is observed only in Ontario. Later studies (Woods 1999: 138) show no retention of the contrast, the two phonemes having merged in CE. Chambers' analysis of data (1994) from *The Dialect Topography Project* (1994) highlights that the distinction is disappearing in apparent time, as younger speakers report making no distinction between the two consonants. These findings provide further evidence that voiced [w] and voiceless [ʍ] have merged in CE.

The interdental consonants

Interdental fricatives are generally realised as voiced [ð] and voiceless [θ] but their realisations also vary. A stop [d] for /ð/ "especially in function words" can be found in more casual speech, and this variation can correlate with sociolinguistic factors such as rural and urban speech, ethnicity, and class (Walker 2015: 78). Variation in these consonants does not distinguish CE from other varieties in any significant way, but in particular varieties, such as Toronto Haitian English (Lacoste, 2015), more variation can be observed.

2.1.2 Vowels

After outlining the consonantal features of CE, this section now turns to Canadian vowels, Table 2.2 indicates the phonemic inventory of CE vowels.

	Short		Long		
	front	back	front	central	back
high	ɪ	ʊ	i		u
mid	ɛ	ʌ	e		o
low	æ				ɑ
diphthong			aɪ	ɔɪ	aʊ

Table 2.2: Phonemic inventory of CE vowels, from Walker (2015: 81) adapted from Wells (1982).

However, in Walker's description of the phonemic inventory of CE vowels, it is surprising that the NURSE lexical set /ɚ/ is not represented, nor is the schwa vowel.

Vowels can have a multitude of phonetic realisations which are observable in vowel formant measurements relating to vowel height and advancement. The first formant (F1) represents the height of the tongue, and the second formant (F2) represents the frontness/backness of the tongue. Lower F1 values indicate a higher tongue position; inversely higher F1 values correlate with a lower tongue position. As regards F2, higher values indicate a more forward tongue position, whereas lower F2 values indicate a more backed tongue position.

Vowels occupy an area of the vowel space rather than being discrete points (Walker 2015: 80) and they can be subject to considerable variation and change, and contrasts between vowels are a particularly significant factor in distinguishing varieties of English (e.g., the TRAP/BATH split). To quote Walker, "the phonemics of vowel systems serve to distinguish among varieties of English" (2015: 80).

Much more than consonants and glides, vowels in CE exhibit systematic social and stylistic variation in their phonetic realisation (Boberg 2010: 124). The focus of this section is on vocalic phenomena in CE with particular attention to the low-back merger, the CVS, CR and the new phoneme "foreign (a)", variables that differentiate CE from other varieties of English.

Low back merger

The term "low-back merger", also called the "cot-caught merger", refers to a loss of the phonemic distinction between the /ɒ/ LOT and /ɔː/ THOUGHT vowels, with both of them being realised phonetically as [ɑ]. The "low-back merger" was first attested in the middle of the 19th century in Ontario English (Joos 1942: 141). It has also been attested in Vancouver (Gregg 1957: 21-22) and Saskatchewan (Lehn 1959: 93) based on evidence that respondents use spellings in responses in written questionnaires that imply the existence of this merger.

This merger is considered to be complete in CE, which means that LOT and THOUGHT are pronounced indistinctively by Canadians (Wells 1982: 491). Although it is common to both Standard CE and Standard AmE (Boberg 2010: 127-128), the low-back merger varies considerably in certain regions of the U.S. while it is considered a characteristic of CE as a whole (Labov et al. 2006: 218). The low-back merger creates space for other vowels in the system to shift, and indeed triggers the CVS.

The Canadian Vowel Shift

The CVS, a change that implicates short front vowels, is characterised as a "defining feature" of CE (Boberg 2008, 2010). It is "a lowering and retraction of the front short vowels", TRAP, DRESS and KIT that distinguishes the Canadian variety from other varieties of English

(Boberg 2008: 146). The CVS was first described by Clarke, Elms et Youssef (1995), who gave the initial evidence of a shift in the front-lax Canadian vowel subsystem based on data from young middle-class Ontarians' speech. Although their results are exclusively drawn from impressionistic data, this first description demonstrates the coordinated movements of lowering and retraction of /ɪ/ KIT and /ɛ/ DRESS (higher F1/lower F2), the retraction of /æ/ TRAP (lower F2), along with the lowering of LOT and THOUGHT. According to Clarke et al. (1995), the CVS is a chain shift, a phonetic consequence of the low-back merger, and a similar explanation of the directions of the shift can be found later in Boberg (2019: 92). The trajectories of the shift can be observed in Figure 2.1, in which numbers represent the different presumed phases of the shift. The movement associated with the low-back merger creates space in the vowel system (1) and triggers the shift of the front lax vowels, so TRAP can retract (2) (becoming a more central vowel)[13], thus creating a space for DRESS to retract and lower (3), then triggering the downward movement of KIT (4).

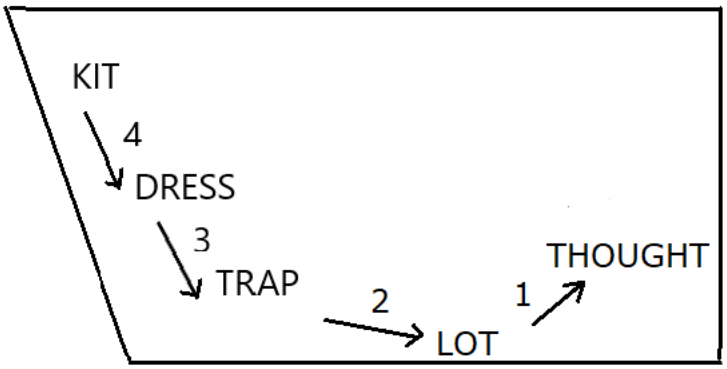

Figure 2.1: Trajectories of the CVS triggered by the low-back merger, adapted from Boberg (2019: 93).

The CVS has been widely described since evidence of it was first attested, but Clarke et al. (1995) could not determine whether the change was in progress or static because their sample only includes younger speakers. Later studies have investigated apparent-time data, suggesting that the CSV is an ongoing change (Boberg 2005, Labov et al. 2006: 220-221). Labov et al.'s study also attests that the shift is active in inland Canada and variably present in the Atlantic Provinces (2006: 221). Their results are based on Canada-wide data from *the Atlas of North American English* (ANAE)[14], and they propose an acoustic definition of shifted vowels in terms of a speaker's normalised F1 and F2 means: F2 TRAP vowel<1825 Hz, F1 DRESS vowel>650 Hz, F2 THOUGHT<1275 Hz (Labov et al. 2006: 219). The KIT vowel, however, does not have

[13] The retraction of TRAP, considered as the first element of the shift, was first evidenced by Esling and Warkentyne (1993) in Vancouver English.
[14] A description of the ANAE is provided in Chapter 2, section 2.3.2.

a well-defined benchmark since Labov et al. (2006) found that KIT was not undergoing the change. These benchmarks provide a basis for primary regional isoglosses for Canadian Shift pronunciations.

As demonstrated by Labov et al. (2006), the CVS is attested in a number of cities across Canada. It is active in Toronto (Hoffman 2010: 131, Roeder and Jarmasz 2010: 392), and Boberg (2005) and Kettig and Winter (2017) attest to its presence in Montreal, a city which was not included in Labov et al. (2006). The CVS is also shown to be active in Victoria (Roeder, Onosson and D'Arcy 2018: 98). Moreover, some studies compare the presence of the shift in different Canadian cities. Sadlier-Brown and Tamminga (2008) compare the shift in cities situated in the west (Vancouver) and on the east (Halifax) coasts of Canada, revealing only minor differences between the two cities, although these cities are 4,000 miles apart. In the same vein, Roeder (2012) investigates the CVS in both Toronto and Thunder Bay, comparing the most populous city in Canada, the capital of Ontario, to a middle-sized city in Northwestern Ontario, isolated from other cities and concludes that the shift is active in both cities.

Despite the established presence of the CVS in Canada, and the fact that it occurs uniformly in several Canadian cities, there is a lack of consensus with respect to which vowels are shifting and in which direction. The ANAE (Atlas of North American English) data (2006) attest the retraction of merged /ɔ/, followed by the retraction of TRAP, and finally the lowering and retraction (in a diagonal movement) of DRESS into the space vacated by TRAP. They also point out that KIT does not shift. Contrary to Clarke et al. (1995), Boberg (2005) describes the CVS as a set of retractions with no lowering. He finds evidence of DRESS shifting, but states that KIT is no longer being shifted by Montreal speakers. Kettig and Winter (2017) also study the CVS in Montreal and investigate how the shift has changed in Montreal since Boberg's (2005) study. They find statistically significant results that are consistent with Boberg's findings for the lowering and retraction of DRESS, and the retraction of TRAP. Kettig and Winter suggest that the CVS is still active in Montreal. Roeder and Jarmasz (2010) find in Toronto that the main direction of the shift is retraction, a position that is consistent with Boberg's (2005) findings in Montreal. In 2008, Boberg concludes that undergraduate students from the Prairies and Quebec display the least shifted DRESS vowel (2008: 137). Roeder and Jarmasz find strong retraction of both DRESS and TRAP. Roeder and Jarmasz (2010) also report the diachronic stability of KIT. In their description of the shift in Victoria, Roeder, Onosson et D'Arcy (2018) agree with previous studies that the shift can mostly be described in terms of retractions (Hoffman 2010, Boberg 2005). They show that the DRESS vowel is in a stage of retraction, after undergoing significant lowering, and that TRAP retraction is still

active. Based on these observations, they conclude that Victoria seems to be in an earlier stage of the CVS than other cities. While the diachronic stability of KIT is evidenced by some studies (Labov et al. 2006, Roeder and Jarmasz (2010), Sadlier-Brown and Tamminga (2008), who compare the shift in Vancouver and Halifax, demonstrate that KIT and DRESS are retracting and lowering in both cities, while TRAP is just retracting in Vancouver but TRAP is both retracting and lowering in Halifax. In a more recent study, Boberg (2019) acknowledges the existence of a "currently in progress vocalic chain shift" (2019: 92). He notes the lowering and retraction of the vowels away from the high front corner (2019:110). In this study, Boberg considers vowels that were not initially part of the shift while providing a more in-depth analysis (2019: 95). He demonstrates a relation between the vowels involved in the shift and back vowels (FOOT, GOAT, STRUT) but his conclusions show that there are no direct correlations, and that the shift is not a uniform process. Different results are found by Onosson, Rosen and Li (2019) since they demonstrate that Winnipeggers, who have been shown in earlier studies not to participate in the shift, have now begun to reach the benchmark of shifted vowels (2019: 371). This literature review shows that there exist some discrepancies concerning the main direction of the CVS, as well as discussion regarding whether or not the KIT vowel is involved in the shift. Some of the inconsistencies between different descriptions may represent distinct phases of the CVS, with different degrees of retraction and lowering of the vowels.

Studies have also considered the role of social factors in the advancement of the shift in Canada. First, all studies show that the shift is significantly correlated with age. Clarke et al. (1995) observe that the shift is more advanced among younger than older speakers. Boberg's results (2005) reveal that younger speakers realise more shifted vowels than older speakers in Montreal, and the same findings are observed in Montreal years later (Kettig and Winter 2017). Sadlier-Brown and Tamminga (2008) show that younger speakers produce lower vowels than older speakers in both Vancouver and Halifax. In Toronto, Hoffman (2010) observes the same results, demonstrating that younger speakers realise lower and more retracted DRESS vowels, which she describes as a more advanced status of DRESS retraction (2010: 134). She concludes that younger speakers are leaders of retraction, a result that confirms an apparent time change with significant differences between older (52-80 years old) and younger (17-27 years old) speakers. In their study in Victoria, Roeder, Onosson et D'Arcy (2018) also find that younger speakers use shifted vowels whereas older speakers use more conservative forms.

The shift was also demonstrated to be conditioned by gender in Canada, from the moment it was first described. Women are presented as leading the change by Clarke et al. (1995). Hoffman (2010) also shows that women lead the CVS, with the TRAP vowel being the one that

women lower and retract the most. The same results are found in the Chinese and Italian communities in Toronto, in which the conditioning of gender is not very strong, but women favour the shift of both DRESS and TRAP, no matter what community they are from (Hoffman and Walker 2010: 56). In Montreal, Kettig and Winter (2017) find the same evidence: gender is a significant factor in conditioning the shift. While younger women retract the TRAP and DRESS vowels and lower DRESS, men retain unshifted variants. This is consistent with Labov's principle (1990: 205-206) which suggests that women tend to have a higher frequency of innovative forms than men when a change is in progress. Boberg's results (2019) are consistent with those of the aforementioned studies, showing a correlation between speaker gender and the degree of participation in the shift, with women shifting more than men. Boberg goes so far as to say that the CVS is a "female pattern", since no study finds a counterexample of men leading the shift of any of the vowels involved in the CVS (2019: 113).

The CVS has also been shown to be correlated with ethnicity. While Boberg (2005) reports no significant effects of this factor on the CVS in Montreal English, Hoffman and Walker (2010) find a different result in their study of the variable in the English of Chinese and Italian communities in Toronto. Their study uses a questionnaire to measure speakers' self-perception of their ethnicity and how they choose to express their identity. Based on their responses, an ethnic orientation score is calculated. A high ethnic orientation score means they use the language of the community, they are involved in communal activities, and have strong social networks within the community. In brief, their study shows that first-, second- and third-generation Chinese Torontonians have higher ethnic orientation scores than Italians. Unlike Italians who participate in the CVS, all Chinese Torontonian participants disfavour TRAP-shifting, and Chinese Torontonian participants, particularly those with high ethnic orientation scores, also disfavour DRESS-shifting. A similar investigation was conducted in the Filipino community in Winnipeg, comparing their realisations to those of "Anglo" Winnipeggers (Onosson, Rosen and Li 2019). Onosson, Rosen and Li's findings reveal that Filipino speakers participate in the shift, with lower vowels overall, and more retraction in their DRESS and KIT vowels (2019: 369-370). The Filipino community has more advanced shifted vowels compared to the "Anglo" group**.** According to the authors, this result suggests that Filipino speakers are more likely to follow national rather than local trends as regards the CVS.

Although the CVS is observed to be complete only in Canada (Labov et al. 2006: 221), the initial stages of a shift are attested in several parts of the U.S. For instance, across the American West (Becker et al. 2016, McLarty et al. 2016), in the Midwest (Bigham 2010; Durian 2012; Strelluf 2014), and in California (Eckert 2008, Podesva 2011).

It should be noted that the CVS is a shift in the opposite direction in vowel space from the Northern Cities Shift, which is a five-stage pull shift triggered by tensing/raising of /æ/, which occurs in the Inland and Great Lakes regions (Labov et al. 2006: 220).

In a recent study, Boberg (2019: 93) questions the attribution of the shift to Canada and prefers to refer to the phenomenon using a term which does not imply that it is restricted to a geographical area: "Short Front Vowel Shift". While I agree that the term "Short Front Vowel Shift" is helpful in the description of the shift, in this thesis, I will still use the CVS designation to be consistent with most studies of the phenomenon in CE.

In conclusion, this section provided insights on the evolution of the shift. I have presented here some discrepancies in the research literature regarding the description and particularly the trajectories of the CVS. Findings of studies demonstrate that the CVS is a change in progress that is active throughout Canada, even though the stage of advancement of the change varies among the cities surveyed. The shift is clearly conditioned by regional and social factors, with women and younger speakers realising more shifted vowels overall. Roeder (2012: 490) suggests that additional research is needed on social factors, for instance to investigate "the influence of identity and about being local." Furthermore, the perception of the CVS in CE has not been studied yet, and even if this shift occurs below the level of consciousness, it seems important to investigate this other aspect of the shift.

Canadian Raising

CR can be defined as the raising of the nucleus of the diphthongs /ai/ PRICE and /au/ MOUTH when they are followed by voiceless obstruents, including flapped /t/ (e.g., in the word *writer*, where medial /t/ is pronounced [d] or [ɾ]), since it has been shown to function as a pre-voiceless context for CR (Gregg 2004: 42, Rosenfelder 2007: 19). Thus, the nucleus of the PRICE diphthong in words such as *life* and *type* undergoes raising from /a/ toward a more centralised vowel. The same phenomenon occurs for the MOUTH diphthong in words like *house* and *about.* In sociolinguistics, the following notations are used to describe the context of the diphthongs: /auT/ represents the pronunciation of the diphthong MOUTH followed by a voiceless consonant, /auD/ represents the pronunciation of the diphthong followed by a voiced consonant and /au/ represents the pronunciation of the diphthong MOUTH in all other environments. I use these notations throughout the dissertation and apply the same conventions to the PRICE diphthong: /aiT/ when the diphthong is followed by a voiceless consonant, /aiD/ when the diphthong is followed by a voiced consonant, /ai/ when the diphthong is in all other environments. I also use /auN/ and /aiN/ to represent the diphthongs MOUTH and PRICE when followed by a nasal.

Early research on the variable in Ontario (e.g., in Toronto or Kingston) shows that speakers tend to raise the diphthongs /au/ (MOUTH) and /ai/ (PRICE) in words such as *night, nice* and *out, about* and *house* (*A*hrend 1934: 136-138, Avis 1956). CR was later attested elsewhere in Canada (Gregg 1957: 23-24). CR was already present in the speech of speakers in Ontario in the 1880s, according to evidence documented by Thomas (1991: 162) who demonstrates that speakers in Ontario present a high degree of CR in both diphthongs, and does not find variation in pronunciation suggesting that CR has already been entrenched in the speech of these speakers.

Joos (1942) was the first to describe what would later be called CR. He refers to "high" and "low" diphthong variants as the vowels involved in CR; the "high" diphthong would now be described as the raised diphthong followed by a voiceless obstruent, while all other contexts would be considered as "low" (Joos 1942: 141). The term "Canadian Raising" was coined by Chambers (1973: 113), and this was the first time CR was attested in print (Chambers 1973: 86). Despite its name, CR is not exclusive to Canada. The Canada-US border is not an isogloss, and the phenomenon linguists are now accustomed to calling CR also occurs in the U.S. (Virginia and Martha's Vineyard are two places outside Canada where CR has been found (Chambers 1973: 130-134) (See below for further areas where CR is evidenced in the U.S.). Chambers wisely affirmed that "CR is not bound to a region; its name comes from the role it plays in Canada" (1973: 112). Indeed, Chambers notes CR's role was central in the definition of CE as distinct from other varieties of English. In the CR rule Chambers formulates, he notes that raising is blocked when the syllable containing the diphthong does not bear primary stress and is followed by a stressed syllable. The rule suggests that if the following syllable is stressed then raising is blocked (see rule (1)). However, CR is a more complex and variable phenomenon, and Chambers (1973: 127) suggests a blocking condition "[r]aising is blocked if and only if the low tense segment has non-primary stress and is followed by a stressed syllable" (revised CR rule (2)).

1. $[V\ +tense\ ]$ -> $[-\ low\ ]$ / ____ GLIDE $[C\ -\ voice\ ]$
2. CONDITIONING: (1) cannot apply if V < [I stress] and V'

= [+stress], where V' is the following nucleus.

CR has been examined within several leading phonological theories, including featural phonology (Chambers: 1973), rule-ordering (Picard: 1977), autosegmental phonology (Paradis: 1980), optimality theory (Myers: 1997) and, more recently, the exemplar model (Hall: 2007).

However, as the focus here is on sociolinguistic variation, a review of these theoretical accounts is beyond the scope of this dissertation.

Initial studies of CR were based solely on impressionistic analysis, but later technological developments allowed the vowels to be studied acoustically by measuring the frequencies of the first and second formants (F1 and F2). Labov et al. (2006: 205) present the following acoustic criterion: raising is defined as the difference between the raised, before voiceless consonants, and unraised nuclei of MOUTH and PRICE. This difference is expected to be greater than 60 Hz on the F1 dimension to be a raised diphthong (e.g., *house* vs. *cow*; *tight* vs. *tie*). After establishing this acoustic benchmark to determine if a diphthong is raised or not, Labov et al. (2006: 221-222) demonstrate that CR does not serve to distinguish the Canadian variety, as they highlight this variable is "not uniform enough to serve as a defining feature of the dialect." The ANAE shows that speakers from Alberta, Manitoba, Ontario and Saskatchewan raise both MOUTH and PRICE over the 60 Hz benchmark. However, only some speakers raise in Quebec and Nova Scotia according to the benchmark. Their results also show that speakers from Montreal and Vancouver raise the MOUTH diphthong, but they do not raise the PRICE diphthong, which excludes them from the CR isogloss established by the ANAE, explaining why Labov et al. (2006) do not report CR to occur uniformly across Canada.

Unlike the findings of the ANAE, Boberg (2008, 2010), who conducts a large-scale study across eight regions in Canada, and surveys 86 participants, finds that this traditional feature is still very much present in Canada, since the majority of Canadian provinces exhibit raising, except for the Atlantic Provinces (2008: 140). Although he notes there is variation in how consistently CR is used by Canadian speakers, 88% of his speakers realise a raised and unraised difference of 50 Hz or greater for the MOUTH diphthong, and 84% of the speakers realise this difference for the PRICE diphthong. Boberg suggests that the benchmark established by Labov et al. (2006) could be extended to greater values, as his speakers produce differences of 110 Hz between the raised and unraised contexts of PRICE, and of 142 Hz between these contexts for MOUTH. Moreover, Boberg investigates an environment which was not included in the ANAE, which is the difference between the nasal and the voiceless contexts. His speakers produce a difference of 85 Hz.

Boberg (2008) also reports findings on the phenomenon fronting (on the F2 dimension) which occurs in parallel to raising, and which is another component of CR. Fronting is a sound change in which the diphthong becomes fronted, which means it is pronounced further front in the vocal tract, with a higher F2. 92% of Boberg's (2008) speakers realise a difference between the raised and unraised environments on the F2 dimension, suggesting that there are some

correlations between raising and fronting. In Ontario, he shows that his speakers' F2 value of voiceless MOUTH contexts range from 1747 Hz to 1760 Hz. He shows that speakers from Southern Ontario produce a 176 Hz difference between the raised and unraised environments of MOUTH.

Since Joos (1942), CR has been broadly studied and analysed, and a considerable body of work by variationist sociolinguists has examined its regional and social variation in Canada. CR is considered to be a relatively stable variable in CE (Chambers 2006a, Boberg 2010: 228), being attested in Vancouver (Sadlier-Brown 2012, Swan 2017) and in Victoria (Rosenfelder 2007). The sociolinguistic aspects of CR came into focus in the 1980s, when CR is noted to be less common among younger speakers, who front the onsets of the MOUTH diphthong (Chambers and Hardwick 1986:33, Woods 1993, Hung, Davison and Chambers 1993, Rosenfelder 2007), while Chambers and Hardwick (1986: 28) refer to the raising of MOUTH as "the most identifiable trait of CE, and one that most readily distinguishes it from other varieties of North American English". Their results show that fronting is more frequent with unraised than with raised variants of the MOUTH diphthong, particularly among women speakers, in Toronto and Vancouver, suggesting a decline of CR (Chambers 1980, Chambers and Hardwick 1986: 41). A few years later, Chambers (1989: 82-83) describes a "tendency for front onsets to be low" among young speakers, suggesting initially the possibility that fronting could lead to the disappearance of raising in CE, and that this change in progress could indicate the Americanisation of CE.

Results of recent studies do not corroborate the findings of this early research on fronting. Studies have evidenced that raising and fronting are tightly correlated in CR and that these phenomena are occurring together (Thomas 2001: 55), but it has been shown that fronting is favoured in raised environments; the higher the diphthongs are raised, the more they are fronted. This is attested for the PRICE diphthong by Rosenfelder (2007: 21) and Boberg (2010: 149), and for the MOUTH diphthong by Sadlier-Brown (2012: 541).

Furthermore, unlike Chambers and Hardwick (1986) who report a decline of CR, Rosenfelder (2007) describes a new stability of CR in Victoria. She finds that the linguistic contexts which favour fronting are mostly obstruents and that fronting of the MOUTH diphthong extends to more contexts (Rosenfelder 2007: 272). Moreover, she suggests that significant correlations between the F2 of the PRICE diphthong, age and gender support the view that the change is in progress, with younger women speakers using more fronted onsets than older women, and women exhibiting more fronted diphthongs and extending fronting to more contexts than men (Rosenfelder 2007: 282). She does not find any correlation with social

factors for the MOUTH diphthong, but she evidences consistent high F2 values, suggesting that the MOUTH diphthong may have reached its highest degree of fronting ("the sound change in progress observed in the 1980s […] with fronting of the onset of this diphthong having become the norm" (Rosenfelder 2007: 282)). A robust apparent-time fronting tendency is also found by Sadlier-Brown (2012) who shows that fronting has developed in all the MOUTH environments and that the PRICE diphthong is following the same trend, as demonstrated by the apparent-time movement.

Sadlier-Brown's study reports a more homogenous picture of the variable, with no signs of weakening in apparent time, since Vancouver speakers participate in the shift for both diphthongs (2012: 542). However, before her study, CR was presented as a stable feature of CE, apart from Vancouver (Boberg 2008: 140, 2010: 228; Labov et al. 2006: 221). Her findings evidence that CR is a persistent feature, and Vancouver aligns with patterns found elsewhere in Canada (2012: 540) even if, as in previous studies on British Columbia English, Sadlier-Brown finds evidence of "weaker-raisers" and points to "hints of weakening" (2012: 540). She indeed notes a good deal of inter-speaker variation in both age groups studied, with no significant generational differences in frequency of CR.

As mentioned, when CR was first attested, raising of PRICE was evidenced outside Canada in American varieties. A number of studies have now demonstrated that CR evolves independently on each side of the border (Sadlier-Brown 2012, Swan 2017) with CE influencing the American varieties. As Rosenfelder (2007: 283) argues: "with respect to the phenomenon of raising, it would then be Canada that is influencing the United States linguistically, and not vice versa".

In her comparative study between a Canadian city (Vancouver) and an American city (Washington), Sadlier-Brown (2012: 545) suggests that Washington speakers exhibit differences between raised and unraised variants, differences that constitute evidence of raising on the U.S. side of the border, but the difference between these contexts is not as great as the one observed in Vancouver speakers. Swan (2017) investigates CR in Vancouver and Seattle. Her results attest that although Seattle speakers participate in CR, they do not participate to the same extent as Vancouver speakers do. She also demonstrates that the use of CR can be related to qualitative values such as the expression of Canadian identity for Vancouver speakers, which can also be interpreted as a way of differentiating one's speech from AmE.

Other studies have attested the presence of PRICE raising in New York City (NYC) (Vance 1987), Philadelphia, Pennsylvania (Fruehwald 2016), Indiana (Berkson, Davis, and Strickler 2017), Chicago, Illinois (Hualde, Luchkina, Eager 2017), amongst others. Moreover,

evidence of raising of the MOUTH diphthong has been observed in the Coastal South (Kurath and McDavid 1961), Martha's Vineyard (Labov 2006a), the Upper Midwest (Allen 1973), Detroit (Niedzielski 1995), Ann Arbor (Dailey-O'Cain 1997, who also studies degree of fronting of this diphthong), and in Eastern New England (Boberg 2008).

Another relevant aspect of the CR is its perception by non-specialists. Niedzielski (1997), in her perceptual study of both diphthongs of CR in the U.S., demonstrates that there is a certain awareness of CR in the MOUTH diphthong in the U.S. (1997: 85). She notes that when Americans are led to believe speakers they are listening to are Canadian, they hear raising, whereas they do not identify the raising if they are led to think the speakers are from Detroit (1997: 79). This finding suggests that Americans associate raising with the speech of Canadians and expect to hear it when they are listening to a Canadian. Nevertheless, Niedzielski (1997: 84) clarifies that she only uses one word, *night*, to investigate the perception of the PRICE diphthong, and her results, while not conclusive, appear to show a different effect from the MOUTH diphthong, which she concludes may be linked to the stereotype of this diphthong in the U.S. Additionally, even though Americans do not notice CR in the PRICE diphthong, which also occurs in the U.S. (Chambers 1989: 76), MOUTH raising is not widespread in the U.S., which may be a reason why it has become a stereotype in North America, with the phrase "oot and aboot" for "out and about".

In this section, I have shown that there is a substantial body of research on CR which gives insights and attests to the current state of raising and fronting Raising is a persistent feature of CR, and MOUTH fronting is near completion, but there is an ongoing change in the fronting of PRICE, observable in apparent time. Since studies have demonstrated that raising and fronting seem to be intrinsically linked, it is necessary to study both phenomena together. Moreover, studies do not report any significant decline of raising, and tend to show that fronting has continued to increase in CE. In the same vein, the two diphthongs involved in the shift must be studied separately to determine their distinct patterns of variation. However, it is clear from this review of the research that CR is certainly a distinctive characteristic of CE. Additionally, I have introduced some perception studies, on CE. a type of study that will be discussed in greater detail in Chapter 6.

Boberg (2008: 143) notes that the advancement of the vowel /ɑ/ before /ɹ/, which he represents with /ahr/, is a strong regional variable. In addition, the allophones of /æ/ before g or before nasals (Boberg 2008: 146-147) are characteristics of CE as they tend to be raised but exhibit regional variation. British Columbia and the Prairies evidence more raising before /g/

while in Ontario and the Maritimes the raising of /æ/ before nasals is more important. Nevertheless, raising of both allophones is considered to be a western Canadian feature.

Foreign (a) nativisation

Boberg (1997, 1999, 2000, 2009 and 2020) terms "foreign (a) nativisation" the variation in the pronunciation of the letter (a) in foreign and loan words with a stressed vowel (e.g., *lava, pasta, drama*). Boberg has studied this variable over time and has been interested in its regional and social variation as well as its progress in CE, in AmE and in BrE. His main results show that the nativisation of (a) in foreign words is a more variable process in CE than it is in AmE and BrE, yet the generally preferred pattern is /æ/ (TRAP) in CE and /ɑː/ (BATH) in AmE and BrE. Moreover, in 2020, using a larger data set than his 2000 study (a wordlist of 100 words compared to only 20 words in 2000), he found that younger Canadian speakers tend to use a third variant: the low-central [a], which questions CE "having three rather than two low vowels" (Boberg 2010: 139). In his conclusion, Boberg (2020: 377) underlines the social conditioning of the variable, and he carefully notes that this change could go in two opposite directions, favouring either the use of a specific CE variant by Canadians to further distinguish themselves, or the use of a variant that is closer to that used by Americans.

This raises the issue of a possible Americanisation of CE. However, Dollinger (2019: 169) points out that when Canadians seem to adopt forms used in AmE, they are not actually using these variants because they are American ways of speaking, but because they are associated with and convey certain social meanings. In 1970, Orkin already observed: "[w]hen a particular pronunciation is clearly identifiable as American, the majority of Canadians tend to shun it without hesitation" (1970: 124). This was later highlighted again by Boberg who believes that Canadians would likely choose other variants if they had the choice: "Canadians do not want to sound like Americans, so that when a variant is marked [+American] rather than, say, [+young] or [+trendy] it will not be readily transferred". (Boberg 2000: 23) This is also true for the merger of /juː/ and /uː/ after coronals presented above; Clarke (2011) argues that the yod-full variant is now associated with Canadianness. The nativisation of foreign (a) constitutes a difference between AmE, BrE and CE, as CE seems to develop its own specific features.

This section has presented CE consonant and vowel inventories as well as the main phonetic features of the variety, which mainly distinguishes itself from other varieties of English by its vowel realisations. Although it exhibits some regional and social variation, there are a number of features that are owned by Canadians, and a thorough review of the literature of its most representative vocalic features, the CVS and CR, was presented. To quote Wells

(1982: 491), the "combination of these features constitutes a reasonable diagnostic for distinguishing (most) Canadians from Americans".

2.2 Grammatical characteristics

A number of studies focus on what are perceived as being the grammatical characteristics of CE. Canadian sociolinguists Tagliamonte and D'Arcy and their research teams offer a Canadian perspective on grammatical variables in CE. The following subparts present: the discourse marker *eh*, the quotative form *be like*, *be done* NP, the expression of obligation and necessity with *have to*, the use of intensifiers and the alternation between the infinitival verb forms *try and* and *try to*.

Discourse marker *eh*

The Canadian discourse particle *eh* has been the focus of much research (Scargill and Warkentyne 1972, Gibson 1977, Gregg 2004, Gold 2005, Rodrigues da Mota and Herment 2016). A recent study by Gold and Tremblay (2006) shows that *eh* and its Canadian French counterpart *hein* function similarly as discourse markers but differently as identity markers. The authors use surveys to compare use and perception and their results reveal a fundamental difference in the perception of the two discourse markers. While *hein* is positively perceived overall (only 20% of the respondents judge it negatively), *eh* in narrative use in a written sentence (e.g., *This guy is up on the 27th floor, eh? then he gets out on the ledge, eh…*) is perceived negatively by many respondents (49%). In exclamations and expressions of opinions, it is perceived as "neutral" by the majority (56%), with negative comments from approximately a quarter of respondents (27%), and a positive perception by only 17% of the respondents. However, this seems to be paradoxical because the variant *eh* is associated with being Canadian (2006: 255), and is considered as a national marker, even an identity marker among Canadians. Gold and Tremblay conclude that *eh* is an identity construction that is used to diminish American influence (2006: 259). However, the authors find a quite different situation for Canadian French as European French does not influence the variety in the same way. As a result, the variant *hein* does not carry an identity meaning. This point is further examined in the section 3.4 on identity.

Quotative *be like*

Tagliamonte and D'Arcy (2004) investigate quotative strategies and quotative forms in Toronto youth English (e.g., *be like, say, think, go and Ø).* Their research emanates from the rise of quotative *be like* in all varieties of English, and particularly in AmE an BrE (2004: 120), as in the sentence *I was like, we should go there*. As regards the linguistic conditioning of the

quotative *be like*, the variant is favoured by first person present tense morphology and does not extend to the third person in CE. It is used in opinion discourse and seems to be slowly diffusing to several types of discourse (a change in progress). The authors note that *be like* is almost exclusively employed by younger speakers, with speakers in their thirties having a greater linguistic repertoire of quotative forms. However, the authors do not identify this feature as being specifically Canadian.

Be done + noun phrase

Yerastov noticed some occurrences of *be done* followed by a noun phrase in written data in CE (2012: 427-428). He designed a grammaticality judgement task to investigate the use of *be done, finished, started* using passages and sentences and Likert scales (2012: 436-437) and recruited undergraduate students in Calgary, hoping they would represent several provinces of Canada (2012: 436). His main result is that *be done* is a distinct construction in CE (Yerastov 2012: 455) as used in the following examples*: I am done dinner*, *I am finished my homework*. He identifies in CE the V-ING and NP can be coordinated (e.g., I looked at my life and thought, I could go to law school right away but then I thought most people, after they are done school and articling, they are 26 or 27).

The importance of the structure in CE has also been recognised by Hinnel (2012) who compares the use of *be done* and *be done with* on Canadian web blogs. She concludes that the main difference is a pragmatic one: be done is used by Canadians to describe an action which is complete and be done with is used to underline that the action is still in progress. However, this structure is also to be found in AmE, the main difference being according to Chambers (2014) that the structure is accepted more easily by Canadians.

Deontic modality

Deontic modality, which is the expression of obligation and necessity, has been studied in Toronto and three towns in southeastern Ontario: Burnt River, Lakefield and Belleville. Tagliamonte and Denis (2014) investigate the use of the following variants: *must, have to, 've got to, need to, gotta* (2014: 105). In 2007, Tagliamonte and d'Arcy give evidence that all variants are active in CE. At that time, their main finding was that there was an increased use of *have to* in Toronto. Tagliamonte and Denis (2014) confirm that the variant *have to* is the dominant variant for expressing deontic modality in CE in Toronto and southeastern Ontario, with the exception of Belleville where the use of *must* is still dominant, but they notice a change in progress towards *have to* (2014: 110).

Intensifiers

Tagliamonte and Denis also investigate the use of intensifiers in CE, which are lexical items that came to be used as adverbs and are used to strengthen or emphasise other expressions (2014: 111). They note a good deal of variation, but according to them, the main intensifiers in CE are *very*, *really*, *so* and *pretty*, as in the following examples (2014: 111-112):

a. So now alls we have to do is pull them into the river. Very easy, very nice. (Peter Gilmore, 54, BTR)

b. Like Holly's a very good parent and she's raising them very very good. (Leah Thompson, 55, BTR)

c. Dave was really quiet. A really nice person but ∅ quiet.…He's ∅ mellow and whatever. (Lindsay Wilson, 23, BTR)

d. They're so happy and they're so content. (Callie Shaw, 30, BLV)

e. I guess it'll be pretty weird but it'll be ∅ good. (Connor Gilmore, 15, BTR)

The authors show that the intensifier *really* is the most frequent form found in Toronto English as well as in the speech of other communities in Southern Ontario and its use is preferred over the intensifier *very*, which also confirms Tagliamonte's finding (2008: 369). Additionally, *so* is mainly used in collocations with emotional adjectives in Toronto and the authors show that this use of the variant is becoming more and more frequent in the speech of southern communities as well (2014: 130-132). However, they notice the use of *pretty* in the communities of Southern Ontario expanding to other adjective classes but in Toronto, the rise of *pretty* is exclusive to young men, while young women continue to use *so*. They also notice collocations with position adjectives (2014: 120).

Alternation between the infinitival verb forms try and and try to

Infinitival verbs are usually introduced by *to* and do not vary in their syntax, but one exception is the verb *try* which varies between the usual *to* and *and* to introduce subordination (e.g., *The children try TO/AND sing*) (Brook and Tagliamonte 2016: 301). Brook and Tagliamonte propose to explain the difference in use between Britain and Canada using data from the Toronto English Archive (Tagliamonte 2003–6, 2006a), the Southeastern Ontario Dialects Project (Tagliamonte 2007–10; Tagliamonte and Denis 2014), and the Northern Ontario Archive (Tagliamonte 2010–13; Tagliamonte 2014) for CE and from the York English Corpus (Tagliamonte 1996–98, 1998) and the Roots Corpus (Tagliamonte 2001–3, 2013) for BrE. They provide evidence that speakers have a categorical use of one of these two variants which are perceived as synonymous by these users (2016: 309). Indeed, *try and* is preferred by

British speakers (73%) while only 30% of Canadians use this variant. The authors find no significant correlations between age, gender, education and use of the *try and* variant. However, Brook and Tagliamonte show that the use is slowly progressing into more tenses (past and present); its first use occurred exclusively with imperative and infinitive tenses. Canadians prefer the variant *try to* and the apparent-time study reports a stability of the variant in CE (2016: 311).

Chambers (2004) points out that many such features, which he terms "vernacular universals" are common to other varieties of English. For instance, number agreement variation in *there* constructions which varies between singular and plural agreement (e.g., *there is/are* + plural) has the same linguistic conditioning, being favoured by the present tense in all English varieties. Chambers notes that there are more similarities than differences and Walker, who studies singular agreement with plural existential in Quebec English (2015: 105-106), concurs with Chambers that this variant is a vernacular universal, and is consequently not distinctly Canadian.

However, some differences have been noticed at the regional level, with isolated communities possessing distinctive grammatical features. This is the case with Newfoundland and Labrador English and African Nova Scotian English. In Newfoundland and Labrador English, Clarke (2010) notes that the subject pronoun can be used in object position (e.g., *there was a lot of they around*) and she notices the use of the "recent past" (e.g., *I'm just after seeing him* meaning *I have just seen him*) which originates from the Irish variety of English to be found notably in Newfoundland.

Nova Scotian English spoken by Canadians of African descent (Poplack and Tagliamonte 1991, 1994; Howe and Walker 2000) also has distinctive characteristics. Among these characteristics, there is the absence of the verb *be* (e.g., *she always eating banana sandwich*) and variable marking of subject-verb agreement with -s (e.g., *I gets all nerved up*). An exhaustive description of African Nova Scotian English can be found in Poplack and Tagliamonte (2001).

In conclusion, grammatical characteristics of CE are generally considered to be less salient than phonetic and lexical features, and often share features with AmE (Boberg 2010: 166).

2.3 Lexical features

This section presents a description of the CE lexicon, and an overview showing how studies on lexical features have evolved (e.g., surveys, sociolinguistic interviews). At first, CE

was always studied in comparison with BrE and AmE (Avis 1954, Boberg 2010), with a focus on shared lexical items and identifying their British and American sources. More recently, studies have focused on regional and social variation in the lexicon of CE. This period occurred simultaneously with a growing desire to codify CE. I also discuss hockey terminology in this section as it is central to this research.

2.3.1 Canadian English vocabulary in relation to other English varieties

English varieties share a core vocabulary and inventory of expressions because, as explained by Walker (2015: 64), they have all inherited a common vocabulary of Anglo-Saxon origin, influenced by French and Scandinavian languages. Subsequently the varieties evolved separately through neologisms and borrowings from languages with which they came into contact. These lexical differences manifest themselves either as unique vocabulary items that characterise a particular national variety (Canadianisms in Canada) or a particular regional variety within a country (regionalisms). CE has for a long time been constantly described in reference to the varieties of English it inherited. In fact, the Canadian lexicon was assumed to be a mixture of both BrE and AmE, due to its history (see sections 1.1 and 1.2).

During that period, studies which examined the part of the Canadian lexicon shared with BrE or AmE drew conclusions on CE being more or less influenced by one or the other of these two varieties. In an early study, Avis (1954: 13-18) shows that the majority of the lexicon of Ontario English is included in what the author calls "North American vocabulary", but he also indicates that Canadians use some British words such as "*tap*, *braces* and *porridge"* while Americans would say "*faucet*, *suspenders* and *oatmeal*" (Avis 1973: 63; 1983: 6). This tendency is also highlighted by Gregg (1992) and Woods (1979) indicate that younger CE speakers use more words of American origin, and this tendency is also noted by Walker (2015: 66) who explains that CE and AmE share some words that he refers to as "North Americanisms" (e.g., *truck*) whereas British speakers would use *lorry*. Although interest slowly shifted to specific Canadian vocabulary, this necessity to compare CE to major English varieties slowed down the recognition of the distinctiveness of the CE lexicon, and more generally the recognition of CE as a distinct variety.

From the 17th to the 19th century, as Walker (2015: 65) observes, lexical differences increased with the development of lexical inventions which caused the different varieties of English to grow apart. Boberg (2010: 167) observes that "rather than being no more than a mixture of British and American words, the vocabulary of CE features some Canadian words

as well, even beyond the obvious category of words for things found only or mostly in Canada". This aspect of the CE lexicon is demonstrated in the next section.

2.3.2 Uniquely Canadian vocabulary: Canadianisms

Previously defined as a category of words in the preface of the DCHP-1 (1967), the term "Canadianism" refers to a wide range of lexical items. According to Boberg, (2010: 116-117) the category includes "terms originated in Canada or that have a different meaning and usage in Canada" and "words for things that have other names in other dialects". Walker (2015: 65–66) also notes that Canadianisms are attested by means of written surveys, for example: "*humidex*[15], *loonie*[16], *bachelor apartment*[17], *chesterfield*[18]". For Boberg (2010: 123), the presence of these Canadianisms attests to the status and the degree of autonomy of CE. These Canadian terms sometimes continue to be compared with their "non-Canadian equivalents" (Boberg 2010: 116). Most Canadians say, "*bachelor apartment*, *bank machine*, *eavestroughs*[19], *grade one* and *washroom*", while most Americans use "*studio apartmen*t, *ATM*, *gutters*, *first grade*, and *bathroom* or *restroom*" and British speakers tend to say "*studio flat* or *bedsit*, *cash dispenser*, *gutters*, *first form* and *cloakroom* or *lavatory*" among other variants.

In the first half of the 20th century, several large-scale surveys were conducted, with the objective of documenting the CE lexicon on a national level. Scargill and Warkentyne published *The Survey of Canadian English: A Report* (1972) which is the first written survey of CE. It was distributed in the 1970s to students of 15 years of age and their parents in all the Canadian provinces. This large-scale study, with 14,000 survey responses, allowed the authors to map a national representation of lexical usage at that time, with a particular focus on Canadianisms.

Later studies, in the mid-1990s, while still focusing on CE as a whole, paid particular attention to social variation. Chambers conducted a survey called *The Dialect Topography* project (Chambers 1994). During the years of collection, he first used written postal questionnaires and then online surveys. Originally, the project only focused on the Golden Horseshoe, an area situated west of Lake Ontario, from the Greater Toronto Area to the Niagara Peninsula. Chambers chose to study this area because it is the most populated region of Canada with about five million speakers (one sixth of the Canadian population) living in this 250 km area. Later the project was extended to other Canadian regions. The goal of the survey was to

[15] A combination of the level of heat and humidity.
[16] Informal, the Canadian one-dollar coin.
[17] A small apartment intended for one person.
[18] A couch or a sofa.
[19] The structures along the edge of a roof for catching rainwater.

gather data from native speakers of CE on the use of the main variables that characterise the variety. The survey includes 73 questions: 30 on pronunciation, seven on morphology, five on syntax, four on usage and 31 questions on vocabulary. In order to test the conditioning effects of social factors on lexical variation, Chambers designed a regionality index (2000) to take into account regionality as an independent variable and to measure the degree of regionality of the speakers and the influence it may have on their lexical use. His index indicates that speakers bring their lexical variants with them when they move from one region to another. The DT data show, for example, that the vast majority of U.S. respondents, when asked to indicate the word they use for "the long piece of furniture to sit or stretch out on" is *couch* (81.2%), whereas Canadians often report using more than one term, resulting in eleven items, three being shared among all age groups being *couch, chesterfield* and *sofa*. The lexical variant *chesterfield* is a Canadianism which has declined since the 1970s (as shown in apparent-time results). It is most frequently used by speakers aged 50 or older, while younger speakers prefer the innovative form *couch*. Avis' (1954) lexical survey shows that in the 1950s, 88.8% of Canadian speakers reported using *chesterfield* and 76% reported an exclusive use of that word. The DT results also indicate that *sneakers, running shoes* and *runners* can be found in Canada, yet *running shoes* is a Canadianism as it is reported to be used in each region surveyed (Chambers 2000: 187). The DT model was followed by other studies such as *the Dialect Topography of Montreal* (Boberg 2004b). The data collected by DT and the survey questions used by Chambers are available for consultation online in the CHASS database on the DT website[20].

Like the DT project, the ANAE for which data were gathered between 1992 and 1999, is a large-scale survey (Labov et al. 2006: 60–61) which aimed at producing an overview of spoken English across the North American continent. The ANAE is based on the Telsur telephone survey, a corpus of recorded phone calls during which participants are invited to read wordlists and to take part in short conversations. It tackles mostly phonological questions, but it also deals with lexical and grammatical questions. Though it does not give a full account of the regional differentiation of CE because few cities were surveyed, it is still considered to be one of the most important dialect surveys due to its large coverage in North America, and its findings are quoted in many studies. On the lexical level, the ANAE demonstrates, for example, that *carbonated beverage* and *pop* are in use in Canada except in the cities of Montreal and Winnipeg. In addition, the *soda/pop* isogloss separates the North from the Midlands in the U.S. and separates Canada from the North (Labov et al. 2006: 289-292). In a broader perspective, Walker points out that lexical items are likely to be correlated with age, showing an age-graded

[20] https://dialect.topography.artsci.utoronto.ca/dt_about.php

lexical difference with younger Canadian speakers tending to use more American forms (2015: 114-116).

2.3.3 Regional lexical differences in Canada

The study of Canadianisms leads to the identification of some lexical elements as regional variants, also designated by the terms "regionalisms" or "regional dialect forms". The Survey of Canadian English (1972) was criticised by Woods (1979: 287) because of its purely dialectological perspective, as this study only relies on written surveys which means respondents could report terms they do not actually use. Woods adapted the methodology for sociolinguistic interviews and carried out a study entitled *A socio-dialectology survey of the English spoken in Ottawa: a study of sociological and stylistic variation in Canadian English* (1979). He conducted hour-long interviews to elicit phonological, morphological, syntactic and lexical variables. He interviewed 100 participants who were born and raised in Ottawa. He shows that the degree of formality of the tasks and the social factors such as age, gender and SES condition language variation. Similarly, other studies investigated regional dialect areas in Canada. Gregg conducted *The Survey of Vancouver English* (1992) which is based on recorded interviews with 300 speakers. Nylvek's Ph.D. research (1992) focuses on Saskatchewan English, with 661 questionnaires completed by respondents from two urban and two rural areas in Saskatchewan. She found that age was the social factor that most influences linguistic variation. Zeller (1993) examines lexical borders and qualifies the international border between Canada and the U.S. as "friendly, interactive, and culturally similar" (1993: 179). She concludes that there are reciprocal linguistic influences at the border, with AmE influencing CE and vice versa. Another large-scale survey study is the social dialectology study conducted by Boberg and administered from 1999 to 2007, *The North American Regional Vocabulary Survey* (NARVS)[21] which studies new variables in CE, with a particular focus on regional dialect areas in Canada. In order to study social variation, the study required respondents to be born and to have lived in the same region they had grown up in. The NARVS study began as fieldwork carried out by undergraduate students in a sociolinguistics course. After the collection of thousands of responses, there was a press release with some preliminary results, which were shared with the *National Post*[22] (Dubé 2002). The media coverage of the study attracted the interest of the Canadian public. It was then converted to an online survey to maximise participation, leading to more geographically and socially diverse responses. The NARVS collected 3000 answers from 1800 Canadian speakers and 360 American speakers. Respondents

[21] A thorough description of the NARVS methodology can be found in Boberg (2010: 167-170).
[22] It is one of four Toronto daily newspapers.

were asked to circle the word they use, or to write it down if it is not on the predetermined list. Boberg's work is considered to be a major achievement for CE, as it acknowledges significant Canadian lexical features, including uniquely Canadian terms, as well as local variants in different Canadian regions (Boberg 2010: 181). Indeed, the NARVS distinguishes six main regions in CE: British Columbia, The Prairies, Ontario, Quebec, Newfoundland, and the Maritimes. Regarding lexical variation, the NARVS reveals regionalisms such as: *cottage* and *cabin* used in the West and in Newfoundland and *chalet* in use in Montreal. It also indicates local lexical variants that distinguish Canadian regions, such as *corner store* used in British Columbia instead of *convenience store* which is the popular term across North America. Boberg's research has shown the unique status of Quebec English, with the influence of French particularly on lexical items, some of these loanwords are adapted without translation (e.g., *depanneur* which means *convenience store*) (2010: 181-183). More details on the lexical influence of French in Canada can be found in Fee (2008).

The apparent-time study reveals some changes in progress. The use of some lexical items is shown to be decreasing (e.g., *pail*[23], *bookcase*[24], *chesterfield*, *eavestroughs* and *buffet*[25]) while others are becoming more frequent (e.g., *couch, stroller, cupboard, closet* and *bucket*) in the use of younger speakers (Boberg 2010: 188-189).

In the same vein, the variables of *eavestroughs/gutters*, are examples of stable variables subject to age-grading (Scargill and Warkentyne 1972, Boberg 2005). A decline of the use of *eavestroughs* is found in apparent time: 48% of the speakers in Survey of Canadian English (1972) and 35% of the speakers in NARVS (2005) but Boberg's study reveals that speakers increase their use of *eavestroughs* as they get older (77%) (Boberg 2010: 195).

The NARVS shows a division of Ontario between Northwestern and Southern regions. Boberg explains that Northwestern Ontario, with its largest city Thunder Bay, remains an isolated and sparsely populated part of the province, which follows the Prairies' use of lexical terms such as *parkade* and *runners* and has its own variant for *camp*, while *cabin* is used in the West and *cottage* in the East of Canada. On the other hand, the NARVS shows that Southern Ontario, the most densely populated region of Ontario, is the area of Canada whose lexicon is most influenced by AmE (Boberg 2010: 186).

Boberg notes that two Canadian regions are particularly perceived to be more American by non-linguists, this is the case of Alberta and Southern Ontario. Alberta "is often perceived

[23] The equivalent of a bucket.
[24] The article of furniture as well as the room or institution containing book.
[25] The equivalent of a cupboard.

by easterners to be a Canadian version of Texas, with its vast cattle ranches and oil wealth and its annual Calgary Stampede, a summer rodeo and festival during which many locals deck themselves out in western gear", and the perception of Southern Ontario as American is due to its "close geographic and economic contact with larger centres of American population directly across the border" (Boberg 2010: 186). The results of NARVS reveal that Southern Ontario is influenced by the American lexicon (Boberg 2010: 186).

Although urban centres such as Toronto and Vancouver might be lexically more influenced by AmE (Boberg 2005: 51-52), Boberg highlights that, in terms of lexical boundaries, Canadian provinces have more in common with each other than with adjacent American regions (2005: 53). Furthermore, Boberg explains that the maximal frequency of different lexical items is reached in different regions or cities in Canada, which means that all the terms influenced by AmE are not used in the same Canadian city or region. Instead, it is spread over the country, so the American influence is relative. If an item has maximal frequency in Toronto for example (e.g., *notebook* 85%), the particular use of this term is relatively low elsewhere in Canada (2005: 46).

More recently, Bednarek (2009) conducted a study the lexical variation in Toronto English: the Lodz Corpus for Toronto English. Bednarek recruited participants in downtown Toronto and carried out face-to-face interviews and task questionnaires respectively in 2004 and 2006. He also compiled two years of editions of *Toronto Sun* [26] (2002 and 2003), a total of 641 131 texts (2009: 39-48). His findings indicate a shift in reference, since Canadianisms are either becoming archaic or specialised in Toronto English. For instance, the use of *chesterfield* is preferred when addressing older speakers and in formal situations whereas *couch* is used among peers (2009: 67-69). Also *impaired* is frequently found in the newspaper data, while respondents associate this Canadianism only with being handicapped (2009: 102). Overall, what Bednarek calls "General English" is preferred among respondents (2009: 106) (e.g., *parking garage*), but he does not define what he means by General English. Moreover, Bednarek concludes that anglophone Canadians use Canadian lexical items, which is not the case for immigrants, and this may be linked to a certain attachment to Canadian culture and identity. His results reveal some discrepancies between newspaper data and everyday use of respondents: when respondents use an item, it is not found to be used in the press and vice versa (2009: 106-107). What is of particular interest for my research question is that Bednarek's

[26] *Toronto Sun* is a daily English-language tabloid.

lexical study also reveals important findings regarding the use of hockey vocabulary by Torontonians and this is the focus of the next section.

2.3.4 Hockey terminology in Canadian English

A bibliographic search on hockey terminology in CE reveals an apparent lack of academic research on the topic. It appears that hockey vocabulary has not yet attracted the interest of linguists, except for a few references.

In her book Barber (2008: 140-142), the chief editor of the *Canadian Oxford Dictionary* (2008), explains the role of hockey in CE generally, and in Canada's political life as well, since CE has experienced the extension of certain hockey terms beyond hockey, and these terms are used metaphorically in Canadian political life (2008: 140-141) (e.g.,"Joe Ghiz hangs up his skates because he is feeling too old and tired for the game of politics"). In her book, she gives a concise list of 15 hockey terms and their definitions (2008: 142-144). This book is the result of previous observations, thus in a three-minute clip broadcast on CBC television (May 22nd 2000), Barber explains some hockey terms used in the sport itself: *arena* (an "ice palace"), *spiranamas* ("an evasive move consisting of an abrupt 360-degree turn"), and *shinny* ("informal pickup hockey played without nets or referees, street hockey") (Barber 2008: 144).

While conducting research on lexical terms in Toronto English, Bednarek (2009) indicates that "a large number of Canadianisms have developed" from a love of winter sports such as hockey (2009: 11). He reports that the hockey lexicon has entered the everyday life of Canadians: "much vocabulary connected with hockey has entered contemporary speech with reference to everyday situations" (2009: 101). He also shows that the majority of participants limit their use of this hockey-based vocabulary to sport contexts, and that only a few participants use this vocabulary extensively (2009: 95). He notes a larger preference to use hockey expressions among male respondents (72.7%) than among female respondents in everyday contexts. However, he explains that some of these hockey-based expressions have undergone semantic broadening in Canadian vocabulary. For instance, he observes that "to hang one's skates" is the most frequently used expression among respondents (2009:75). His findings demonstrate that this expression has undergone generalisation in CE and is used by respondents in other contexts to express the end of an occupation or an activity, or literally to refer to the process of hanging out a piece of clothing. Studying the vocabulary used in the *Toronto Sun*, he also observes the presence of hockey vocabulary in the written data, which gives evidence of the influence of hockey with a tendency to extend hockey terms to everyday use. Bednarek notices the popularity of hockey terms in Toronto media, both in sport conversation and

everyday contexts (2009: 101-102), which aligns with his findings based on participants' speech. The expression "to hang one's skates" is found 94 times with other nouns (e.g., "to hang up one's pen"). The original form is frequent, but it is modified and used with a range of nouns to fit in with numerous everyday life contexts. Bednarek's research (2009) confirms the presence of hockey vocabulary, which is used by respondents and is present in the Toronto media.

Other studies have come to the same conclusion, but the argument is rarely developed. Baillargeon and Bossinot (2015) note that "hockey is such a big deal […] its vocabulary has slipped into everyday speech". In their study of major junior hockey players' stereotypes, McDonald and Lafrance (2018: 5) note that Canadian hockey players use "hockey vocabulary […] referring to good people as 'beauties' or by adding a 's' or a 'y' to the ends of surnames of those with whom [they spend their] time" (e.g., Jones becomes Jonesy), but they do not offer further details. Dollinger reports the presence of hockey words in Canadian vocabulary, whether they are used in hockey or in daily life, noting that "hockey, [...] professional or *shinny* contexts provide only the tip of the iceberg of the distinctly Canadian vocabulary" (2019: 240). More recently, Bray (2015) explores the lexical use of hockey terms in his unpublished master's dissertation, demonstrating that hockey also plays an important role in the U.S.

Nevertheless, with the exception of Barber's, Bednarek's and Bray's research, the main sources on hockey terminology are the result of perfunctory references to Canadian hockey lexicon in broader research on the sport, or efforts by non-specialists to document this lexicon. These non-specialist authors produce glossaries and lists of hockey terms, from short articles to exhaustive lists containing hundreds of terms they document[27]. *Letterkenny*[28] *wiki* gives definitions of hockey slang terms used in the series to help the audience understand the dialogues.

This section has shown how studies on the CE lexicon have evolved from making comparisons and associations with other English varieties to documenting vocabulary that is specific to CE, with further studies investigating regional variation of lexical forms. Findings indicate six main lexical regions in Canada. Lexical research is based on large-scale studies as well as regionally specific investigations. Finally, this section has revealed a gap in the research

[27] https://livelearn.ca/article/about-canada/hockey-terms-and-lingo/,https://hockeyanswered.com/top-100-nhl-slang-words/, https://bleacherreport.com/articles/810667-a-benders-dictionary-hockey-slang-you-may-or-may-not-know

[28] Letterkenny is a Canadian comedy series produced by two Canadians Jared Keeso and Jacob Tierney which portrays social groups such as the farmers and the hockey players for instance, in Letterkenny, a small fictional rural community in Canada, (https://letterkenny.fandom.com/wiki/Slang_Terms).

as only very few studies have addressed Canadian hockey terminology, a field which remains relatively unexplored, although it has received a good deal of attention from non-specialists.

2.4 Spelling characteristics

CE does not apply a single official norm as regards its spelling. Rather, as Boberg (2010: 40) notes, CE makes a "compromise", accepting both British and American spellings, sometimes aligning with British spelling and sometimes with American spelling. This approach dates back to 1890 when Prime Minister Sir John A. Macdonald was asked what spelling forms should be used in Canada, because American spelling forms began to be used across the border. He ordered that British forms should be the standard for official documents as Canada was part of the British Empire. As the list in Table 1.3 illustrates, both sets of spelling forms continue to be used indifferently in Canada.

Canadian English	British English	American English
Acknowledgement	**acknowledgement**	acknowledgment
Aluminium	aluminium	**aluminium**
Cancelled	**cancelled**	canceled
Cheque	**cheque**	check
Curb	kerb	**curb**
Defence	**defence**	defense
Dialogue	**dialogue**	dialog
Esthetic	aesthetic	**esthetic**
Grey	**grey**	gray
Hypothesize	hypothesise	**hypothesize**
Labour	**labour**	labor
libellous	**libellous**	libelous
Plow	plough	**plow**
Program	programme	**program**
Storey	**storey**	story
Theatre	**theatre**	theater
Tire	tyre	**tire**
Tranquility	tranquillity	**tranquility**
Yogurt	yoghurt	**yogurt**

Table 2.3: A list of common different spelling forms according to BrE and AmE. The item in bold is the form adopted by Canadians.

These differences in spelling feature in usage guides and dictionaries such as the *Gage Canadian Dictionary* (1967) the *Canadian Oxford Dictionary* (2008), or the *Collins Canadian*

Dictionary (2009). Entries in these dictionaries sometimes offer several choices but the first entry is always the one that most Canadians prefer.

After the 1985 conference organised by the Canadian Linguistic Association at Queen's University which demonstrated the variety of spelling forms present in Canada, Pratt argued that "No one can say what [the Canadian spelling conventions] are" (1993: 62). Using Ireland's findings (1979) while surveying spelling usage across Canada. Pratt insists on the fact that the variation in the spelling forms of CE comes from its sociolinguistic history and that Canadians use both AmE and BrE spelling forms. He shows that there is regional variation in the choice of spelling forms in Canada. He notes that the -our/or spelling forms varies considerably between provinces, with Ontario favouring the -our spelling but with Alberta strongly favouring the -or form. Spelling choices in each province also vary according to the lexical item (1993: 69). Pratt provides evidence of the difficulties that this situation causes for editors and writers (1993: 71-72) and he refers to style guides and dictionaries that are available to Canadians, while also emphasising that Canadians seem to be indifferent to the lack of consistency in the use of spelling variants (1993: 73).

During codification, some usage guides were published in Canada, a further step in the standardisation process of the CE variety. CE had become an object of study in the early 1960s (see section 1.3), and researchers collected the *Strathy Corpus of Canadian English*, which is an electronic database to serve as a descriptive base of authentic language. It now includes 50 million words and is featured alongside the Corpus of Contemporary American English and the British National Corpus. Based on the Strathy Corpus, the *Guide to Canadian English Usage* (Fee and McAlpine 1997) was published, including 1750 entries and addressing a wide audience. In 2000, a paperback edition was released of this reference book. During the same period, a Canadian Government guide especially addressed to writers and editors, *The Canadian Style: A Guide to Writing and Editing* was published by the Government of Canada (1987). This guide is used by federal organisations and covers broad topics from abbreviations, capital letters and hyphenation use to other aspects of spelling. For example, it advises readers to use "e" in digraphs, such as "ae" and "oe" in words of Latin or Greek origin, with the exception of *aesthetic* and *onomatopoeic* (1993: 52). It points out the difference between *meter*, a measuring distance and *metre*, a unit of length. It provides a list of words with the suffix "-ise" (e.g., *advise, compromise* and *exercise*) and also mentions plural forms such as *appendixes*. In the same vein, but addressed to a different audience, is the reference book mostly used by journalists, *The Canadian Press Stylebook* (McCarten 1968) which establishes standards for the national news agency and professional journalists in Canada.

2.5 Standard Canadian English accent

The homogeneity of CE from Ontario to British Columbia is first referred by Priestley (1951) but this so-called homogeneity only occurs in the middle-class speech of Canadian urban communities according to him. Avis (1954) moderates this argument and argues that there are regional variations in Canada, Chambers (2006) describes a "standard [Canadian] accent" as "urban, middle-class English as spoken by people who have been urban, middle-class, anglophone Canadians for two generations or more" (1998: 252a), and he develops this in a later study declaring that "CE is remarkably homogeneous across the vast expanse of the country. Except for Newfoundland, urban, middle-class Canadians speak with much the same accent" (2006b: 385). Chambers' initial definition is extended and refined by Dollinger (2019), who extends the term beyond monolingual speakers, and he uses Standard CE to define not just accent but language at large: "Standard Canadian English is spoken by those who live in urban Canada, in a middle-class job (or one of their parents holds such employment), who are second generation or later (born and raised in Canada) and speak English as (one of their) dominant language(s)" (2019: 176). Dollinger notes that Standard CE is spoken by "36% of the population" in Canada (2019: 176).

2.5.1 The debate on the homogeneity of Canadian English

As noted in sections 1.1 and 1.2, CE is the product of different patterns of settlement in a territory inhabited by Indigenous peoples. As a result, some scholars have described CE as being a very homogeneous variety ("the smaller the population and the more recent the settlement, the more homogenous is the language" (Chambers 1994: 23)). However, this opinion is not shared by everyone and I found two opposing views on the subject: those who adhere to the Loyalist Theory and those who consider this perspective to be too narrow. On the one hand, Bloomfield (1948: 61-64) argues for the Loyalist Theory, according to which CE is said to be influenced by AmE because the first major English-speaking settlers came from the U.S. He asserts that "one type of English is spread over Canada's 3,000-mile populated belt." Avis (1954: 14), who also supports this theory which emphasises the American character of CE, observes that "the speech habits of Canadians, especially educated Canadians, have become remarkably homogeneous, though by no means free from regional variations". On the other hand, Scargill (1957) argues that this theory attributes too strong an influence to the Loyalists and does not take into account the large influx from the British Isles during the second wave of immigration. He also notes the role of the Canadian Pacific Railway in the expansion from east to west (1957: 9-11). Since it connected Eastern Canada to British Columbia, the railway played

a major role in the immigration process. Some scholars argue that there is an absence of regional variation in CE because of Canada's history. Walker (2015: 59) shows that settlers "mainly expanded from and through Ontario". Walker uses the example of the CVS while extending across Canada and exhibiting variation, it can be used to define "inland Canada". Moreover, CR is also found to characterise the English of inland Canada (Walker 2015: 91), thus allowing both the CVS and CR to be used to delimit CE. Dollinger (2019: 172) agrees with Walker (2015) when he writes that this homogeneity is due to a westward movement from Ontario and results from codification and standardisation.

Chambers (1998a) and Labov et al. (2006: 217) concur on the observation that CE is definitely less heterogeneous than AmE or BrE varieties which display considerable regional dialect diversity. Although this homogeneity can be noted in CE, Boberg highlights some regional variation which he attributes to enclaves from immigration settlement (2010: 25-28). He also refers to the results of an opinion survey carried out with McGill. University undergraduate students which reveal that participants are aware of this general homogeneity, but that they are also aware of some regional variation (Boberg 2010: 28). Indeed, when respondents were asked how much regional variation they thought there was in CE, apart from Newfoundland, which has been described as having a distinct variety of Canadian English (see section 1.1), the majority of participants (N=41, 64%) answered a "little bit" and 34% replied "a lot". While regional variation is attested in Canada, CE has often been described as a homogeneous variety and this homogeneity has been a topic of debate. According to Boberg (2010: 208), most linguists who describe CE are not willing to emphasise regional variation, as if scholars thought homogeneity was an asset to be considered distinct, and variation a disadvantage. The next section describes the role of Ontario English in this homogeneity.

References to historical facts can explain the status of Ontario English among varieties of CE. Dollinger discusses "Ontario's central role" as "about 1 million people, four fifths of them from the USA, moved to what is now Ontario." (2019: 12-13). The English spoken in Ontario was historically important because Canadian-born speakers of Ontario English were the dominant group during the first wave of immigration (1780s-1812) and the first mayors who were appointed in the main cities throughout Canada all came from Ontario. In addition, Ontario was densely populated and so had considerable weight in political decision-making. Moreover, the Loyalists first resettled in what was to become Ontario, and then migrated west, which could account for the similarities between British Columbia and Ontario English.

In this chapter, I have drawn on a range of sources to show how a distinct Canadian variety came to be affirmed and reviewed the literature on its characteristics. Studying the main

characteristics of CE has enabled me to establish CE as distinct, an important step in establishing the existence of HE, since they are believed to be associated. Particular attention was paid to the two phonetic phenomena investigated in the speech of hockey players in this study: CR and the CVS. Furthermore, lexical studies also attest to the presence of Canadianisms and regional forms in use in Canada, and to a lesser extent Canadian variation in grammar characteristics was also studied in this chapter even if grammatical forms are not salient features of CE. In this research, I do not examine lexical or grammatical features present in the speech of the hockey players in the corpus, because I have chosen to focus on the systematic study of phonetic variables which are among the most salient distinguishing characteristics of CE. In addition, unlike most lexical variables and many grammatical variables, they have the advantage of appearing frequently in a sociolinguistic interview. Moreover, when participants in my pilot study associated hockey players' speech with sounding Canadian, they were indeed referring to phonetic features. Further research could investigate the grammatical and lexical features of HE. To do so, it would be necessary to use a different methodology, for example Llamas' (1999: 98-99) use of Sense Relation Networks might elicit useful data from hockey players regarding their lexis. For example, hockey players could be asked to respond to prompts in a questionnaire to probe their associations among items of Hockey English vocabulary.

Regarding spelling, Canada does not apply an official norm; rather, there is tolerance and use of several spelling forms, with dictionaries and spelling guides presenting all the forms that can be used with an indication of the spelling most preferred in the first entry. This overview has also demonstrated the range of regional and social variation in CE, noting the effects of age and gender, factors that will be investigated in my study of HE in Ontario. Finally, this literature review has revealed that despite the popular interest aroused by hockey and hockey terminology, there has been little research on HE, not only regarding the lexicon, with insufficient representation of current terminology in Canadian dictionaries, but also regarding pronunciation features. This study seeks to contribute to filling that gap by investigating the English of Ontario hockey players, both from the standpoint of their production of two phonological variables and from the standpoint of how their speech is perceived by Ontarians. The next chapter investigates the notion of identity in sociolinguistics and particularly the role of hockey in the Canadian context.

Chapter 3 Canadian English and Canadian identity

This chapter determines the place of identity through a sociolinguistic lens as sociolinguists focus on language and society. It presents and develops the different concepts of identity and investigates the role of identity in a CoP. Finally, it highlights the marker of identity in Canada, as well as the role of hockey in the Canadian national identity.

3.1 The concept of identity

"Identity" comes from late Latin "identitas", itself derived from Latin "idem" which means "the same" or "the quality of being the same". The Cambridge Dictionary defines identity as "the qualities that make a person, organisation, etc. different from others" and "the fact of being or feeling the same". Thus, the notion of identity means to be similar, to be like fellow humans. When individuals share an identity, it tends to bring them together. But at the same time, one's identity is a way to single out an individual as different from other individuals. To fully understand the concept of identity both aspects should be studied together, as explained by Edwards: "personal and group identities embrace one another" (2009: 2) and therefore should not be explored separately. In the same vein, Bucholtz and Hall provide the following broad definition of the concept of identity: "identity is the social positioning of self and other" (2010: 18).

3.2 Language and identity

From a sociolinguistic perspective, Kiesling defines identity as: "a state or process of relationship between self and other; identity is how individuals define, create, or think of themselves in terms of their relationships with other individuals and groups, whether these others are real or imagined […] the process of how speakers use language to create relationships" (2013: 450). His definition emphasises the interactional dimension of identity and the important role played by language. Bucholtz and Hall (2010) also consider identity to be a relational process (Bucholtz and Hall 2010: 23-25) and they draw on social science's definitions of "sameness" and "difference" but reformulate them using Bourdieu's (1984) terms "adequation" and "distinction" while extending them to include all social differentiation. They note that identity defined as "adequation" is based on the need to be similar enough, but not identical, to understand and be understood in interactions. For them, "distinction" relies on the

suppression of similarities to create differences. To sum up the definition of the concept, one could say identity is the means used by individuals to relate to society (Kiesling 2013: 450).

Identity is also constructed and influenced by social factors, and one way to express identity is through language. In the 1980s, interest was focused on linguistic aspects of identity in studies such as Gumperz (1982) and Le Page and Tabouret-Keller (1985). These studies demonstrate that every speech act is used by an individual to perform what Le Page and Tabouret-Keller call "acts of identity". Such acts illustrate individuals' personal identity and social position in society (1985: 14). Sociolinguistic studies aim to grasp the concept of identity within the use of language (Coupland 2007, Edwards 2009, Eckert 2012). Sociolinguists agree that identity is not fixed; it is a dynamic notion and individuals possess more than one identity since identities vary according to different speech situations. Indeed, lifespan studies have shown that speakers' language is dynamic and changes over time (Sankoff 2007).

3.2.1 Identity in variationist sociolinguistics

In an account of the evolution of perspectives in the sociolinguistic variationist framework, Eckert (2012) distinguishes "three waves" in the study of language variation and change and describes the different approaches applied in this field of sociolinguistics (see Chapter 4, section 4.2 where I review the differences among these three approaches in terms of methodological and theoretical frameworks). In this section, I examine how the different waves study the role of identity in conditioning linguistic variation (Drummond and Schleef 2016: 51).

In first-wave studies, scholars are interested in the social and linguistic factors that condition language change. Identity is usually not mentioned, or it is limited to a focus on the macro sociological categories which may represent broad identities. These studies are generally not able to capture the full range of identities. In second-wave approaches, scholars conduct ethnographic work and social group identities emerge from these observations. For instance, the use of a local vernacular is an expression of identity, whether ethnic, or social (Drummond and Schleef 2016: 52). Scholars of the second wave also tend to investigate qualitative aspects of what they call "communities of practice". The concept of identity in communities of practice is developed further in the following section (see Chapter 4, section 4.2.2). In third-wave studies, linguistic variables are understood to index social meanings in order to create identities, since agentive speakers make linguistic choices within the envelope of variation to express a certain identity (Lippi-Green 1997; Coupland 2007; Schilling-Estes: 2008; D'Onofrio: 2018,2020). This approach to identity is in accordance with Edwards' view of language as an

identity marker at the level of the individual (2009: 21); speakers use linguistic features to resemble other individuals or to differentiate themselves from them. From that moment on, a change in identity equals a change in linguistic behaviour (Bucholtz and Hall 2010: 23). Third-wave scholars consider identities to be dynamic and changeable (Bucholtz and Hall 2010: 25), involving not just language but other social means as well (Eckert 2012: 451). For instance, Irvine (2001) addresses the parallel between outfit styles and speech styles that speakers use depending on different speech situations. Coupland's research (2007) has been focused on how speakers project different identities using different styles, meaning different ways of speaking.

Identity has been studied differently in the three waves. Nevertheless, Bucholtz and Hall (2010: 19) argue that identity emerges from interactions, and they recommend combining first-, second- and third-wave approaches. According to these authors, all aspects of identity should be investigated at the same time and an investigation should combine broad social categories, local identity, and interactions (2010: 20-21).

Identity has been explored within CoP[29], and sociolinguists have particularly focused on the concepts of "sameness" and "difference". This is central to my research, as hockey players can be understood as such a community. In 1985, Le Page and Tabouret-Keller discussed collective identity of a speech community. Identity is a sociolinguistic means to associate with speakers of the same social group: speakers participate in these social groups and look for recognition within them. This notion of community creates insiders and outsiders. Indeed, scholars have shown that members of a specific community use language to highlight their group identity and underline their sense of belonging, a concept described by Edwards (2009: 27) as in-group solidarity. He further argues that when speakers have grown up in a community, they can fully participate in this in-group identity (2009: 55). According to him, there is something comforting about associating with a group and he qualifies this reassuring continuity as "an almost mystical sense of connectedness" (Edwards 2009: 19). In the same vein, Silverstein (2003) pinpoints that in each speech community there is an identity related to language through features that index that group identity and members use language to project that specific identity. This distinguishes them from outsiders who do not have the vernacular used by the members of the group and who use linguistic variants that allow them to distinguish themselves from the actual members of the group (Chambers 1995: 100). Tagliamonte (2015) moderates previous scholars' comments, postulating that one can enter a community as a participant or an observer; since she defines social identity as the fact that speakers use language to make statements about their identity in relation to a group or their audience (2015: 7-8). In

[29] This concept is explained in Chapter 4, section 4.2.3.

summary, identity is studied at the level of production in terms of the linguistic choices that speakers make, but speakers also hold representations of and attitudes towards speech and towards other speakers at the level of perception. Walsh comments that identity is alive in others' perceptions, representations, and interpretations (2020: 25). Central to Lucek and Garnett's research is the perception of otherness because out-group members react to in-group identities (2020: 127), since the presence of features gives away speakers' membership. But their research also suggests that listeners have the ability to recognise and associate some speech features with a variety correctly, thus corroborating Preston's (2010: 108) findings which show that non-linguists can correctly identify a variety using speech samples (see Chapter 6, section 6.4).

3.3 Markers of Canadian identity

Since Canada is a young and diverse country, it has been argued that the country has had a difficult time developing markers that encompass the identity of all Canadians (Robidoux 2002: 209). Canada has often been referred to as a "mosaic" (Gannon 2003) because it is divided into several languages and ethnicities, and that calls into question recognised markers of national identity in Canada (Robidoux 2002: 219). If what Canadians have in common is diversity, how much is there really to share? Furthermore, Canadians have been shown not to identify with specific Canadian markers, but to identify themselves in reference to what they are not, and particularly that they are not Americans (Chambers 1995: 62, O'Connor 2007).

Linguistically, anglophone Canadians have suffered from the ambivalent status of their variety and its slow recognition as a distinct variety of English, ultimately impacting their linguistic identity. Yet, several studies demonstrate the specific usage of linguistic features in Canada. This section emphasises that the link between language and identity in the anglophone context is not yet robust. Among these studies, Pringle (1985) notes that "Canadian palatal glide retention has often been interpreted as emblematic as a distinct Anglo Canadian linguistic identity"; but, in a later study, Clarke (2011) suggests that both the innovative glideless and the glided variants are used in Canada among different speech communities, but they have lost their previous association with varieties of BrE and AmE (see Chapter 2, section 2.1.1 for a discussion of this variable). Instead, these two variants are now used by Canadians to index different social meanings. The glided variant, the conservative form, indexes erudition and education while the glideless variant, the innovative form, connotes a more casual speech (Clarke 2011: 242). In more recent studies, scholars have shown that Canadians use specific Canadian features in order to express a certain Canadian identity. The discourse marker *eh*,

although stereotyped, is used in this way (Gold and Tremblay 2006, Chambers 2014) (see Chapter 2, section 2.2 for a discussion on the variable). Bednarek (2009) demonstrates that Canadianisms are more likely to be used by anglophone Canadians than by immigrants because they are associated to a certain Canadian attachment or identity. In addition, Swan (2016) notes the role of CR in the expression of identity and pride within Canadian speakers; this linguistic identity marker role is confirmed by Swan's findings (2017): CR is used by speakers to express a Canadian identity in order to distinguish themselves from American speakers.

To go beyond linguistic markers, I provide a summary of the General Social Survey dealing with Canadian identity. This survey was conducted by Statistics Canada in 2013 and it reports on the national symbols, shared values, and pride held by Canadians. Briefly, respondents are asked to report on whether they think the five symbols proposed by the survey are part of Canada's national symbols: the Charter of Rights and Freedoms, the flag, the national anthem, the Royal Canadian Mounted Police, and hockey. Respondents are then invited to rate how important they believe these symbols are for Canadian identity. Among these symbols, the Charter of Rights and Freedoms and the flag receive the highest score with "more than 9 in ten Canadians stating that these symbols were either very or somewhat important to the national identity" (Sinha 2015: 4). The national anthem gets 88% and the Royal Canadian Mounted Police gets 87%. Hockey gets the lowest score of all the symbols presented. 77% Canadians consider hockey to be a national symbol; 46% of the respondents believe it is particularly important for Canadian identity but there are also 22% who say that hockey is not important for that identity. These responses are conditioned by social factors. Women are more likely to perceive national symbols as very important, except for hockey; only 42% of women believe hockey to be a very important symbol for their identity (Sinha 2015: 6). This result may be explained in reference to the fact that hockey is a male-dominated sport, and therefore women respondents do not feel as close a connection to hockey as male respondents do. Thus, this result is skewed according to gender compared to other symbols. The rating of hockey as very important for Canadian identity is higher among Canadian households with higher incomes (49%) and higher among younger respondents (25-34 years old). Geographically, this perception is also higher in Ontario and Newfoundland and Labrador (53% in each province) compared to other Canadian provinces. Furthermore, more than half of Indigenous, immigrant, and minority respondents report that hockey is very important for Canadian identity.

Another essential identity marker in Canada, is Tim Hortons[30] according to Barry and Manji (2010: 12). Tim Hortons is the product of the association of a businessman, Ron Joyce, and a National Hockey League (NHL) hockey player named Tim Horton who played for the Toronto Maple Leafs. The restaurant was first named "Tim Horton's" and the English possessive apostrophe was later removed to conform to Quebec French-language legislation (in particular Bills 22 and 101 which require signage to be in French): "Tim Hortons" (2010: 15). According to the authors, Tim Hortons restaurants illustrate what they call "the nation's love for hockey" as they emphasise that hockey is "an enduring symbol of the Canadian identity" (2010: 12-13). It is a means to unite all Canadians, which is related to hockey, and which also offers Canadians a reference different from Americans. Tim Hortons' importance in Canada is reflected in the use of lexical items directly borrowed from the restaurant chain. Indeed *double-double*[31] and *Timbits*[32] are now considered to be Canadianisms (see section 2.3.2).

To sum up, hockey is perceived to be one of Canada's national symbols even if it is ranked lower than other symbols that are more institutionalised. The results of the survey suggest that hockey is still perceived to be a male-dominated sport in 2013, as men do perceive it as more important for Canadian identity than women. It seems to have become an elite sport, with higher-income households being more sensitive to its symbolic role and ranking it higher than average-income households. Yet, it is perceived to be an important symbol of Canadian identity for minorities, as it is used as a means to cultural acculturation.

3.4 Hockey and Canadian national identity

This section shows how hockey has become and remains a symbol of national identity in Canada. Several researchers demonstrate the important role played by hockey in Canada, tracing the beginning of the sport back to when Canada was a new emerging country, and particularly at the time of Confederation (Howell 1995: 103, Saunders 2014: 6). At the beginning of the 18th century, British settlers started to use sports and social activities to impose a certain social control in Canada (e.g., importing the game of cricket). British values were found in these social activities, Robidoux qualifies them as "refined" and "gentlemanly" (2002: 214). It is in this context that hockey was chosen to be the Canadian sport; it was preferred because of its physicality, aggressivity and the masculinity that was revealed through the game.

[30] Tim Hortons is a quick-service and popular restaurant chain, serving coffee and doughnuts, which first opened in Hamilton, Ontario in 1964.
[31] A cup of coffee with a double serving of both sugar and cream.
[32] Surname given to young hockey players in Canada, or a donut made by Tim Hortons.

Indeed, Robidoux (2002: 214-219) argues that the violence found in hockey would implicitly express resistance against British nationalism and American hegemony (Saunders 2014: 6, Robidoux 2002: 221). In the course of its establishment, hockey becomes to be understood as "a metaphoric representation of Canadian identity" (Robidoux 2002: 219). Hockey has been Canada's national sport since 1994 and is depicted on five-dollar bank notes in Canada, which obviously links hockey to national identity (2002: 209). Robidoux concludes that hockey "serves as a potential symbol for national expression" in Canada (2002: 218).

However, despite its national role as an identity marker in Canada, hockey has been for a long time predominantly a white sport, as well as being a male-dominated sport, which raises questions of inclusiveness and racial diversity within Canadian hockey communities (see Chapter 11, section 11.3 for more recent discussions on the subject). In fact, racism in Canadian hockey is well documented (Robidoux 2012, Valentine 2012). Black players were excluded from the sport and in response, founded their own hockey league, the Coloured Hockey League (1894-1930). In 2007 only 5% of NHL players were from minorities and by 2013 this amount had more than doubled, reaching almost 10% (Poulton 2010: 119). However, hockey is also presented as a means of acculturation for immigrants (Saunders 2014: 16, Wong and Dennie 2021: 208), and is shown to be embraced by all the diverse cultures present in Canada (Jedwab 2007, Jedwab and Holley 2021) with initiatives to combat racism in hockey being undertaken throughout Canada (Wong and Dennie 2021: 185). Immigrants engaged in hockey feel more connected to Canadian identity, since it allows them to become members of local communities, giving them greater access to more interaction within Canadian society. This results in their having a greater sense of belonging (Wong and Dennie 2021: 208). Thus, 96% of immigrants affirm that hockey is intrinsically related to their Canadian identity, while only 73% of Canadian-born people think so (Wong and Dennie 2021: 199).

This chapter began with definitions of the concept of identity being understood as including either the individual or others. I have presented how the notion of identity is described in sociolinguistic studies and particularly how identity or identities have been studied in the different waves of sociolinguistics, as well as the role played by identity within communities of practice. Identity is a dynamic concept which is constructed and used by individuals to express an in-group or out-group membership. I have also demonstrated how hockey is a carefully constructed symbol in Canada, and its importance in the establishment of a Canadian national identity, through professional hockey and symbols such as Tim Hortons. Hockey became an important symbol in Canada, since it was chosen in response against British and American hegemonies, at the time Canada began to assert itself as a distinct country. According

to Robidoux (2002: 222): “hockey provides Canada a means by which to be distinguished”. The links between hockey and identity in Canada would help shed light on the association described by non-linguists and are therefore used in the discussion of the results of the perception component of this study.

The first part of this thesis has investigated diachronically and synchronically the origins and development of CE, as well as its status and features, with a particular focus on CR and the CVS. Additionally, I have discussed the concept of identity in sociolinguistic studies, and particularly in Canada. In the following part, part II, I present the methodologies adopted for my production and perception studies.

Part II Methodology

Chapter 4 Sociolinguistic methods

The present chapter offers a review of the literature review on the methodology used in sociolinguistic research but before outlining the framework of variationist sociolinguistics adopted as a basis for this study, it is helpful to go back in time to explore the origins of this field of research. This chapter finishes with the presentation of the PAC project (Durand and Przewozny 2012, Tarrier et al. 2019, Przewozny et al. 2020), its protocol and overall objectives, as this is the methodology I adopted for carrying out the collection and processing of the data for the production study.

4.1 The origins of variationist sociolinguistics

Variationist sociolinguistics developed in the 1960s and grew out of the fields of dialectology and dialect geography. The field of research of sociolinguists diversified and moved from a focus on geographical factors to an emphasis on the role of social factors in dialect variation. These are the aspects of the field that I discuss in this section.

Dialect geography (Chambers and Trudgill 1998: 13) is the subfield of dialectology which studies the spatial dimension of language. It comes from historical linguistic traditions and draws its data primarily, but not exclusively, from "nonmobile, older, rural, male speakers" (NORMs) (Chambers and Trudgill 1998: 30). These selection criteria are applied based on four assumptions. Speakers who never left their place of birth are more likely to represent accurately the speech of the community studied (non-mobile) and older speakers are believed to be the best sources of traditional forms of speech. Scholars thought urban speech showed too much variation due to speaker mobility, so the study of rural speech was preferred. Finally, male speakers were preferred because women's speech was considered to be more self-conscious. At that time, questionnaires were the primary tool for data collection, typically using a series of questions to elicit one-sentence responses. However, these studies, like other dialect studies, are limited in their representation of social variation and it became clear with more recent methodology that surveys focusing primarily on NORM speakers cannot allow for a representative sampling of the speech of inhabitants of a region. These concerns led to the introduction of a more social perspective with urban dialectology (Chambers and Trudgill 1998: 45) and later with variationist sociolinguistics. In parallel, large-scale dialect studies, focusing on lexical forms and mapping the geographical distribution of dialectal forms, responded to a need to codify the varieties and to produce dictionaries and atlases (Kendall and Fridland 2021:

74). Pioneering and influential works in dialectology include: Ellis's investigation of English and Scots dialects *The Existing Phonology of English Dialects* (1889), Gilliéron and Edmont's (1902-1910) fieldwork in France resulting in the *Atlas linguistique de la France* (*Linguistic Atlas of France*). Later, variation across dialects became central to the field of dialectology which also attempted to take into account social factors, such as the unfinished project of *The Linguistic Atlas of the United States and Canada* (Kurath 1949). Among major atlas projects there are also regional surveys: *The Linguistic Atlas of New England* (Kurath et al. 1939-1943), *The Linguistic Atlas of the Middle and South Atlantic States* (Kretzschmar et al. 1993), and the *Survey of English Dialects* in the United Kingdom (Orton et al. 1978). The data from these atlas projects are publicly available.

Following studies in dialectology, investigations carried out in sociophonetic studies became more technical and were conducted with more in-depth analyses using acoustic tools (Kendall and Fridland 2021: 77). The *Atlas of North American English* (ANAE) (Labov et al. 2006) is a good example of this type of survey, which gathers variants from across the U.S. and Canada and presents them on maps. It was the first survey to provide data from across Canada, based on phonological and phonetic criteria (Boberg 2019: 92). While generally confirming major dialect regions identified in earlier work (e.g., Kurath 1949, Carver 1987), this approach allowed a much more nuanced picture to emerge, with deeper insights into patterns of intra-regional and intraspeaker variation.

In the 1960s, several areas of expertise developed focusing on speech events in communities such as the ethnography of speaking, the sociology of language and variationist sociolinguistics, but dialect geography has continued mapping regional variation with modern computerised methods and using recorded speech. In the next sections, I will briefly describe the ethnography of speaking and the sociology of language and then develop the framework of variationist sociolinguistics as it is the approach implemented in this research.

The ethnography of speaking (Hymes 1962, 1972) is directly influenced by research in anthropology. Scholars spend time observing a community to gain access to the different speech events in context. As one of the first sociolinguists, Hymes studies how the speech event varies depending on participants, the place and the event, to understand the conventions and norms of interactions of communication in a community.

The sociology of language focuses on the speech of communities, and principally examines the relationships between society and different spoken varieties. Fishman (1968, 1972) is credited for founding this field of research. The data collection methodology used in these two approaches differs. Instead of observing the speech of a community, sociologists of

language collect data through large-scale surveys. Furthermore, scholars in this field of research are interested in investigating the ideologies and attitudes speakers can hold about language. This field is close to sociolinguistics, as it focuses on attitudes that non-linguists can hold (see Chapter 6).

As I show in section 3.2.1, Eckert (2012) distinguishes "three waves" in the study of language variation and change. Sociolinguists who work in the variationist framework are interested in variation that exists in language and they focus on the social aspects of language and its inherently variable structure (Trudgill 1974: 32). Briefly, the first wave studies the correlations of linguistic variables with social factors, the second wave applies an ethnographic approach to variation to examine variables in larger communities, and the third wave focuses on how speakers' use of variables conveys social meaning. These three waves do not represent a strict chronological sequence. Rather, they can represent different perspectives on the issues at stake in the study of language variation and change which can all be present in a given study depending on the researcher's particular focus (Kendall and Fridland 2021: 138).

I present the different approaches in the section 4.2 which follows. In this study, I adopt primarily a first-wave Labovian methodology in my collection of data and quantitative analysis of spontaneous speech but with the combination of a perception study and a production study, I probe into the social significance carried by linguistic variants in a CoP of hockey players.

4.2 The treatment of social meaning in variationist sociolinguistics

These following sections provide an overview of the treatment of social meaning in the three waves of variationist sociolinguistics (Eckert 2012).

4.2.1 Labov and the first wave of variationist sociolinguistics

A foundational theoretical work in variationist research is Weinreich, Labov and Herzog's (1968) paper, which takes as a starting point that within spontaneous speech there is some "inherent variability" that holds highly regular patterns. Their fundamental argument is that variation is not random but rather reflects "orderly heterogeneity". The authors outline the principles of a theory of language change which is centred on five main issues, some of which have now been resolved by scholars, while others still drive research: (1) "the constraints problem" (what are the limits to language change?), (2) "the transition problem" (how does change progress through a community or society?), (3) "the embedding problem" (how are linguistic changes linked to one another, and what are the correlations with social factors?), (4) "the evaluation problem" (are members of a community aware of linguistic changes and how

do they evaluate these changes?) and (5) "the actuation problem" (what are triggering events to linguistic changes?) (Weinreich et al. 1968: 183-186). Among these issues, (3) and (4) are particularly relevant to this study. I investigate the use of two linguistic variables by a group of hockey players and analyse correlations between their use and social factors (3). I also explore the knowledge and awareness that non-specialists have of linguistic variables (4) (e.g., CR).

Unlike linguists whose theoretical perspective is based on the theory that linguistic data are removed from the real context of speech, and is studied without variability, an assumption that Chambers (1995: 26-27; 2003: 12) terms the "axiom of categoricity", variationists rely on empirical and quantitative methods that are applied to data collected through fieldwork study. The linguistic variable is fundamental in variationist analysis (Labov 2006b, Chambers 1995: 12-25). A linguistic variable is category representing "two or more ways of saying the same thing" (Labov 1972: 188) and is sensitive to linguistic and social factors. The variants of a variable are those different ways of saying the same thing, such as the word "New York" realised with an "r" sound or without and "r" sound. Researchers define the context in which the variants are interchangeable, the envelope of variation, and measure frequency by the presence and absence of the variant. According to "the Principle of Accountability", the analysis must take into account the total number of contexts where the variant could potentially occur in the utterances within the sample (Labov 1972: 94). Thus, variationists focus on variation in order to discover systematic or predictable patterns, and to determine what social factors condition particular cases of variation while seeking to determine how such evidence can help explain language change.

Labov's research, which was very much influenced by work of Uriel Weinreich which with whom he collaborated in Weinreich et al. (1968), is a pioneer in the study of language variation and change in the first wave (Eckert 2012: 90). Labov initiated a tradition of quantitative studies which depend heavily on rigorous methods and data collection. He proposes the methodology of a semi-directed sociolinguistic interview based on a set of questions and some reading tasks (Labov 1966: 64). The sociolinguistic interview is an essential tool in sociolinguistics. In the course of the interview, the interviewer's goal is to elicit natural speech. To use Labov's terms (1972: 61), "our goal is to study the way people use language when they are not being observed." To achieve this, the researcher asks participants to complete different tasks in order to obtain samples of speech that vary in terms of the degree of attention to speech. For this reason, the first-wave approach has been qualified as the attention to speech model. Sociolinguists of the first wave ultimately aim to access the vernacular which is characterised as the most spontaneous speech of a speaker.

Labov's studies of Martha's Vineyard (2006a) and NYC (2006b) are considered to be founding works in the field. In the early 1960s, Labov went to the isolated island of Martha's Vineyard, off the coast of New England, to study variation in the English spoken there. He found out that certain Vineyarders centralised the diphthongs /ai/ and /au/ to express loyalty to the local community and to highlight their islander identity within the community of fishers and their opposition to the substantial number of tourists who visited the island in summer. Later, Labov also observed that the Lower East Side of NYC was socially stratified from lower to upper middle class (1966: 169) and representative of NYC in general. In order to characterise the variable realisation of post-vocalic /r/, he carried out preliminary studies using secondary random sampling, with 70 interviews combined with anonymous observations in three department stores, which were selected based on the socioeconomic profile of their customers. He hypothesises that the higher the social class of speakers, the more often they pronounce /r/ in final position. He declares: "we can hardly consider the social distribution of language in NYC without encountering the pattern of social stratification which pervades the life of the city." (1966: 169). His results show middle-class speakers tend to hypercorrect[33] their pronunciation and more realise their /r/, suggesting this variant is considered "prestigious" by these speakers. On the other hand, the variant is much less present in working-class speech. He concludes that the relationship between extralinguistic factors (social class) and linguistic factors (final position of /r/) plays a role in the variation process of the variable.

His study raises methodological questions. Since Labov aimed to study natural unmonitored speech, participants did not know they were taking part in a study, which posed an ethical problem. Nowadays, researchers using this technique would need to obtain the speaker's informed consent after getting their response. Although Labov's methodology was criticised, his work was duplicated in other sociolinguistic studies in which his methodology was quickly adopted. Among those who adopted his methodology, Trudgill (1974), conducted a large-scale sociolinguistic investigation of social class and language use in Norwich, and investigated the role of SES and gender in conditioning the (*ing*) variable. His findings indicate that lower social class speakers produce significantly more occurrences of the low-status variant /n/, and that the prestige variant with the velar nasal is more frequent in higher social classes and women's speech regardless of their social class.

In brief, sociolinguistic studies of the first wave apply a rigorous methodology, first developed in dialectology studies. They carry out sociolinguistic interviews, an innovative

[33] The phenomenon of "hypercorrection" appears when speakers are aware of prestige variables that cause feelings of linguistic insecurity about the stigmatised features that are part of their vernacular (see sections 6.3 and 6.5).

methodology, and collect data in order to investigate correlations between linguistic variables and predetermined macro social categories (age, gender, SES, etc.) in the communities investigated. The first wave includes a considerable number of empirical studies by Labov and Trudgill and many other scholars.

The two other waves of sociolinguistics call the first-wave methodology into question and propose improvements to the study of language variation. Second-wave studies suggest that a closer examination of the local communities should be carried out.

4.2.2 Ethnographic fieldwork in the second-wave approach

The second-wave approach is a response to methodological issues identified in first-wave studies, and particularly the fact that first-wave studies focus on language variation within broad predetermined socio-demographic categories. Instead, second-wave studies investigate the local and social organisation of the communities and naturally occurring speech. Their methodology is described by Eckert as follows: "ethnographic fieldwork focuses on finding out what is worth sampling" (2000: 69). This approach entails immersion in a community. In Eckert's terms, the researcher aims "to get closer to the local dynamics of variation" (2012: 90), as these linguists take an insider's point of view to explain the inherent variability of language. Their work goes beyond predetermined social categories, and long-term observation is required to focus not only on linguistic behaviour but also on practices and cultural habits, to seek explanations for broader patterns of variation. Social categories or identities emerge from observation of local communities. Wolfram (2010: 307) points out the benefits of this research in terms of developing a deeper familiarity with the community. Moreover, second-wave studies share with the first wave a quantitative approach to data analysis, and the amount of data collected allows in-depth descriptions of language use, as well as the observation of the social and cultural environment with the aim of understanding variation in the community. While long-term observation would no doubt yield valuable insights into Canadian HE, due to the time needed to gather and analyse the data, it was not possible to include such an approach in this study.

Second-wave studies shift towards more qualitative analyses and pay particular attention to "speech communities" and "communities of practice" (CoP) (Kendall and Fridland 2021: 100). I devote this section to defining both terms and relate them to sociolinguistics and to my study. Both concepts complement each other, and there are similarities in these two concepts. Speech communities are related to social categories and these categories are also found in CoP, but these communities go beyond the macro social categories which are not considered as

important (Eckert 2009: 111). Despite the role of notions of speech community in sociolinguistic studies, there is no agreed-upon definition, but the general consensus is that the scope of a speech community should go beyond language use; it should encompass social norms used and should take into account the perception of the speakers within the community. In early work in the area, Gumperz (1971: 125) describes a speech community as "a social group which may be either monolingual or multilingual, held together by frequency of social interaction", Labov (1972: 121) notes it is the "participation in a set of shared norms". While Gumperz focuses on the individuals' frequent interaction this is not the case of Labov. Hudson (1980: 27) agrees with Labov and notes that speakers will share similar speech patterns as members of their speech community. In fact, a speech community is comprised of "insiders" who are at the core of the group, engaged in this social community and who share the linguistic features of the group; and of "outsiders" who tend to be more conservative and not to be fully integrated into the speech community.

On the other hand, the term, "community of practice" was coined by Lave and Wenger (1991) when discussing the process of social learning, describing how communities integrate new members and how members of a community share common interests and contribute to this community. Following Lave and Wenger (1991), Eckert and McConnell-Ginet (1992: 464), in their research on language and gender, propose the following definition of the concept: "an aggregate of people who come together around mutual engagement in an endeavor. Ways of doing things, ways of talking, beliefs, values, power relations—in short, practices —emerge in the course of this mutual endeavor". Eckert and McConnell-Ginet add the dimension that people are members of several CoPs. The authors also highlight the relationships that bind the members of a community together, referring to such ties with the term "mutual engagement", a concept also developed in Wenger's work (1998). Indeed, Wenger (1998: 76) elaborates on three notions at the heart of the concept of CoP: shared repertoire, mutual engagement and joint enterprise. In sociolinguistic studies, the notion of CoP offers a framework to better understand language variation as well as understanding how becoming a member of a community is influenced by the use of the sociolect used in this community (Holmes and Meyerhoff 1999: 175). Furthermore, Eckert and McConnell-Ginet (1995: 470-471) argue that individuals' speech reflects their association with a CoP and consequently a dissociation from other CoPs. As a result, all members do not have the same status in a CoP, some are core members and others are just peripheral members (Lave and Wenger 1991), which certainly explains why Holmes and Meyerhoff (1999: 180) state that researchers can develop indexes to measure the degree of integration of speakers in CoP.

While CoPs share some notions with social network analysis (Milroy 1980), Holmes and Meyerhoff (1999: 179-180) focus on the notion of interaction to distinguish these two concepts. Social networks indeed emphasise a quantity of interactions (density and multiplexity) whereas CoP is centred on the quality of interactions. In her research, Milroy quantifies the relationships and interactions members of a speech community can share in order to investigate their impact on language change. She finds that linguistic variation in such communities correlates with the density, which is the number of social connections among members of the community and the multiplexity, that is when members know each other in more than one network of social network ties. In her Belfast study, her findings reveal that the more integrated members are in their speech community, the more casual their speech is. Indeed, she demonstrates that "the closer an individual's network ties are with his [sic] local community the closer his [sic] language approximates to localised vernacular norms" (1980: 175). Milroy concludes that network ties have a stronger influence on variation than the macro categories into which speakers were grouped in first-wave sociolinguistic studies.

An important ethnographic study is the one conducted by Eckert in Belten High School in Detroit from 1989 to 2000, in which she focuses on white adolescent speech. Based on observations in the community, she identifies two groups: the Jocks and the Burnouts. Jocks have a very school-oriented identity with a network built on school themes whereas Burnouts reject this school identity and aspire to an urban identity in relation to the neighbourhood. Her study reveals that the impact of the SES of the parents and the role of class in adolescents' speech variation are limited compared to the influence of the social groups they interact with (1989: 171-212). The adolescents' speech is constrained by the socioeconomic class of their parents, but it is not determined by it. She agrees with Milroy and notes that social networks have "a norm enforcing power" (Eckert 2012: 91).

Cheshire's work is also a representative example of second-wave study of language variation. Cheshire (1982) studies grammatical variation in the speech of working-class adolescents who frequent two local parks in Reading (England). She concludes that positive values of vernacular and speech variation are closely tied to speakers' participation in an "anti-authority" vernacular culture. Her findings reveal gender differences, as boys use more non-standard forms than girls do.

Another important interest that could be situated within the second wave of variationist sociolinguistics is the role of the speaker in style shifting. In a response to Labov's model, where style-shifting is a response to the degree of attention paid to speech, Bell's audience model (1984) proposes that style-shifting occurs in response to an audience: speakers adjust

their speech according to their interlocutors: “speakers take most account of hearers in designing their talk” (Bell 1984: 159). Bell’s communication accommodation theory or speech accommodation theory (1984) highlights the importance of the audience in the speech process. According to this model, also called the “audience model”, speakers will either linguistically converge, if they align with the audience, or diverge if they put social distance between themselves and their audience. Scholars of the second wave argue the speakers show initiatives in response to the audience.

Even though accommodation may be an unconscious process, Kendall and Fridland (2021: 136) present audience design as a “responsive model” just like sociolinguistic interviews, which means that the speakers are indeed constructing their speech according to someone else’s. As noted by Schilling-Estes (2013: 450-451), speech is half someone else’s. Like the first-wave model, the second-wave approach has been criticised. For instance, Schilling-Estes (2002) criticises the audience design approach, arguing that the model is responsive just because the speakers adapt to their audience, but they do not change their style spontaneously, while the third-wave approach adopts a perspective of speaker design which considers that style is the product of the speakers and is central to the study of language variation. Style has been defined as not exclusively restricted to language but rather depends on a combination of multiple social resources (clothes, behaviour and language) (Eckert 2002: 4). According to Irvine (2001: 23-24), speakers manipulate these resources, commonly called “style”, in order to distinguish themselves. Coupland (2007) investigates style to better examine how speakers project different identities.

The notion of CoP is essential to my research, since I believe the community of hockey players to exceed the macro social categories (i.e., gender, age, SES, etc.), as suggested by Holmes and Meyerhoff (1999), I design an index to measure the speakers’ engagement with hockey, their affiliation with this hockey players community at large (see Chapter 5, section 5.2.2). because I understand that all members do not have the same role and sense of belonging in the community and that would affect their speech.

To sum up, both the first- and second-wave approaches observe that language behaviours are a response to an audience or a situation. However, speakers are not yet seen as having an agentive role of performing to construct an identity, a role to which interest is shifted in the third-wave approach to sociolinguistic variation. Eckert (2019) notes the difference between “feature-based views”, in which the interest is the linguistic phenomenon, its occurrences and the frequency of occurrence, and “gestalt views” in which speakers are the centre of the

investigation, with a particular focus on how they perform identity. This leads me to a consideration of the next wave in the study of language variation and change.

4.2.3 Characterological figures and indexicality of variables in the third-wave approach

The findings of second-wave studies result from ethnographic work, a component that is shared by the second- and third-wave approaches. The third and most recent wave addresses the social meaning of variation and speakers' agentive role in particular examined through a stylistic perspective starting from the premise that speakers make conscious decisions to express different identities with the use of linguistic variables. Indeed, the notion of "style" in the third-wave approach is a dynamic process which emerges in a social context and changes in response to different linguistic situations (Eckert 2019). Coupland (2007: 10) criticises the traditional sociolinguistic view that associates a variable with predetermined macro social categories or a geographical area and is based on a static treatment of meaning. According to him, the speaker's role should not be underestimated (2007: 4) as style is performative and is used to create personas. These third-wave scholars argue that active speakers produce different variants to perform distinctive styles and they consequently create several identities. They agree with the definition of "acts of identity" given by Le Page and Tabouret Keller: "a linguistic behaviour is a series of acts of identity in which people reveal both their personal identity and their search of social roles" (1985: 14). In addition, Eckert notes that "individuals are not born with distinctive features, but they develop them to differentiate" (2012: 95). In brief, these scholars agree that membership in a community is constructed, and that individuals in the group distinguish themselves from other individuals outside the group linguistically, whereas members of a group mutually reinforce the use of a given linguistic variant in order to signal membership in the group. Central to third-wave studies are the concepts of indexical order, enregisterment and indexical field.

Silverstein (2003) is the founder of the "orders of indexicality" (2003). Prior to his work, Labov (1972: 248, 2001: 196) proposed three categorisations of linguistic variables: "indicators", "markers" and "stereotypes", which he understands as a continuum in terms of degree of speakers' level of awareness of the features. These categories can be aligned to Silverstein's indexical orders. In fact, "indicators" are indicative of a group, either social or dialectal, when used by speakers but there is no particular association made with "indicators". They do not pattern with stylistic variation and speakers are unaware of these variables which are below the level of conscious awareness. The CVS and the low-back merger in CE (see

Chapter 2, section 2.1.2) are examples of indicators. Nycz (2016: 72) shows that participants have little availability of the low-back merger (2016: 75), as well as the CVS. Her participants do not spontaneously mention these variables, and do not comment on them, even in a conversation about linguistic contrasts. This notion of "indicator" echoes Silverstein's first order indexicality in which the occurrence of a variable is associated with macro social categories and indexes association with these categories, representing the first association of a variable.

Second order indexicality means the variable has an additional indexicality as it has been "enregistered" (the notion of enregisterment is defined in the section below) and is now associated with certain styles to express the social meaning with which it has been associated. In other words, speakers begin to use the first-order index stylistically. Such variables constitute "markers", and they are above the level of conscious awareness. Consequently, they show stylistic variation as they carry social connotations and are associated with a social group or a dialect for instance. Speakers use "markers" because they are socially meaningful (e.g., for example, the use of glided or glideless variants in CE).

Third order indexicality represents the level in which speakers use the variable knowingly; it is explicitly associated with a register (i.e., a particular communicative situation) or a group. This includes "stereotypes", linguistic features that are subject to epilinguistic comments, and of whose existence and usage speakers are aware (e.g., *eh* and CR in CE). Stereotypes are developed in Chapter 6, section 6.3.

In brief, a variable does not index only one social meaning but several which coexist, forming an indexical field. Eckert provides the following definition: "the meanings of variables are not precise or fixed but rather constitute a field of potential meanings – an indexical field, or constellation of ideologically related meanings, any one of which can be activated in the situated use of the variable" (Eckert 2008: 454). She emphasises the importance of variation. The social meaning associated with a variable is not fixed; therefore, indexicality is a dynamic process. Likewise, Silverstein does not present the orders of indexicality as linear and Tagliamonte (2006b) further notes that variables change, and their perception evolves so their classification in one or the other category is not fixed.

As I just said, for a variable to become a marker, to acquire its second order indexicality, the variable needs to be "enregistered". The concept of enregisterment, developed by the anthropologist Asif Agha (2003), refers to the processes whereby a feature or a set of linguistic features, which was previously unnoticed by a community of language users, begins to be recognised as a feature of a persona, because different speakers use this or these features

repeatedly to convey the same meaning. As a result, they become "socially recognised as […] indexical of speaker attributes" (Agha 2005: 38). That results in the creation of "characterological figures" (Agha 2003: 243) or what is termed "personas" by Eckert (2008: 455-456). A persona is a dynamic concept that speakers choose to perform. This persona represents the role, including social and linguistic characteristics, taken on by the speaker in public to create a representation or a particular image. D'Onofrio (2018) adds that it is an "interactionally significant social construct." According to Agha, a characterological figure is an "image of personhood that is performable through a semiotic display or enactment" (Agha 2007: 177). Characterological figures are formed through speech and social characteristics and embody a form of language, which means in the process of creating a characterological figure, a linguistic feature or a set of linguistic features are recognised as indexing particular identities, meaning they can be associated with a person or a group. This archetype can be created from typical users or can be imagined and triggered by caricatured representations. Variables highly enregistered, commonly called stereotypes, are then associated with speakers and inversely the speaker who is associated with a larger group related to a way of speaking (Agha 2003: 220).

Bucholtz's (1999) and Podesva's research (2007) are representative of this third-wave approach. Bucholtz (1999) studies a group of girls in a California high school and how they perform a nerd identity. Her study reveals that although none of the linguistic features chosen by these girls is at first associated with a nerd identity, it is in fact the combination of several features (e.g., /u/ fronting and /t/ release) which creates that identity. In the same vein, the author shows how European American teenagers may use African American Vernacular English features to perform a hip-hop identity. Similarly, Podesva (2007) focuses on a case study based on a single speaker, Heath, a medical student, to investigate intraspeaker variation. His findings show that there is stylistic variation in Heath's speech according to the speech situation. Podesva finds significant differences in Heath's use of /t/ release in a professional setting and when he is at a barbecue with friends.

Drawing on two studies, one in the Canadian context and the other one in the hockey community in the U.S., I present in this section the indexicality of variables and the role of social identities in a sound change. These findings are important for my own research as I hypothesise that hockey players participating in my production study may use CR to index a hockey identity.

As discussed in section 2.1.1, Clarke (2011: 226) shows that glided and glideless variants are no longer associated with British and American varieties in Canada. However, they index social meanings, and speakers use them to create stylistic identities. Clarke shows that usage

varies in different styles and different meanings are associated with the variants depending on the surveyed population (2011: 236). Although the glided variant suggests erudition and education it is not viewed as a feature of formal style whereas the glideless variant is used to express more casual speech. Clarke argues that a large-scale study is required to better understand the use of these variants among different Canadian groups.

Following Silverstein's approach, Bray (2022) investigates Canadian variables in the speech of American hockey players. He proposes to reanalyse geographical variables (usually associated with Canada) as indexing a hockey-based persona. His results demonstrate that American hockey players do not see the variable (CR) as indexing a geographical area, Canada, but instead it is perceived in reference to hockey, thus leading Bray to conclude that the variables index a hockey-based persona. Thus, his perception findings corroborate some of his production findings as American hockey players display some typically Canadian variables, such as CR. On the other hand, he did not find that the CVS was reinterpreted by American hockey players to indicate a hockey persona (2022: 206).

The different approaches, I have just presented, therefore offer different perspectives on sociolinguistic issues. Labov's work on Martha's Vineyard (Labov 2006a), is part of the first wave as it is a precursor work in quantitative studies, but Eckert proposes to reinterpret his work as avant-garde of the third wave, because of Labov's focus on local identities and his interest in the social dimension of the sound change. The centralisation of the pronunciation of the diphthongs is likely to be a response of some members of the community to the increased presence of outsiders present on the island. Therefore, the speakers' production of centralised vowels was used by certain islanders to express an identity in accordance with solidarity and inclusion within the island. At the same time, they express an opposed stance, against tourists who do not share this pronunciation thus insisting on their islander identity. From this perspective, Labov's study can be apprehended as a pioneer work in identity. This social meaning of opposition carried out by the linguistic variable could then be extended to another group to index opposition generally.

In these sections, I have shown how the three different waves investigate variation, as well as their founding principles. I have also illustrated each approach with some examples of studies and how I apply them in this research. In section 4.3, I focus on the methodology applied in the PAC programme, as the collection of data for my production study is based on the PAC-LVTI protocol.

4.3 Principles and objectives of the PAC programme

This dissertation is a sociolinguistic study based on the methodology of the international PAC (Durand and Przewozny 2012, Tarrier et al. 2019, Przewozny et al. 2020) programme. It relies on fieldwork and contributes a survey of a new location to the database of that programme. The PAC programme, founded in France in 2000, is an international programme focused on phonology and phonetics which aims at describing the wide range of varieties of English spoken in the world. This programme is modelled on the French Projet-PFC (Phonologie du Français Contemporain) which shows how a corpus conceived for phonology purposes can be extended to other areas of linguistic research. The two programmes share the same principles, objectives and aims. Further information can be found on the project website (http://www.projet-pfc.net). The PAC project is based in four French universities and coordinated by Anne Przewozny-Desriaux at University Toulouse Jean Jaurès, Sophie Herment at Aix-Marseille University, Sylvain Navarro at University de Paris Diderot and Cécile Viollain at University Paris Nanterre. It also maintains international partnerships with North-western Polytechnical University in Xi'an Shaanxi, China and through this research with the University of Western, Canada. PAC includes linguists from various fields and is composed of five thematic research groups: PAC- LVTI (PAC-Langue, Ville, Travail, Identité/ Language, City, Work, Identity), IPCE-IPAC (InterPhonology of Contemporary English/ InterPhonologie de l'Anglais Contemporain), PAC-ToE (PAC-Teaching of English), PAC-Prosody, and PAC-Syntax.

The thematic research group of PAC-LVTI is coordinated by Anne Przewozny-Desriaux, Jean-Michel Tarrier, Hélène Giraudo and Jacques Durand (CNRS and Université Toulouse II-Jean Jaurès). This research programme focuses on the sociolinguistic description of language in urban contexts, and its interview protocol has recently been revised and incorporated into the PAC questionnaire to serve as the main interview guide to collect native varieties of English. PAC researchers use a common protocol for every location surveyed and they apply the same transcription and annotation guidelines and tools in order to obtain comparable data. The PAC corpora are hosted in a PAC archive, a database accessible only to the PAC members. Currently, the PAC programme has surveyed 42 locations across nine countries and 514 speakers have been interviewed.

4.3.1 Common protocol

Inspired by Labovian methodology and emulating the PFC project, the common PAC protocol is composed of four recorded tasks, an approach consistent with Meyerhoff et al.'s

(2012) recommendation that the data gathered contain at least four parts: a wordlist with minimal pairs, a wordlist with words in isolation, a narrative, and a conversation with the interviewer. These four tasks and their order are chosen to elicit the least guarded, most natural, and spontaneous speech of the participants. In fact, the tasks become increasingly informal throughout the recording session, which allows researchers to study different linguistic styles: from maximum attention to very reduced attention to speech.

In the first task of the PAC protocol, the participants are invited to read aloud two wordlists (see Appendix A.2-A.3). These wordlists are designed for the study of segmental phonology. The first one is composed of 129 items, and was created to examine the vowel system, presenting minimal pairs to participants, whereas the second wordlist focuses on consonants and is composed of 64 items. These lists were designed to study speakers' pronunciation in a controlled situation, with a high level of formality. "Careful speech" is collected as participants are aware their speech is being recorded in order to be studied.

The second task is the reading aloud of a single-page text. This text was adapted from a newspaper article, entitled "A Christmas interview" (see Appendix A.4). It was modified to allow comparisons with the wordlists, as well as to study specific phonological and phonetic phenomena in connected speech. Participants are encouraged to read the text before they read it aloud. This encourages fluency by drawing speakers' attention to their reading performance and not their actual pronunciation.

The third task is a semi-directed conversation of approximately thirty minutes between the participant and the researcher (see the set of questions in Appendix A.5). Researchers first gather sociodemographic information about the participants. Then, they collect samples of speech which vary in their degree of formality. Following the set of questions of the PAC-LVTI questionnaire, participants are asked questions about their occupation, the city and neighbourhood they live in, their language and identity. The conversation can extend to other topics, and researchers are encouraged to maintain a steady flow of conversation.

The fourth and final part of the protocol is a one-on-one conversation (termed informal conversation in PAC protocol) of approximately twenty to thirty minutes between two participants who know each other personally, without the researcher being present, and without any pre-selected topic of discussion in order to turn the interview into a more natural verbal exchange. Participants interact freely and interrupt each other while talking about their everyday lives and discussing topics that would not have been mentioned with the external interviewer. This task allows the researcher to overcome some of the limitations of the structure of an interview.

As Milroy and Gordon (2003: 49) point out, it is extremely difficult to collect spontaneous speech for two main reasons. First, the researcher is a stranger to the participants and second, the participants are aware that they are being recorded. Labov labelled the influence of the interviewer in the interview as the Observer's Paradox (1972: 210-211). This raises questions about the relationship between the researcher and the interviewees, especially the pre-established roles and tensions which result from the context of the sociolinguistic interview (its structure and its function). As observed by Schilling-Estes (2008), the interview leads to interactional power asymmetries. Typically, the researcher asks questions and controls the interview.

In my own specific role as a researcher, as suggested by Labov (1984: 40), I sought to assume "the position of the interviewer as a learner, in a position of lower authority than the person he [sic] is talking to", to encourage speakers to be spontaneous and casual. First, as an out-group member of the hockey community, with little knowledge about hockey, I assumed the role of the learner who is avid to learn more about an unknown subject. The speakers were willing to share details about their sport as they came to the interview with a desire to talk about hockey. Another fact emphasised by Labov is that speakers pay less attention to their speech when they are personally involved in the topics being discussed, focusing more on the content of their speech than on its form (Labov 1966: 68). Secondly, I am younger than most of the participants of my corpus which also seemed to provoke a shift in the power roles in the interview. Moreover, a few participants were interviewed with a friend or family member they brought for the informal conversation, and it also seems that led to higher quality interviews with better dynamics as the group discussion elicited more casual speech (Labov 1966: 68).

Although I am not a native speaker of English, and this may have led participants to modify their way of speaking in their interactions with me, I am the sole researcher for this study which ensures uniformity throughout the interviews. Moreover, the informal conversation was another means to balance the impact of the interview and collect more natural speech.

4.3.2 Additional material to the PAC protocol

The PAC protocol can be extended to study a specific variety. For instance, Przewozny (2006) incorporates in her protocol another wordlist which targets the TRAP vowel and /t/ to study Australian English. Following Rouaud (2019), who uses a third wordlist (Appendix A.7) of 30 items in order to focus specifically on CE vowels, I adopt this third wordlist and supplement the formal conversation with various questions on hockey to get a sense of the participants' involvement in the sport. The set of questions is provided in the Appendix A.8.

Finally, at the end of the interview, before the informal conversation, I added two perception tasks (a map task and rating scales). The advantages of these two perception tasks are outlined in Chapter 7.

In conclusion, this chapter has outlined the theoretical framework of this dissertation, describing the historical roots of sociolinguistics and the three waves of variationist sociolinguistics, noting not only the central role of social factors and their correlations with linguistic variables, but also the key role of speakers seen as agents who can choose from elements of their linguistic repertoire to construct their identities according to the situations in which they find themselves. This chapter has presented the methodologies applied to the production component of this research, with a focus on the common protocol of the PAC project that was taken as a starting point, with the inclusion of additional material to address specific issues of the project.

After this presentation of the methods and the protocol adopted for the study, I present in the next chapter its application in the PAC-LVTI Ontario (Canada) Hockey English Corpus.

Chapter 5 PAC-LVTI Ontario (Canada) Hockey English Corpus

In this chapter, I present the Ontario (Canada) Hockey English Corpus and I outline the methodology used in the data collection. I begin by describing the recruitment of speakers, the collection of data and the profile of the speakers; general information about the speakers of the corpus is presented in terms of the sociolinguistic factors of gender, age and geographical distribution. These factors are presented and examined separately but as noted by Chambers (2009), their conditioning effect on variation should also be investigated altogether since the factors tend to interact with each other. To finish, this chapter provides a description of the acoustic tools and methods I implement in the analysis of the corpus.

5.1 Fieldwork

The PAC-LVTI Ontario (Canada) Hockey English Corpus is a collection of audio-recorded interviews which I collected between October and November 2019. Nineteen speakers were recorded using a Zoom H4 recorder. This corpus is a new addition to PAC-Canada (Rouaud 2019, Miletic 2022). Moreover, PAC-LVTI corpora aim to be cumulative and to collect speech from 60 to 120 speakers over time. This hockey CoP could then be the focus of future corpus collection.

Before recruiting participants, researchers should carefully consider that the sample accurately addresses "the relationship between research design and research objectives" (Milroy 1987: 18, Milroy and Gordon 2003: 24). Bearing this in mind, I included a sociolinguistic question (do hockey players realise more typically Canadian phonetic features of CR and the CVS) to address this, and I needed to collect a set of data from the hockey CoP to address this question (Tagliamonte 2006b: 17-18).

5.1.1 Community selected

This section presents the reasons that inspired me to study this group of hockey players in London, Ontario. As specified by Viollain (2014: 319), within PAC, the first criterion to bear in mind when recruiting participants is to make sure that they belong to the community under study. This study focuses on the sociolect of a specific group within Canadian society: anglophone ice hockey players, supposing that speakers of the CoP of hockey players would use a variety associated with this particular social group. The interest in this community emanates from the associations explained in the introduction of this dissertation; Canadian non-

linguists describe strong links between hockey and sounding Canadian. As seen in Chapter 3, section 3.4, hockey is a unifying force and a defining element of many Canadians' identity, an identity which, I assume, can be reflected in diverse ways of speaking CE, especially within the CoP of hockey players.

As explained in Chapter 4, section 4.2.3, speakers can use linguistic features in a conscious way to maintain solidarity or to perform identity (Eckert 2012: 21), or to quote Schilling's words (2013: 18) "a particular social group relies on creative linguistic usages as a part of its distinctive group identity". Thus, a sociolect is defined as being constituted by the similar linguistic features and patterns used by a social group that allow for mutual intelligibility and signalling of group identity.

In addition, I selected London as the fieldwork city in order to be able to use my personal network to facilitate recruitment of participants. London is the 11th largest city in Canada and, with a population of 383,822 (2016 Canadian census), it is the largest Southwestern Ontario municipality (see Figure 5.1). Ontario is the most populous province in Canada with 38.5% of the Canadian population (2021 Canadian census) (14,223,942 inhabitants). Also, Ontario has been one of the Canadian provinces receiving a great deal of attention lately in sociolinguistic research and therefore that would provide comparisons with findings of recent variation studies (Ontario Dialects Project, Tagliamonte 2002-). Moreover, London produces NHL players[34], and plays a leading role in Minor Hockey[35]. However, the initial plan was to recruit professional or semi-professional hockey players from the London Ontario Hockey League team, the London Knights, and the Western University female and male hockey teams which play at highly competitive levels. Unfortunately, due to difficulties in establishing contact with team administrators and obtaining access to their training sessions I was forced to abandon this plan and to focus on hockey players who play in less formally organised leagues.

[34] https://medium.com/the-cities-tribune/hockeytowns-where-nhl-players-come-from-99707d7c2713

[35] Amateur ice hockey played below the junior age level (under 21). In Canada players are classified in age divisions.

Figure 5.1: Detailed map of Canada showing the 10 provinces and three territories, with Ontario in yellow. The red arrow shows the location of the city of London. (a copyright-free image from Wikipedia).

5.1.2 Participant recruitment

As soon as the approval for the study (project ID 113525) was obtained on July 3rd, 2019, from the Western University Non-Medical Research Ethics Board (certificate in Appendix A.6), the recruitment of participants from the hockey community began.

Inclusion criteria

The inclusion criteria for the study are the following: participants must be 18 years of age or older and must be hockey players. In this research, a hockey player is defined as someone who plays in a professional or non-professional team, or who is a member of a hockey team or has been a member of a team within the last 10 years, or who plays hockey at least occasionally. Potential participants must have been born in Ontario and have grown up in the same region, e.g., lived there from at least age 8 until age 18. They must be native speakers of English.

5.1.3 Sampling techniques

Previous studies (Chambers 2003, Milroy and Gordon 2003) have indicated true random sampling is methodologically very challenging in sociolinguistic studies, as it requires much

time and many resources to implement. Random sampling involves the use of a suitable sample frame enumerating the population, such as an electoral list or a telephone directory, with every member of the sample frame having an equal chance of being selected for the study. Therefore, as noted by Chambers (2003: 33), judgement sampling has become "the consensus in the field".

In a judgment sampling, researchers have knowledge about the community studied and they identify the type of speakers they want to investigate using the theoretical framework to justify their choice. However, they still need to ensure representativeness as they select speakers, according to demographic factors such as age, gender and social class. Judgment sampling is often combined with the friend-of-a-friend method (Milroy 1980) or snowball technique (the implementation of these methods is described below), whereby participants are invited to ask other persons who may be interested in participating in the study to contact the researcher. In this way, a single individual can be extremely helpful in moving the recruitment process forward.

In this study, I applied a judgement sampling method, combined with a friend-of-a-friend method. Finding and recruiting participants corresponding to the inclusion criteria presented a number of challenges which I had to overcome.

Recruitment methods

In the first phase of recruitment, posters explaining the study requirements were posted in public arenas, community, and recreational centres, as well as on the Facebook social media networking site (see Appendix A.1). Then I contacted hockey team administrators and coaches, using contact information publicly available through the websites of hockey leagues, asking them to forward the recruitment message to potential participants. Unfortunately, I was unable to contact and obtain consent from a sufficient number of participants through these restricted means.

In the second phase of recruitment, I spent time in public and private arenas where I applied a reverse passive snowball strategy. I spoke directly with third parties (coaches and hockey team administrators) and asked them to share my recruitment information with their players. I also talked to potential participants between games. Enrolled participants help in the recruiting of additional participants, as they forward study information to potential participants. This method of recruitment turned out to be the most effective, as participants could see that the study was led by an actual person, rather than just a name on a poster. Potential participants came up to me to get more information on the study or to express their desire to participate in the study.

Using the friend-of-a-friend method, I was also put in contact with a participant who occupies a leadership position in the "Huff N' Puff"[36] association. Thus, he assumed the helper role and introduced me to other players at the arena. This recruitment, based on mutual acquaintance introduction, led to eight members of the "Huff N' Puff" consenting to participate. This participant's role was fundamental in the recruitment process and enabled me to develop a small network where I succeeded in being considered as an insider. I often met the participants once before interviewing them, and I found that becoming acquainted with them beforehand led to more personal and better-quality interviews. I managed in this way to become part of the community and I was even invited to their monthly brunch. Moreover, a few participants remained in contact through emails during the study and after being interviewed.

Location

The majority of the recordings were carried out at a public rink, where it was the most convenient for the players, in a former dressing room with padding on the floor, which gives a good sound quality. I also recorded a few participants at their home or at their office.

5.2 Description of the speakers of the corpus

The following sections begin by presenting the traditional social factors studied in variationist sociolinguistics, followed by a discussion of hockey as an independent variable.

5.2.1 Traditional social factors

Gender

Sociolinguistic studies examine gender differences in language use, since many studies have shown linguistic variables vary according to gender, and that men and women have distinct roles in linguistic change (Eckert 1989: 248, Trudgill 2000: 73). Labov (1990, 2001:266) presents three principles that reflect the effects of gender in linguistic change in stable variation. The first principle states that women use a lower number of stigmatised variants and a higher number of prestige variants compared to men (Labov 2001: 266), the second principle attests that in conscious changes occurring in the language, women are more likely to adopt the incoming prestige forms (Labov 2001: 274), and finally the third principle shows that in changes that occur below the level of consciousness of the speakers, there is a tendency among women to use the innovative forms.

[36] The "Huff N' Puff" is a senior fitness association for people aged 55 and older, which offers forty different activities, one of them being hockey.

However, there has been considerable discussion in sociolinguistic research calling into question the notion of the male-female binary as a conditioning factor in variation studies, because this binary is based on a structuralist approach which uses macro categories to explain variation. Kendall and Fridland (2021: 108), for example, advise caution when interpreting the conditioning effects of sex/gender on variation because interactions between gender and other social variables can be complex. They also remind us, as other scholars have before, that sex is a biological category and gender a cultural concept, a dimension of a person's identity that is constructed (2021: 107). From this constructivist perspective, the authors call into question the idea of gender being binary (2021: 109). Instead, it is a dynamic aspect of a person's identity, allowing for many subtle differences. They point out the inadequacy of the male-female binary which does not always adequately acknowledge the socially constructed nature of gender. The inadequacy of this binary view becomes particularly evident when one considers the work of scholars such as Zimman (2013, 2017), who studies transgender voices and how they contribute to the construction of identity.

For the sake of exactness and attention to gender diversity, an additional question was added to the PAC questionnaire asking participants to state the gender they identify as. All speakers identified their gender as being the one traditionally associated with their biological sex (e.g., their gender assigned at birth), thus allowing me to establish a direct correspondence between sex and gender for this sample of participants, without disregarding the possibility of non-binary and other gender identities in the community. The corpus is reasonably well-balanced in terms of gender, with 10 men and nine women.

Age

Age has been a key social variable from the beginning of variationist sociolinguistics, its key role being to show generational differences, with the notions of "real-time" and "apparent-time" studies underlying the examination of a change in progress. A real-time analysis is a diachronic analysis based on speech samples gathered at two points in time (e.g., the 1971 and 1994 Montreal French corpora). An apparent-time analysis is synchronic, based on Martinet's notion of "la synchronie dynamique" (1990) where differences between generations in the use of a variable observed at one point in time serve as evidence of language change (Labov 1994, Bailey 2002). While generational differences in apparent-time studies reflect a change in the use of the variable in the language over time, there are variables correlated with age that do not indicate an apparent-time change. Rather, these reflect stable forms of the language for which speakers change in their linguistic behaviour across their lifespan. Such variables are said to reflect age grading.

From the standpoint of sociolinguistic methodology, age is a relatively straightforward variable, and generally two methods are used to classify participants. Speakers can be grouped into arbitrary age groups by decades, or alternatively, following Eckert's point of view (2000) the researcher can seek meaningful ways of analysing age from a life stage perspective. In this study I apply a combination of both methods. The oldest speaker in the corpus is 68 years old (KE1) and the youngest speakers are 22[37]. As indicated in Table 5.1, the corpus is divided into two groups: [under 40], nine participants recently in working life or students who rent their place and [over 40] 10 participants being working age adults or retired participants, homeowners.

	Over 40	Under 40	All ages
Men	4	5	9
Women	6	4	10
Men+Women	10	9	19

Table 5.1: Speakers of the PAC-LVTI Ontario (Canada) Hockey English Corpus by gender and age.

Residence and birthplace

In this study, the speakers of the corpus all belong to what I call the hockey community, and their place of residence or birthplace does not exclude them from taking part in the study. All the speakers in the PAC-LVTI Ontario (Canada) Hockey English Corpus lived in London at the time they were interviewed, and they had all lived in Ontario between the ages of 8 and 18, 32% of them in London, which ensures uniformity of the speakers' regional varieties (Chambers 2000) (see Figure 5.3). They were all born in Ontario, 42% in the city of London and 11% in Southern Ontario (see Figure 5.2).

[37] There are two women aged 22 (LS1 and HS1).

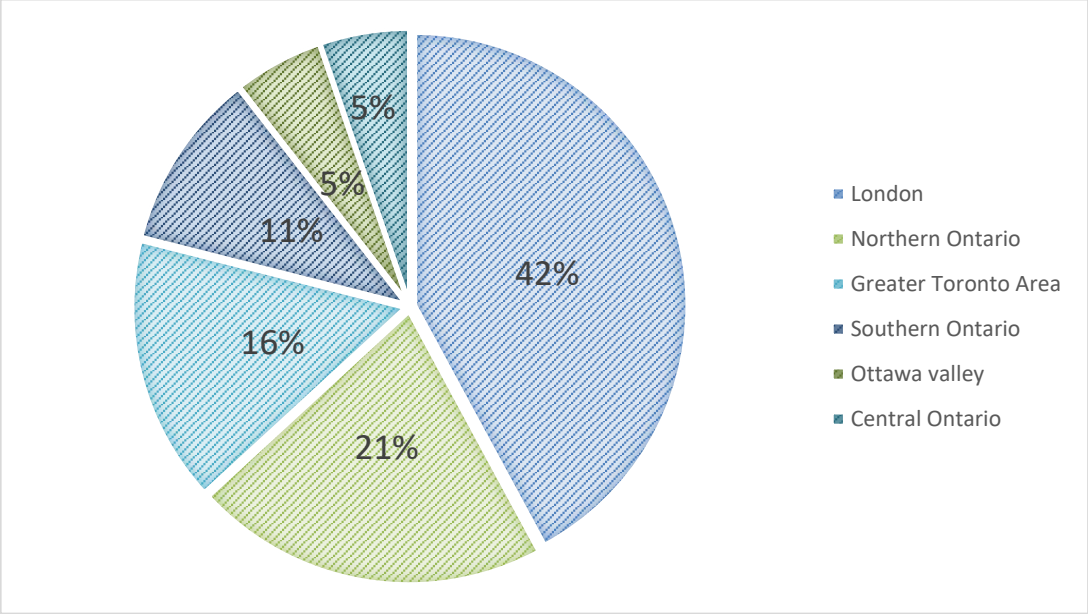

Figure 5.2: Birthplace of speakers in the PAC-LVTI Ontario (Canada) Hockey English Corpus.

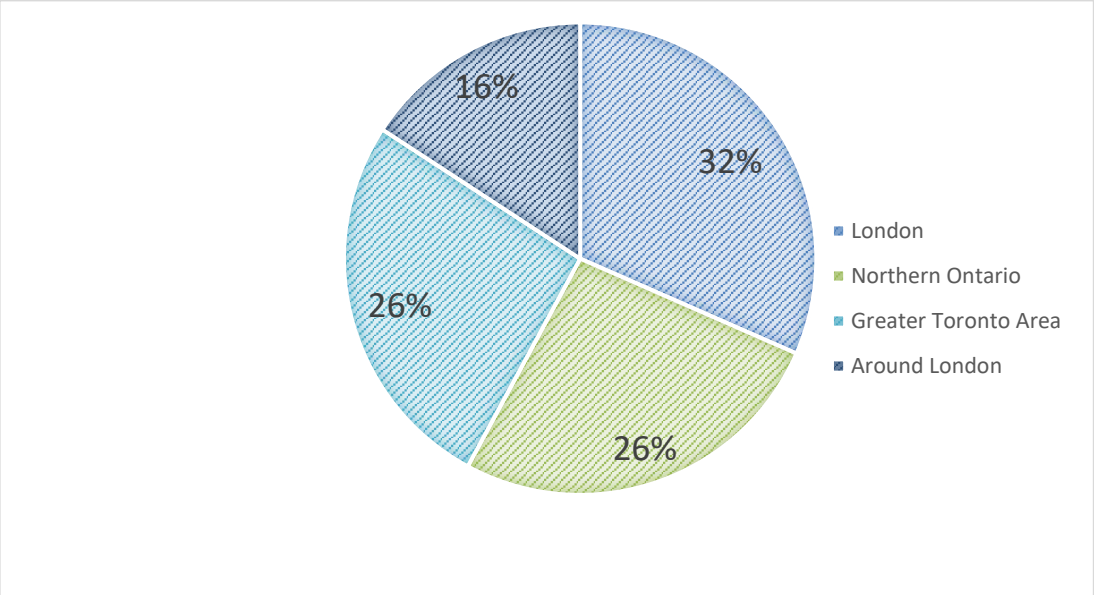

Figure 5.3: Residence of the speakers in the PAC-LVTI Ontario (Canada) Hockey English Corpus between age 8 and 18.

Current sociolinguistic research in urban centres is concerned with the mobility of speakers (Chambers 2000). In my corpus, 37% (N=7) of the speakers have always lived in London, while 42% (N=8) have lived in one or two locations and then moved to London and have been in London for 4 to 30 years. Finally, 21% (N=4) of the speakers have moved frequently during their life because of work and they have been living in London for between 2 and 10 years.

Socioeconomic status

Western societies are socially stratified (Trudgill 2000: 23-24). In order to calculate the SES of participants to account for linguistic variation, several sociolinguistic approaches have been developed based on different configurations of factors. In early studies, scholars would infer that the profession of the breadwinner of the household was sufficient information to establish the SES profile of speakers. In his influential work, Labov indicates that "a person's own occupation is more clearly correlated with his [sic] linguistic behaviour […] than any other single social characteristic" (1972: 44). Other scholars argue that the only social class represented in their sample will be the middle class. As Viollain (2014: 359) observes, it is the only class that is accessible through scholars' networks (2014: 359).

Although income is a reliable factor for estimating the SES of speakers and can easily be measured and compared, it can be a sensitive topic for participants. It would be therefore unwise to ask participants directly how much money they earn, as it could compromise the climate of confidence that is conducive to a casual conversation. Therefore, some researchers decide to combine several socioeconomic factors to determine the socioeconomic profile of their respondents as tightly as possible. In his NYC study, Labov (2006b) uses education, occupation, and income of the informants. In his Norwich English study, Trudgill (1972) uses income, housing, father's occupation, locality, education and occupation. Like previous scholars, PAC members have created indexes based on multiple socioeconomic factors. In his Manchester study, Chatellier (2018) combines education and occupation and uses neighbourhoods to adjust his classification. Indeed, he sometimes uses the neighbourhood a speaker lives in as evidence that the speaker should be in an upper or lower group in his SES classification (2018: 196).

Socioeconomic status index

The SES index developed for this study classifies the participants into three socioeconomic groups using objective criteria. Lower, middle, and higher SES groups can be associated with lower, working and upper class. This section explains the methodology behind the index and begins with a discussion on sport as a socioeconomic factor. Then, this classification is explained with a focus on the categories selected to determine the SES of the participants. Finally, the distribution of the speakers in the three SES groups is detailed.

Viollain notes that sports are indicators of social affiliation; she distinguishes between popular sports practiced by lower social classes and middle-class activities (2015: 645). She recalls that the PAC protocol invites participants to talk about their leisure and sports activities. In her New Zealand study, she notes for example that horseback riding, golf, tennis and polo

are associated with the upper class whereas football, basketball and hip-hop dance are considered to be working-class activities. However, this method cannot be easily transferred in this study as the relationship between hockey and social class is more complicated. Although hockey was a "people's sport" in the 1980s (Decosse and Northcliffe 2020: 120), class is now becoming an issue, since the sport has become too expensive for the average Canadian family (Pecoskie 2016a, 2016b and 2016c), and many working-class families cannot afford to enrol their children in a hockey team. Hockey is now described as the sport of the elite which is "beyond the financial reach of many Canadian families." (Decosse and Northcliffe 2020: 122). The same arguments are made by MacGregor (2012). Wong modifies slightly MacGregor's terms and refers to hockey as an "upper middle-class sport" (2021: 192-193) which reflects how its social status has changed over the past half century. For him, hockey has become "a privileged activity"; he points out the costs of hockey overall, where an "economic capital is now important for playing in organised hockey". Indeed, a total of 61% of all children who play hockey in Canada come from upper-middle-class or upper-class families whose household income is $100,000 a year or more[38]. Despite efforts to provide access to the sport, through financial assistance programmes, to facilitate registration and the purchase of equipment (e.g., Hockey Equipment Relief Programme), hockey is still seen to be the sport of the elite. However, given that the cost of hockey was not discussed with the speakers of the corpus and the subject of financial factors affecting access to the sport was not brought up during the interviews, I decided not to include sport as a social indicator in this classification.

Following previous researchers, I consider SES to be based on broader criteria than merely occupation, and that the index needs to include complementary factors. Thus, I develop a combined index where I assign scores to my speakers according to their level of education, their occupation and the neighbourhood they live in; each criterion was fully discussed in the interviews. Occupation and neighbourhood range from 1 to 3 and education ranges from 1 to 4. After adding up all the scales, I rank participants on a socioeconomic scale from 3 to 10. I provide below a description of the categories on which the SES index is based.

[38]https://medium.com/@robinketcheson/the-intersecting-state-of-racial-social-class-inequality-in-hockey-53e9d72e629b

Occupation

First, I classified the participants' occupation based on the National Occupation Classification (NOC) number which refers to a larger classification of different occupations in Canada[39] and indicates the average salary per hour in Ontario per occupation.

For example: a carpenter (NOC 7271) has a median salary of $24 per hour in Ontario. The average salary per hour in Ontario is $27, which leads to my classification into the following three groups see Table 5.2. A carpenter gets a score of 1 based on the median salary earned.

Classification	Wage per hour	Score
Lower	$14.00 to $27.00	1
Middle	$27.01 to $38.00	2
Higher	$38.01 to $115.00	3

Table 5.2: Classification according to the wages earned per hour and the scores assigned.

As regards students in the corpus, following Chatellier (2018: 195), I used the occupation of the speakers' parents, adding the mother's salary and the father's salary, dividing it by two to obtain the average salary of the household. I used this approach in the calculation for two speakers: AS1[40] and HS1.

AS1's parents both belong to the higher group according to their occupation: his mother is a grade 1 teacher (average wage: $38.46) and his father is a dentist (average wage: $114.90). Therefore, AS1 has an occupational score of 3[41]. HS1's parents belong to the lower group (score of 1) and this was the basis for assigning HS1 to this group as well. HS1's mother is a caretaker (average wage: $18.72) and her father is a postal worker (average wage: $25)[42].

Neighbourhood

I have chosen to classify the various neighbourhoods of London into three different areas. Once again, I used a website[43] which identities the profile of London's neighbourhoods and includes: the number of inhabitants, the percentage of homeowners, as well as the average household income. This allowed me to get a general overview of London's neighbourhoods. Using this classification, my own knowledge of the city and the comments shared by the

[39] https://www.jobbank.gc.ca/
[40] Speakers are identified using their initials to keep them anonymous. A number is added to the right of the initials in order to differentiate speakers with the same initials.
[41] 38.46 + 114.9 = 153.36/2 = 76.68 (higher group, score of 3).
[42] 25 + 18.72 = 43.72/2 = 21.86 (lower group, score of 1).
[43] https://www.london.ca/About-London/community-statistics/neighbourhood-profiles/Pages/default.aspx

speakers themselves, I divided London into three areas, larger than the neighbourhoods presented on the London website quoted previously (see Table 5.3). The first locality includes disadvantaged areas which are considered to be the poorer and rougher areas of London, areas associated by the speakers with burglaries, drug dealers and thefts (see section 5.3 to read more on the speakers' experiences living there). The second locality is mostly composed of residential areas with private lots and townhouses owned by their occupants. These neighbourhoods are described by inhabitants as safe and quiet, situated close to shopping facilities and other amenities. The third and final locality brings together well-maintained and peaceful areas of the city. The affluent homeowners live there in bigger properties with gardens. The northern part of London is appreciated for the quietness of the nearby countryside.

Area in London	Description	Score
South and East London	Disadvantaged, poorer areas	1
University area, Old South, Southwest London	Middle income areas (townhouse, private lots)	2
North London, Byron, Hyde Park	More affluent areas (homeowners with yards)	3

Table 5.3: Classification of London's neighbourhoods and the scores assigned.

Education

Assigning speakers to categories based on their level of education is much more straightforward. The speakers are classified in four categories corresponding to the following levels of education: high school, college, bachelor's degree. and master's degree or several diplomas of higher education (see Table 5.4).

Level of education	Score
High school	1
College	2
Bachelor's degree	3
Master's degree or several diplomas	4

Table 5.4: Classification of the levels of education and the scores assigned.

Ranking of the SES index

The participants are ranked into three groups based on the SES index. AV1 has the highest SES value (SES score of 10), and SH1 and WG1 have the lowest SES value (SES score of 3).

Speaker	SES score (total)	SES group	Education	Occupation	Neighbourhood
SH1	3	Group 1	1	1	1
WG1	3	Group 1	1	1	1
CG1	4	Group 1	2	1	1
RS1	5	Group 1	3	1	1
AF1	5	Group 1	3	1	1
MC1	6	Group 2	2	2	2
JL1	6	Group 2	1	2	3
TM1	6	Group 2	1	2	3
HS1	6	Group 2	3	1	2
NR1	7	Group 2	3	2	2
WW1	7	Group 2	3	2	2
LS1	7	Group 2	3	2	2
KG1	7	Group 2	2	2	3
LS2	7	Group 2	2	3	2
AS1	8	Group 3	3	3	2
KB1	8	Group 3	4	2	2
SP1	9	Group 3	4	3	2
KE1	9	Group 3	4	2	3
AV1	10	Group 3	4	3	3

Table 5.5: Distribution of speakers in the three SES groups based on their SES scores.

As indicated in Table 5.5, in group 1, speakers have an SES score lower than or equal to 5 (N=5, 26.3%). These speakers have a relatively low level of education (score of 1 or 2) except for RS1 and AF1 who are young working persons in possession of a bachelor's degree but not working in their field of study. In other words, their diploma is not a required qualification in their field of work, which explains the difference between their level of education and their

ranking in group 1. Group 1 speakers also have the lowest wages as they are mostly manual workers (score of 1). As regards the localities they live in, they all reside in the same part of the city, in what is considered to be a disadvantaged area (score of 1) of London.

In group 2, speakers have an SES score of 6 or 7 (N=9, 47.4%). Four speakers have bachelor's degrees, three speakers have college degrees and two speakers (JL1 and TM1) completed high school only but they still have an SES total score of 6 because they live in the affluent neighbourhoods of London which confirms their ranking in group 2, whereas most of the speakers live in middle income areas of London (indeed six speakers in group 2 have a score of 2). As for occupation, speakers hold what I qualify as lower occupation (score of 2), with two isolated cases: HS1 (score of 1) and LS2 (score of 3). HS1 is a student who has to work part time to pay her tuition, and the occupational status of her parents also determined her score to be 1. On the other hand, LS2 scored 3 on occupation which makes her the highest in her group, but she could not be ranked in group 3 because she only has a college degree (score of 2).

Education distinguishes group 3 from group 2, since all the speakers in group 3 (N=5, 26.3%) have an SES score of 8 or higher. They also have higher levels of education (score of 4) except for AS1 who has a bachelor's degree but is still studying in medical school and is continuing his studies to become a doctor. All the speakers hold occupations classified with a score of either 2 or 3 and live in the most desirable neighbourhoods of London (scores 2 or 3). The overall distribution of the index is relatively balanced, with a gap of 2 points separating group 1 and group 2, and group 2 and group 3.

	Over 40	Under 40	Total
Group 1	2	3	5
Group 2	4	5	9
Group 3	4	1	5

Table 5.6: Distribution per age according to the SES groups

Table 5.6 shows that group 1 and group 2 are nearly balanced in terms of age whereas group 3 is composed of older speakers and only includes one younger speaker. AS1 is indeed a student who is completing medical studies to pursue a career as a doctor and his parents are ranked in the higher group in terms of occupation, which explains his ranking among group 3 speakers. Table 5.7 presents the distribution of the SES groups according to gender. The SES groups are balanced in terms of gender.

	Men	Women	Total
Group 1	3	2	5
Group 2	4	5	9
Group 3	3	2	5

Table 5.7: Distribution per gender according to the SES groups

After presenting traditional factors (age, gender, and SES), I now turn to the non-traditional factor implemented to account for linguistic variation in this work: degree of engagement in hockey.

5.2.2 Non-traditional social factor: hockey

In this study, I operationalise hockey as a social factor which I propose to use as an independent variable to investigate the possible conditioning effects that the degree of hockey involvement, as measured by the Hockey Involvement Index (HII), might have on the dependent linguistic variables under study.

The Hockey Involvement Index

This section describes the methodology and the purpose of the HII. I first introduce the approach used to develop the index. Then, I explain in detail the different items from which the index is drawn. Finally, I present the distribution of speakers the index generated.

The HII is a tool designed to measure the degree of involvement of the participants in the sport. The index is the sum of scores based on the following eight parameters: identity (statements about hockey being part of the participants' identity), meaning (what associations they make from playing hockey, what their reasons are for playing hockey), importance (importance granted to hockey in their life, compared to other activities),[44] weekly frequency of play, yearly frequency of play, the age at which participants started playing, length of time and level they play at. There is obviously an interaction between the age at which participants took up the sport and how long they have played, but in applying the HII, I am less interested in the absolute number of years they have played than in where the game fits into their life trajectory, the proportion of the years of their life they have played. Each item is ranked on a scale from 1 to 4, 4 being the highest score a participant can have on a question and 1 the lowest, with an intermediate score of 2. The same weight is assigned to each item. The sums of these HII items rank the participants on a scale from 14 to 30. However, for the sake of readability, the scale of the index was reduced, by subtracting 13 from all the figures, giving a more

[44] Tables 5.9 and 5.10 give examples of the respondents' answers.

comprehensible range from 1 to 17. Thus, the HII summarises the information on hockey shared by the participants during the sociolinguistic interview and reflects their degree of involvement in the sport.

I now provide a specific description of each item selected to create the index.

Identity

The data that summarise the "identity" section come from a closed question in which the participants were asked if they considered themselves to be a hockey player. All participants responded with one of the three answers: "yes", "yes/no", or "no" and explained their choice, as shown in Table 5.8.

Identity	Score	Example
Yes	4	"yes, a sense of belonging and family" RS1
Yes/ no	2	"yes and no, I think there are aspects of my identity far away, me as of being a hockey player […] don't associate with the social part of it" HS1
No	1	"I'm not a hockey player, I used to be" KE1

Table 5.8: Classification of "identity" with scores and examples.

Meaning

Afterwards, if the participants did self-identify as hockey players, they were asked to explain the meaning they gave to that statement. As Table 5.9 indicates, some participants acknowledge hockey as a lifestyle, while others emphasise the social aspect or the health and fitness benefits of the activity.

Meaning	Score	Example
Way of life	4	"It kinda ties in the Canadian side of things, as well, there is a lot of pride of being a hockey player in Canada" WW1
Social aspect	2	"to get out and, like interact with people […] and to build camaraderie" JL1
Fitness	1	"just sport keeps me in shape" WG1

Table 5.9: Classification of "meaning" with scores and examples.

Importance

While carrying on the conversation, participants were also invited to speak about the importance they attributed to hockey in their life (see Table 5.10). In response to this question, participants gave three types of answer: hockey is omnipresent in their daily life and so it is "very important", hockey is "important" because they play it regularly or they miss it when they do not play, or finally hockey is "not that important" because it is just one activity they practise, among others.

Importance	Score	Example
Very important	4	"very important, probably top, one of the top 3 things" AS1
Important	2	"well it's important 'cause I play 2 or 3 times a week" SP1
Not that important	1	"well, it's not all that important, 'cause some things would be there. I don't think it's the only thing" SH1

Table 5.10: Classification of "importance" with scores and examples.

In the second part of the interview, participants were asked more quantitative questions on their hockey habits. These include their weekly and yearly frequency of playing the sport (Tables 5.11 and 5.12), the length of time they have played (Table 5.13), the age at which they started playing (Table 5.14) and the level they have played at (Table 5.15).

Weekly frequency	Score	Example
Four and more	4	"four at least […] sometimes as much as five or six " MC1
Twice	3	"we play twice a week for sure" LS2
Once	2	"now probably just once a week" HS1
Less than once	1	"now, not, I'd play like, would be twice a month" LS1

Table 5.11: Classification of "weekly frequency" with scores and examples.

Yearly frequency	Score	Example
All year round	4	"all year long yes!" AV1
Winter only	1	"no during the summer, I usually take that off to do other sports" AS1

Table 5.12: Classification of "yearly frequency" with scores and examples.

Duration	Score	Example
Entire life	4	"I played all my life" KE1
On and off	1	"I took 17 years off, through my 30's I played, I started when I was 14 and played for 2 years" KB1

Table 5.13: Classification of "duration" with scores and examples.

The age when they started playing	Score	Example
From 2 to 6	4	"pretty much as soon as I could play hockey, I have been playing hockey" JL1
From 7 to teenagers	2	"I've never played until I was a pee wee […] 12 years old something like that" SH1
Adulthood	1	"I only play ice hockey until I was in my 30's […] and I only did it cause my kids were playing hockey" AV1

Table 5.14: Classification of "the age at which participants started playing" with scores and examples.

Level	Score	Example
Advanced	4	"I play like very competitively, so I think it adds a lot to who I am" LS1
Intermediate	2	"it would be considered competitive hockey […] I played high school hockey too" CG1
Recreational	1	"strictly recreational" MC1

Table 5.15: Classification of "level" with scores and examples.

Participant	Identity	Meaning	Importance	Weekly frequency	Yearly frequency	Duration	Started playing	Level	Sum	Corrected sum	HII group
AV1	1	1	1	4	4	1	1	1	14	1	Group 1
SH1	1	2	1	3	4	1	1	1	14	1	
KB1	2	1	2	3	4	1	2	1	16	3	
WG1	4	1	4	1	1	1	2	2	16	3	
JL1	4	2	2	1	1	1	4	2	17	4	
SP1	4	1	2	3	4	1	1	1	17	4	
LS2	4	2	2	3	4	1	1	1	18	5	
TM1	1	1	1	3	4	4	4	2	20	7	Group 2
AF1	4	2	2	2	1	4	4	2	21	8	
HS1	2	1	1	2	4	4	4	4	22	9	
KE1	1	2	1	3	4	4	4	4	23	10	
AS1	4	2	4	2	1	4	4	4	25	12	Group3
CG1	4	2	4	2	4	4	4	2	26	13	
MC1	4	4	4	4	4	4	2	1	27	14	
WW1	4	4	2	4	4	4	2	4	28	15	
KG1	4	4	2	4	4	4	2	4	28	15	
LS1	4	4	4	1	4	4	4	4	29	16	
NR1	4	4	2	3	4	4	4	4	29	16	
RS1	4	4	4	4	4	4	2	4	30	17	

Table 5.16 : Classification of the speakers in the three HII groups based on their HII score.

Within the HII, the highest value is 17 and the lowest is 1; Table 5.16 shows the complete classification. RS1 (HII score of 17) is rather young (23 years old) and strongly identifies with the profile of a hockey player. Hockey is a lifestyle for her, and she emphasises that the way she speaks changes when she is among other hockey players. At the lower end, AV1 and SH1, both older speakers, are the least engaged in hockey according to the index (HII score of 1). AV1 considers himself to be an outsider as he distances himself from his teammates. During

the interview, he repeatedly excluded himself from the hockey community. His index score of 1 fully represents his non-identification with this CoP. Additionally, SH1 does not consider himself to be a hockey player at all and even laughed at the question during the interview, a fact that explains his ranking. The index assigns participants to three groups based on their HII score. There is a two-point difference between each group, which motivates the distribution. This ranking is also supported by the qualitative information presented below.

The first HII group, (HII score: equal to or lower than 5) brings together seven of the least engaged speakers (36.8%). Among them, some participants do not identify as hockey players and overall, they place less importance on the sport. For instance, JL1 defines hockey players to be people who play hockey, so he considers himself to be a hockey player, but he does not have the same attachment to or fondness for the sport as other players in the corpus. All these players have been playing intermittently and they only play recreationally or as a form of exercise. They began playing as adults or in their teens and play less regularly than the other participants in the sample. In addition, they play at a relatively low level in non-organised leagues with no referee[45].

The second HII group comprises four speakers (HII score: between 7 and 10) (21.1%) and is mainly composed of speakers who consider themselves to be hockey players, but they focus on the social aspect of the sport; for them, it is a way to interact with people who share common interests. Overall, they have played less frequently (weekly and yearly) and sporadically over their lifetime. KE1 has the highest score in Group 2 and does not self-identify as a hockey player, yet he says he is overly attached to hockey. He used to believe he was a hockey player, but at the age of 68, KE1 now only plays recreationally.

The third HII group, (HII score: equal or higher than 12) includes eight speakers (42.1%) who strongly identify as hockey players as reflected in their high consideration of hockey in their everyday life. These participants started playing hockey at an early age and have played continuously through their entire lives. Most of them play at competitive levels in organised hockey leagues. QS1 has the lowest HII score in this group, a fact which can be attributed to his medical studies, which leave AS1 with little time to play hockey as often as he used to.

[45] Non-organised leagues can take the form of "pick-up" hockey sessions; players are not part of a league, and games are organised among the players present at the rink.

	Over 40	Under 40	Total
Group 1	6	1	7
Group 2	2	2	4
Group 3	2	6	8

Table 5.17: Distribution per age according to the HII groups

As indicated in Table 5.17, HII group 1 includes 85.7% of the oldest speakers (N=6); as speakers grow older they seem to identify less with the sport and to be less involved in it. A few of them mentioned that aging affects their hockey level, and they feel they can less legitimately identify as hockey players. In general, they are open to a variety of other activities, and they attach less importance to hockey in general. HII group 2 combines a balanced number of the youngest and oldest speakers. The two oldest speakers, TM1 and KE1, play in the Huff N' Puff team. TM1 is also a hockey coach for a 60+ women's team and KE1 considered himself to be a hockey player when he was younger, which explains both their rankings. HII group 3 consists of 25% of the speakers over 40 (N=2), and 75% of speakers under 40 (N=6). This majority of young people reflects a greater engagement in the sport earlier in life.

There seems to be a small interaction between the HII and age, since engagement in hockey decreases as speakers grow older in this sample of speakers. Younger speakers are more likely to be in group 2 and group 3.

	Men	Women	Total
Group 1	4	3	7
Group 2	2	2	4
Group 3	4	4	8

Table 5.18: Distribution per gender according to the HII groups

As demonstrated in Table 5.18, the HII groups are balanced in terms of gender.

In this study, I designed two indexes, both including social factors: a traditional one to measure the SES of the speakers, and a more innovative one which assesses the engagement of speakers in hockey. The SES index divides the speakers into three groups based on their level of education, their occupation, and the neighbourhood they live in. Group 1 represents the speakers with lower socioeconomic status (the lowest SES score is 3) and in group 3 are ranked speakers with higher socioeconomic status (the highest SES score is 10). The HII classifies the speakers into three groups depending on their engagement with hockey. To measure the speakers' engagement, eight parameters were surveyed throughout the sociolinguistic interview. In the corpus, speakers are on a continuum with HII scores from 1 to 17, the higher score illustrating the higher hockey engagement.

5.3 Detailed presentation of the speakers

In this section, I give a detailed presentation of the speakers in the corpus to help familiarise the reader with their biographical details. The PAC methodology requires the researcher to inquire about personal information to establish the speakers' sociolinguistic profile in order to create a comprehensive database. In these descriptions, I particularly emphasise the speakers' age, birthplace and place of residence, their view of their neighbourhood, their occupation, and their level of education, as well as their hobbies, the languages they speak and how much they travel. Moreover, for my youngest speakers (five of them), I also indicate the parents' occupations. These descriptions of the speakers point out relevant information that is used in the analysis of variation, at the level of the individual and of the group.

For each speaker, the first paragraph gives information about their socio-demographic characteristics and the second paragraph describes their involvement in hockey and summarises information used in the establishment of the HII. Speakers are presented in alphabetical order by initials.

AF1

AF1 was 24 years old when I interviewed her. Like her parents, she was born in London and still lives there. AF1 spent only one school year away from London, in a small town close to the city. She has a Bachelor of Arts in history and works as a housecleaner. Her father is an electrician, and her mother owns a small business. AF1 lives with her fiancé in an apartment in southeast London, a location she likes because it is close to her family and to her fiancé's family. She thinks the neighbours are nice, but she depicts the area as not completely safe ("sketchy") as her car has been broken into twice. In her free time, she likes walking her dog and playing hockey. She occasionally goes to the movies. She has travelled a little to Northern Ontario and to Vancouver.

AF1 identifies with being a hockey player and reports that the sport is quite important for her. She enjoys talking, watching, and playing hockey, and feels a sense of belonging to the hockey community. She has been playing hockey for as long as she can remember, starting when she was between five and eight years old. She has always played in house leagues but lately, since her work schedule is variable, she gets to play only once a week and only in winter. AF1 thinks that there is a hockey language used on the ice when players yell at each other; she also associates it with nonverbal cues specific to this sport (HII score: 8).

AS1

AS1 was 27 years old at the time of the interview. He was born in a medium-sized city located just east of Toronto and his family still lives there. His father was born in a small town in Ontario, and his mother was born in Montreal. AS1 has been living in London for eight years and has always lived in the northern part of the city near the university, renting an apartment in the area with two roommates. AS1 is a student in his fourth year of medical school who hopes to practise family medicine, following in his father's footsteps working in health care. His father is a dentist, and his mother is a grade 1 teacher. In his free time, he enjoys indoor cycling and cooking. He likes playing hockey with his family on holiday. He has participated in medical missions with his father in Haiti and El Salvador. He also went on a trip across Canada, from Ontario to British Columbia, with his girlfriend.

AS1 certainly defines himself as being a hockey player. He enjoys playing and watching hockey as well as discussing games with his close friends. Hockey is particularly important for him as it is on the list of his top three activities. AS1 plays hockey recreationally once or twice a week depending on his work shift schedule. He started playing hockey in a league when he was five and had played on outdoor rinks before that. He played competitively at AAA[46] level in minor (junior age level) hockey. In his opinion, hockey has its own specific slang and expressions. He thinks hockey players express confidence behind their words, and he points out the loudness of the players and their casual style. He mentions the Canadian comedy series, Letterkenny, and the stereotypes which, in his view, are an accurate representation of hockey players' language habits (HII score: 12).

AV1

AV1 was 59 years old at the time of the recording and had been living in London for six years. He was born in Toronto and spent twenty-five years in a small town south of London. AV1 is a retail customer service specialist and has two bachelor's degrees: in marketing management and retail management. He is proficient in Dutch as his parents were both born in Holland, emigrated to Canada in their thirties, and continued to speak Dutch at home. AV1 still uses Dutch when he corresponds with and visits his relatives. He owns a house in the southwest part of the city, a neighbourhood he really likes because of the proximity of the river that is an asset as he owns two kayaks. In his free time, AV1 does different activities depending on the

[46] In Canada, ice hockey levels are related to age. Junior hockey is divided into three tiers, the first one called Major Junior (e.g., Ontario Hockey League) with players aged 16 to 21 years old, the second one known as Junior A which is subdivided into three categories: AAA (players compete at Major level) it is the top tier at competitive level, then AA and A. The third tier: Junior B, C, D represents a less competitive level, Junior C (also called house league) being local competitions. Although Junior D was popular in the 1960s and 1970s, it does not exist anymore. (Though it was mentioned by the oldest speakers of the corpus). The non-competitive level is called "house league hockey" and is a recreational level of play (intra-city games).

season. In summer, he loves to go sailing (he owns a sailboat) and golfing. In addition, he enjoys taking great care of his motorcycle and his vintage convertible car. In winter, AV1 travels to the mountains to go skiing and snowboarding. The rest of the time, he appreciates being home reading. AV1 is an avid reader who also loves watching movies. He recently travelled to Europe, a trip to Belgium and France.

AV1 does not self-identify as a hockey player. He started playing hockey in his late thirties because his children were playing, and then he stopped. He started again five years ago on the "Huff N' Puff" team; however, he presents himself as being less engaged than other players in his team. AV1 plays four times a week throughout the year, always playing recreational hockey. As for hockey talk, AV1 believes HE to be limited to the dressing room and to the bench: "it stops when the hockey stops". In his opinion, HE is a sarcastic and vulgar form of expression, since hockey players are often provoking each other with comments about how bad the other player's game is (HII score: 1).

CG1

CG1, aged 31 when the corpus was recorded, was born in London, and had lived in London his entire life, like his parents. His father, WG1, is also a speaker in the corpus. CG1 has a college degree and works as a carpenter, and he likes the friendly atmosphere that emerges from the team dynamic. CG1 is married to a French woman, and they have a two-year-old daughter they speak to in French and English. The couple have recently bought a house, which they are currently renovating in a neighbourhood in the northeast of London, closer to CG1's parents. CG1 finds the neighbourhood very friendly and quiet. In his free time, he plays sports: principally hockey, volleyball and baseball. He has travelled to Thailand, France and to Las Vegas and Florida a couple of times.

CG1 considers himself to be a hockey player and explains that everyone can consider themselves hockey players if they feel like it or if they have ever played hockey. He even said that he considers hockey to be a cultural activity. Hockey is quite important for him, and he currently plays all year round, once a week at most. CG1 started playing hockey when he was six years old and did figure skating when he was younger. He played competitive hockey in high school. CG1 believes HE is not limited to the ice, and that it carries on wherever hockey players are gathered. According to him, there are specific hockey expressions and players always banter (HII score: 13).

HS1

HS1 is the youngest speaker in the corpus along with LS1, both aged 22. She was born in London and was living there at the time of the interview. Previous to that, she lived with her parents in a small town southwest of London. Her mother was born in London and her father was born in Vancouver. HS1 spends most of her time in London since she studies and works in the city: she is doing her bachelor's in linguistics at Western University with the goal of working in computational linguistics. She also works part time in retail to pay her tuition fees. Both her parents work at Western; her mother is a caretaker, and her father is a postal worker. In her spare time, she spends time on social media and likes watching basketball. She also plays hockey, ball hockey and goes to the gym regularly. She has travelled to play in hockey tournaments in Canada and in the Northern United States.

HS1 identifies with certain aspects of being a hockey player but there are definitely aspects of her personality which she finds do not correspond to that identity as she describes herself as an introvert. HS1 plays hockey once a week continually throughout the year. She started playing hockey when she was two and has played competitive hockey. She describes the language of hockey as being a stereotype of CE, portraying a stronger Canadian accent. She thinks women players speak in a more neutral way. HS1 associates hockey language with the stereotypical representation depicted in the TV comedy show Letterkenny (HII score: 9).

JL1

JL1 was 34 years old at the time I interviewed him. He was born and raised in London, where he currently lives. He owns a house in a 30-year-old neighbourhood in northwest London which he likes because it is peaceful, with its bigger properties with gardens. His father was also born in London and his mother was born in Ontario. He has also lived in cities just west of Toronto. Besides working as an operation manager JL1, who has a high school diploma, likes playing video games and board games with friends as well as various sports such as hockey, badminton, baseball, and curling. JL1 occasionally goes to the theatre to watch plays or musicals. He travels mostly to the United States and went on a cruise to the Aruba, Bonaire and Curacao islands for his honeymoon.

JL1 considers himself to be a hockey player because he defines a hockey player as someone who plays hockey. According to him, the term hockey player refers to anyone who plays the sport; that goes without saying. Indeed, for him hockey is good exercise and an effective way to interact with different people. JL1 has been playing for thirty years, having started as soon as he could, and he has always played in house leagues (HII score: 4).

KB1

KB1 was 62 years old when I interviewed her. She was born in Toronto and has moved frequently within Ontario, Quebec, and the United States for her studies and work prior to establishing her current residence in London, where she has been living for 10 years. KB1 taught in the Netherlands for four years. Then, she worked as a supervisor for vehicle mechanics in the army. She has two bachelor's degrees: one in education and the other one in engineering, in addition to a master's in business administration. KB1 is fluent in French, and she is proficient in written Dutch. She is married to a high school teacher, who speaks English and German. Her husband was born in Germany and moved to Canada when he was eight. Together they live in a townhouse in southwest London, a neighbourhood she likes because it is close to the amenities and shopping facilities, but she would prefer to be closer to the city centre. Since retirement, she has been busy playing sports: pickleball[47] and hockey. She is a member of the "Huff N' Puff" team and goes to the gym. She takes clarinet lessons every week and plays in three different groups that perform concerts in retirement homes. She is also a district coordinator for a seniors' association that organises summer and winter competitions.

KB1 plays hockey twice a week in winter and once a week in summer. She started playing hockey at the age of 14 but she only played for two years. She then played between the ages of 28 and 40 and started again a few years ago. She has mostly played recreational hockey and emphasises that there was no girls' hockey when she was young. As regards hockey talk, she believes the profile of hockey players has evolved as well as their language. She thinks hockey players are nowadays more diverse and more educated overall. She refers to the "Huff N' Puff" as a non-typical group and highlights that there is not much of a language difference in the women's locker room compared to their daily conversations in other contexts (HII score: 3).

KE1

KE1 is the oldest participant in my corpus. He was 68 years old and lived in London when I spoke with him. He owns a townhouse in north London which he describes as a nice residential neighbourhood, although he highlights that it is getting busier and less rural because of the growth of the city. KE1 was born in a small town in north-eastern Ontario and retired from a public service job in that city. He also lived in Ottawa, and in Boston for a year on a hockey scholarship. KE1 is bilingual in English and French and studied for one year at university. He also completed three years of college. His leisure time is devoted to volunteerism and community involvement. He and his wife are both fond of music and they volunteer at the

[47] Pickleball is a racquet sport that combines elements of tennis, badminton, and table tennis.

Music Hall[48] in London. He also volunteers for the Terry Fox fundraiser run for cancer. In addition to volunteer work, he is the chef in his family and does all the cooking. He also likes spending time with his two brothers who live nearby. As regards travel, KE1 has travelled extensively in eastern Canada, as well as in Ireland and the Netherlands.

KE1 is a member of the "Huff N' Puff" and plays hockey twice a week all year long. He has been playing hockey for over sixty years as he started when he was young. He has played competitively, both in minor hockey and at university. Yet, he does not consider himself a hockey player anymore. He jokingly says that he used to be good at playing it. He understands hockey talk to be a language in which players would only speak positively about themselves, but he does not consider that it is hugely different: "I don't think hockey affects the accent" (HII score: 10).

KG1

KG1 was 60 years old when I interviewed her. She was born in a small town in north-western Ontario and has been living in London for 10 years. She owns a house in North London that used to be in the countryside. Although KG1 likes her neighbourhood, she is disappointed by the amount of new constructions. KG1 has a college degree and is retired from the army, having occupied various positions from artillery gunner to field medic and clerk. She started moving across Canada for work when she was 17 years old, and she has lived in four other provinces for periods ranging from six months to two years. She also lived in the Bahamas for three years. KG1 does a lot of sports: hockey, running, baseball, biking, and hiking. Due to her interest in history, KG1 enjoys going to museums. She has travelled extensively to destinations including Hawaii, England, Cuba, the Dominican Republic and Italy.

KG1 self-identifies as a hockey player and affirms that hockey is pretty important in her life. Hockey is a way of life for her and many of her friends are associated with hockey in some way. She spends a considerable amount of time at the rink throughout the year. Indeed, she plays hockey four times a week and then works three days a week as an ice-skating instructor. KG1 started playing hockey at age seven which means that she has been playing for over fifty years. She played in the military women's hockey team, and they competed at the national level. KG1 thinks that hockey language exists to a certain degree, and she defines it as specific hockey

[48] The London Music Hall is an entertainment complex which promotes many bands and artists, art production, sports, and theatre.

expressions that players would pick up from each other. (e.g., keep your stick on the ice[49], keep your head up[50]) (HII score: 15).

LS1

LS1 was 22 years old at the time of the interview. She was born in London, but she only moved to London for her studies in Health Sciences, and she has been living there for five years.

Before that, she lived in the family home on a farm by a river, in a rural area one hour northwest of the city. LS1's father is a farmer who was born in a small town in Ontario and her mother, a nurse, was born in a medium-sized town in Northern Ontario. LS1 values the seclusion and quietness of the area she lived in with her family, but wishes it were more diverse. She hopes to live on the outskirts of a city to both enjoy the amenities of the city and the tranquillity of the countryside.

LS1 is a garden designer but she wants to go back to school for her teacher training at the Faculty of Education. LS1 is fond of sports: she both plays and coaches. She has coached soccer and rugby in past summers. As regards travelling, she has been to rugby tournaments in Colombia and Nicaragua. She travelled to Spain for an exchange and really wants to visit Europe in the near future. She has also visited Alberta and British Columbia with a friend.

LS1 self-identifies as a hockey player and emphasises the importance of hockey in her life. In fact, she has played competitive hockey, and she made her social connections within hockey. She started playing hockey when she was four years old. She played girls' hockey growing up and then she played boys' hockey and AA[51]. She currently only plays twice a month from September to April to fit in with her work schedule. LS1 believes there is a hockey players' talk which is a stereotype of male hockey players' talk. However, she makes a distinction between male and female hockey players. She thinks male hockey players are "dirtier" in the way they speak. She sums up her thoughts by saying that hockey language is second nature to her (HII score:16).

LS1 is the only speaker who has lived in London for a relatively short period of time; she has been living in London for five years. She is also a very keen hockey player, as described in the above paragraph, which reinforces her place in the corpus.

LS2

[49] The meaning is two-fold: be ready for anything and keep it simple.
[50] Use your eyes to keep track of the game, do not simply focus on the puck.
[51] Each age division in hockey is subdivided into skill levels with single-A being the lowest and triple-A the highest levels.

LS2 was 62 years old when I interviewed her. She was born in a small town in eastern Ontario and lived there until she was 18 years old. Then, she lived in Northern Ontario for 20 years and she has been living in London for 24 years. She lives in a house in the district known as Old South London with her wife (SP1) who is also a speaker in the corpus. LS2 loves everything about her neighbourhood: the people, its appearance, the private lots, and the fact that it is not a busy area. LS2 has a college degree and is retired from her employment with the provincial public service. Since she retired, she has taken guitar lessons, and she spends her free time reading. LS2 likes sports and in her spare time, she plays golf, tennis, and hockey. She has also gone on cycling trips in Europe. Furthermore, LS2 travels to Mexico every year to escape winter.

LS2 has been playing hockey for at least twenty years. LS2 and SP1 are both members of the "Huff N' Puff" hockey team. She plays pick-up hockey twice a week during the entire year and sometimes plays extra games. She self-identifies as a hockey player because she knows enough about the sport; she watches it and plays it regularly. She considers hockey to be important in her life and she appreciates its social and physical aspects. Despite this, she does not feel that there is a hockey language, even though she notices a difference in the way hockey players from the NHL speak when being interviewed on TV. She does not believe women in her team speak differently because of hockey (HII score: 5).

MC1

MC1 was 46 years old at the time of the interview. He was born in a medium-sized city west of Toronto and moved to a small town just west of London when he was six. He had been living in London for six years at the time of the interview. He and his wife own a single detached house in central Kensington village, a neighbourhood he loves. MC1 is a claim examiner in an insurance company who has a two-year college diploma. As regards his family background, he grew up listening to his parents speaking Portuguese to each other but not directly to him. He does not use or hear Portuguese in his daily life anymore because his parents and relatives now mostly speak English. As a result, he understands Portuguese perfectly but can only have a basic conversation. In his spare time, he plays a considerable amount of hockey but also spends quality time with his wife watching TV or walking the dogs. Together, they volunteer for the London food bank as they like to donate their time. At night, they go out to watch hockey games and they occasionally go to the movies or to the theatre. MC1 has travelled to Cuba and to the United States.

MC1 considers hockey to be an especially important part of his life. Hence, he self-identifies as a hockey player. He plays frequently: a minimum of four times a week in winter

and twice a week in summer and, as a goalie, he also picks up extra games. He watches a lot of hockey, and it is a recurring topic of conversation among his friends. He started playing ball hockey when he was a child because he could not skate properly. In his thirties, he switched to ice hockey, but he reports that he only plays hockey recreationally. MC1 is convinced that hockey language exists on the ice and in the dressing room. According to him, "everybody becomes an idiot" and he describes the hockey language as "dirty, vulgar, childish and rude" (HII score: 14).

NR1

NR1 was 24 years old at the time of the interview. She was born in London, like her parents. She lives in London, and she has only lived away three times in her life, each time for an eight-month period to attend school at other locations in Ontario. NR1 has a bachelor's degree in chemical engineering and works as a laboratory technician. Her father is a police officer, and her mother is a kindergarten teacher. She currently lives in her boyfriend's parents' house in a nice and expensive neighbourhood in west London. This neighbourhood is not affordable for them, so they will move to a small town south of London where they just bought a house. In her spare time, NR1 likes painting and playing sports: hockey, soccer, and volleyball. She also snowboards and used to swim a lot when she was a lifeguard. She has family in California, and for this reason she generally goes to the U.S. four times a year. In addition, she travels mostly to the East Coast of Canada.

NR1 says she feels like a hockey player because she grew up playing hockey and she misses it a lot when she cannot play. She started playing when she was six years old and has always played. She plays twice a week continually throughout the year. The highest level she played at was women's A, and she is now playing pick-up ice hockey and ball hockey. NR1 thinks hockey language exists but its use depends on the context. She believes it is related to the level you play at, and she notices that men use this hockey slang more than women do. According to her, Letterkenny is an accurate representation of the hockey players' community (HII score: 16).

RS1

RS1 was 23 years old when I interviewed her. She was born in a small city in north-eastern Ontario, like her father. Her mother was born in a small town in Northern Ontario. RS1 lived in her birthplace until she was 18. Then, she moved to London, and she has been living there for five years. She had just graduated from Western and has a bachelor's degree in English. She works in retail, as an employee in a pool store. Her father is a construction

manager, and her mother is a housewife. RS1 lives in a house in the southwest part of London which she finds quite different from where she grew up. She points out the diversity and the number of people, as well as a more accepting atmosphere in London. She prefers living in London and she highlights the opportunities it has to offer. In her free time, she mostly plays hockey and football. She also loves hanging out with her friends, but she specifies that the majority of them are from her hockey or her football community. RS1 really likes music and enjoys spending time finding new artists she may like. She writes poetry but says she prefers to stay quiet about it. She has not travelled far afield yet although she has gone all over Ontario.

RS1 considers hockey to play an essential role in her life. She goes as far as to say that hockey is a lifestyle and "hockey is forever". For her, hockey brings out a sense of belonging and family, and she loves being a member of a team. She started playing hockey when she was 10 and never stopped. She plays at the competitive level four to five times a week all year round. RS1 states that the hockey players sound "Canadian" in the way they speak when they spend time together. She said that their accent is "a kind of drawl". She certainly perceives a difference in the way she talks when she is in her hockey environment. RS1 was able to describe hockey talk as something she does automatically: she does not think about it or does not make any effort to be able to do it but she notices that she speaks differently and does not have any explanation, apart from being encouraged by other hockey players (HII score: 17).

SH1

SH1, aged 67, was born in London and was still living there at the time of the interview. He lives with his wife in the family home he bought after his mother passed away, in the east end of the city, and seems happy with his neighbourhood even if the profile of the neighbours has changed over time. His father was born in London and his mother was from Belfast, Northern Ireland. SH1 is a retired bus driver who has a high school diploma. He is involved in the labour movement, currently in a union leadership role at the local level. He also travels to conventions in Canada and the United States.

In his free time, he plays hockey and has been mocked by his family because he plays excessively. SH1 has a leadership role in the "Huff N' Puff" hockey team. However, SH1 does not identify as a hockey player and laughed at the question. For him, hockey is fun and enables him to meet with his friends, but it is not that important in his life as it is not the only thing he likes. He plays twice a week in winter and once a week in summer. SH1 started playing hockey around age twelve and did not really like it at the time. Then, he played with his work colleagues when he was twenty-five years old and started playing again with the "Huff N' Puff" league five years ago. He has played recreational hockey most of his life and has only played in an

organised league for five years. SH1 agrees with the idea that there exists a hockey language whose use is limited to the dressing room. He said: “I’ve never heard [it] anywhere else”. According to him, hockey players communicate differently; they are always laughing and yelling at each other (HII score: 1).

SP1

SP1 was 60 years old when I interviewed her. She was born in a city not far from Toronto and lived in another city in the same region until she moved to London in 1980. As previously mentioned, she is married to LS2 who is also a speaker in the corpus. Together, they have owned a house in southwest London for 18 years. SP1 likes the sense of community and the diversity of the population in the neighbourhood although it is a small area. SP1 is a retired secondary school health and physical education teacher, who has a university degree and a qualification from Teachers’ College. She spends the majority of her free time playing sports, and she currently plays basketball, pickleball, hockey, golf and tennis. Additionally, she does yoga, but she struggles to fit everything into her schedule. Regarding cultural activities, with LS2, they like to go to plenty of concerts and to the theatre. The year before, they had a subscription to the local theatre in London. SP1 is very keen on travelling. For instance, she goes to Mexico every year and she has gone to the East and West coasts of Canada. She has travelled to Australia, New Zealand, Italy, and Costa Rica as well.

SP1 identifies as a hockey player and thinks it is relatively important in her life. She considers hockey to be an activity she enjoys among others. She really likes the camaraderie side of the sport and its physical challenges which keep her fit. She plays twice a week throughout the year, and she sometimes plays extra games in tournaments. She started playing hockey in her forties and has been playing ever since. She is unsure whether a hockey language really exists, but she thinks that hockey players being interviewed on TV are moderately amusing to listen to. If HE exists, it is definitely “a locker room thing”, she confessed, where hockey players use a little more slang and are being rougher (HII score: 4).

TM1

TM1 was 64 years old at the time of the interview. He was born in Northern Ontario, and he has been living in London for two years. He had already lived in London when he was thirteen years old, for a five-year period with his parents. Additionally, he lived in various cities in Canada (mostly in Ontario, but also in Manitoba) because of work transfers. He was retired at the time of the interview, having worked for a national men’s clothes company, and travelled to major cities in Europe and in the world to do market research and explore new trends. As

regards education, he completed grade 12. With his wife, they own a single-family dwelling in northeast London which, he thinks, is very well located as it is three minutes away from the golf course he plays at, and his sister lives in the same neighbourhood. He believes the neighbourhood is nice, although he considers himself as not being a good neighbour because he is not a social person. TM1 is still getting to know what is happening in the city of London and mentioned his desire to get involved in some volunteer work. He used to coach minor hockey and loves playing golf, hockey and going to the gym. For him, cultural activities can be summarised as follows: drinking beer and watching football.

TM1 plays in the "Huff N' Puff" hockey team, but he does not consider himself to be a hockey player. Despite having played hockey all his life, he says he plays it only as a pastime. He plays twice a week in winter and once a week in summer. He started playing when he was four years old and played a lot as a child because outdoor rinks were available everywhere at that time. In his teenage years, TM1 played "representative"[52] hockey which means he was among the more skilled players in his team. Later, he played high school hockey. For him, there is no doubt hockey has a language of its own. He explains that in order to understand a conversation between hockey players, someone needs to have some knowledge of the sport because of hockey-specific expressions and abbreviations (HII score: 7).

WG1

WG1 was 61 years old when I interviewed him. He was born in London and has been living in east London his entire life. Both his parents were born in London, and he owns a house in the same neighbourhood they used to live in. One of his sons (CG1) is also a speaker in the corpus. WG1 is very close to his family. He is married and loves to take care of his relatives. In his free time, he regularly watches his grandchildren's theatre performances and hockey games. Every Friday night, the entire family socialises and plays music in WG1's basement. He considers himself a musician, a singer and a songwriter who can play any instrument. WG1 is a retired construction truck driver who finished grade 10. In his spare time, he plays golf, tennis, hockey, and baseball. He still does some construction work to stay busy and to make a few extra dollars. He used to travel within Ontario and to Quebec for hockey, and he occasionally travels to the United States.

WG1 self-identifies as a hockey player who used to play serious hockey, the highest level he played at being Junior D. He does not play regularly anymore, but even so, for him, hockey

[52] "Representative hockey" shortened in casual speech as "rep" is the highest hockey level available in any hockey association.

is very important and is still a fun activity he practises to keep fit. WG1 started playing hockey when he was fourteen and he played it for thirty years. Furthermore, he coached AAA hockey for twelve years. He indicates that hockey is a verbal affair where language is cruder. He also affirms that there is a cultural language on the ice that brings out anger in the players (HII score: 3).

WW1

WW1 was 39 years old when I interviewed him. He was born in a medium-sized city west of Toronto and then lived in London, until three weeks before the interview. He and his wife just bought a house in a quiet area in a city located twenty minutes south of London. He used to live in east London which he describes negatively as "scary" and "sketchy", with people on drugs. WW1 is a video game developer and has a bachelor's degree in science. During his free time, he mostly plays video games and hockey, and spends time with his wife. He travelled within Canada when he was a child because his father worked for an airline.

WW1 identifies as a hockey player. He explains that there is a certain pride in playing hockey as it is a very Canadian sport. He grew up watching cartoons about hockey and dreaming about the Stanley Cup[53]. Hockey is important in his life as he enjoys playing it and he plays it well. WW1 plays hockey three to four times a week all year long. He has been playing hockey for thirty years, having started when he was eight or nine years old. The highest level he played at was junior C but he only plays pick-up hockey at the present time. He is absolutely convinced that there exists a hockey talk; for him, hockey players are loud, always joking around and they always try to provoke one another (HII score: 15).

Following this presentation of the speakers of the corpus, the next section addresses the objectives of the study and the methodological tools used to conduct the acoustic analyses Tools and methods implemented to annotate and prepare the data.

Chapter 4, section 4.3 has shown that the corpus for the production component of this study was collected and annotated according to the protocol of the PAC-LVTI project which prescribes uniform conventions for transcription and other aspects of corpus management.

5.3.1 Objectives and data processing

While the objectives of this study were previously described in the introduction, it is helpful here, before describing the methodology in detail, to recall the main goals. The study seeks to verify to what extent CE features are present in HE, as spoken by the speakers of the

[53] The Stanley Cup is a championship trophy awarded annually to the NHL playoff winner.

PAC-LVTI Ontario (Canada) Hockey English Corpus. It focuses specifically on two well-known phonetic phenomena: the CVS (an ongoing change, described by Boberg (2008, 2010) as a salient feature of CE) and CR (a pan-Canadian feature according to Labov et al. (2006)). Both of these variables have been previously discussed in Chapter 2, section 2.1.2. In that regard, I investigate traditional contexts of raising in HE, and examine the degree of raising present in the speech of hockey players of the corpus. Regarding the CVS, I study the vowels involved in the shift and the stage of the shift at the time the corpus was recorded. My analysis will confirm or call into question previous findings using a corpus of authentic and contemporary data.

In sociophonetics, researchers have developed tools and methods to produce comparable data, in search of comparison with previous studies. In this research, I focus on the CVS and CR, two vocalic features of CE. As Kendall and Fridland (2021:27) argue, "vowels are particularly useful for these kinds of research questions because their gradient, multidimensional nature makes them highly relevant for a range of sociophonetic inquiries". While in early sociolinguistic research, analyses of variation in vowels were based on impressionistic transcriptions, as the field developed, more objective instrumental analysis became the norm (Kendall and Fridland 2021: 27).

Having presented the aims of this study, in the following sections I will describe the methodological choices and tools used to perform the acoustic analyses of the vowels and explain the rationale for the method adopted. I will address the segmentation and selection of vowels, the extraction of formant measurements, and the normalisation procedures used.

5.3.2 SPPAS: automatic annotation and analysis of speech

SPPAS (Bigi 2015) was developed at the Laboratoire Parole et Langage at Aix-Marseille University by Brigitte Bigi and offers a range of corpus annotation tools, including a forced aligner. For this study, SPPAS was used for the automatic detection of Inter-Pausal Units (IPU), which sets boundaries in a tier on a Praat TextGrid to facilitate chunking of the recording for orthographic transcription.

5.3.3 Praat: speech analysis and segmentation

Praat (Boersma and Weenink 2017), in addition to its speech analysis functions, is an essential tool for corpus annotation, aligning the acoustic signal to annotations in a TextGrid. In the first tier of the TextGrid I transcribe the recordings orthographically. The vowels were then segmented by hand on separate tiers delimiting each vowel's boundaries. As FastTrack,

the software used to extract formant measurements (see description below), cannot recognise IPA symbols, SAMPA (*Speech Assessment Methods Phonetic Alphabet*) transcriptions were used. In order to ensure consistency, I carried out the entire segmentation process manually, with careful attention to visual cues in the spectrogram and the waveform, and to auditory cues in the sound recording. The annotation procedure is illustrated in Figure 5.4: Tier 1 indicates the orthographic transcription; Tier 2 indicates the words which contain the diphthong PRICE; Tier 3 indicates the words which contain the diphthong MOUTH; Tier 4 indicates the diphthong and the following context and recalls the word; Tier 5 indicates the diphthong and the following context; Tier 6 only indicates the diphthong; and Tier 7 is used to write comments.

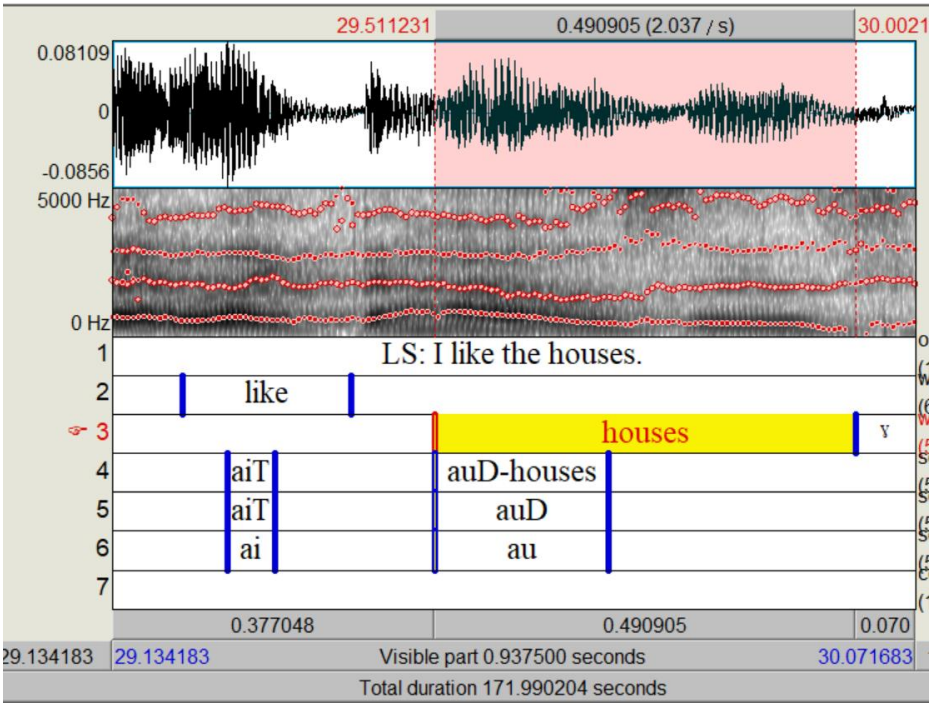

Figure 5.4: A screenshot of the Praat interface.

Once I had identified and annotated the tokens, I proceeded to formant extraction.

5.3.4 FastTrack: formant extraction

I used FastTrack (Barreda 2021), a Praat script-based plug-in application, to perform an automatic extraction of formant measurements. FastTrack implements automatic formant tracking and extraction from speech recordings and TextGrid files, thus allowing an efficient and reliable process of formant analysis.

Following Barreda's observation in the FastTrack documentation that "speaker vocal tract length varies very predictably (but noisily) as a function of talker height across all speakers", the settings for the analysis were set at the recommended range of 4500-6500 Hz for adult males

(tall: >5 foot 8) and at 5000-7000 Hz for adult females (medium: 5 foot 8>5 foot 0). Since I am the researcher in this study, I know the approximate height of the participants. The formant values of F1, F2 and F3 were automatically extracted. Following Labov's Principle of Accountability (1972), all the contexts where CR and the CVS could occur were coded and extracted.

5.3.5 Vowel formant normalisation

In sociophonetics, vowel normalisation is a debated topic, and several methods of normalisation can be applied. New normalisation methods are constantly developed using new computational algorithms. Normalisation eliminates variation caused by physiological and anatomical differences (e.g., the length of the vocal tract) across speakers, while preserving phonemic and sociolinguistic variation. The goal of normalisation is to reduce differences in acoustic phonetic measurements based on vowel quality thus allowing the researcher to make comparisons between speakers. As Clopper (2009: 1440) points out normalisation "successfully reduce(s) talker-specific variation while maintaining phonological and sociolinguistic distinctions".

I have adopted the normalisation algorithm of Lobanov, a method used to examine CR and the CVS in previous studies including Kendall and Fridland (2017), Sadlier-Brown (2012) and Roeder (2012). It should be noted that Roeder et al. (2018) and Boberg (2008) use the Labov ANAE method, derived from the Nearey method (1978). The other normalisation algorithm that I considered was Labov's log mean method (the ANAE). The main difference resides in the fact that it combines a single grand mean for all speakers (see Boberg's study 2019: 98), and consequently the main disadvantage of this method is that it works better with a corpus of at least 345 speakers (Thomas 2011: 170).

In this study, normalised F1 and F2 values are calculated in NORM (Thomas and Kendall 2007), which is an online platform proposing different methods to normalise and plot vowel formants depending on the normalisation method using F1, F2 and F3. Since the Lobanov method is a vowel extrinsic method, which means that it compares the formant values of several vowels of a speaker, I coded and extracted seven other lexical sets (Wells 1982): FLEECE, GOOSE, GOAT, FOOT, LOT, STRUT and FACE, which are not part of the analysis, but which help to give a better representation of the distribution of the vowels in the entire vowel space of the speakers. All data were normalised but the normalised values are not rescaled into Hertz as recommended by Kendall and Fridland (2021: 54) since this might skew the visualisation. The normalised data are in z-scores which is a statistical measurement described as the value's

relationship to the mean of the group values. Z-scores are a measure of standard deviation from the mean.

5.4 Acoustic analysis of vowels

To conduct an acoustic analysis of vowels, Kendall and Fridland (2021: 42) explain that some tokens should be removed from the analysis, because they are not considered to be "good data", meaning they cannot be properly analysed, due to background noise or poor audio quality. Thus, some linguistic contexts are known to influence the quality of the vowel, and this is particularly due to coarticulatory influences. As a result, researchers should only analyse contexts where such effects are minimal. For example, Kendall and Fridland (2021: 42-43) observe that, due to the following liquid after the vowel, it is hard to delimit the length of the diphthong in *pail*. Liquids make it difficult to find the boundary of the vowel, because of their considerable coarticulatory effects on vowels (Lehiste 1964; Harrington and Cassidy 1999). Glides immediately preceding vowels are also excluded from the analysis for the same reason (e.g., *wet*) (Baranowski 2013: 407-409).

5.4.1 Coding occurrences of the Canadian Vowel Shift

Drawing on approaches used in previous studies (Boberg 2019), I analyse the CVS in reading tasks: in the three wordlists and a text. Reading tasks present several methodological advantages: a uniform set of data for each participant, and the control of the phonological environment through careful choice of words. In addition, less reduction is found in the data, since speakers carefully enunciate each word in formal reading style. I considered each word with a stressed short vowel (KIT, DRESS and TRAP) in a range of allophonic environments to allow a descriptive coverage of the shift. The preceding and right contexts were coded: following voiceless fricative (_vlessfricative) (e.g., *this*), following stop (_stop) (e.g., *bed*), preceding glide and following stop (glide_stop) (e.g., *yet*), etc. With regard to consonant clusters, *best* was coded as a voiceless fricative, which means I classify consonant clusters using the manner of articulation of the first consonant. In the text, grammatical items which are likely to be reduced were also excluded such as *has*, *what* and *did*.

In the specific context of the CVS, /l/ when following a vowel is known to favour retraction of the vowel, even in varieties where the CVS is not present among North American dialects, as it is a normal co-articulatory effect, as noted by Boberg (2019: 106) and confirmed by Kendall and Fridland (2021:42): "the liquid /l/, when following a vowel, typically leads to a backed vowel". Although, in their work, Clarke et al. (1995:215) demonstrate that it is only true

for the TRAP vowel which is retracted in this context, following Boberg (2019: 105-106), I exclude vowels followed by /l/ in this study, assuming they would be more retracted (e.g., pal).

In addition, Clarke et al. (1995: 214) demonstrate that voiceless fricatives following vowels (e.g., *pass*) favour a more advanced shift, an observation that was later described and confirmed by Boberg (2019:106), I therefore decided to study this context to investigate whether or not it conditions variation in my data.

Finally, in North American varieties, nasal consonants following vowels are known to cause raising and fronting, and voiced velars following vowels condition raising in low front vowels (Benson et al. 2011, Wassink 2016, Boberg 2019). Hence allophones before voiced velar and nasal consonants were excluded from the analysis.

There is no clear-cut agreement on the role of preceding consonants in the shift. De Decker and Mackenzie (2000) observe that preceding consonants do not have implications for the shift whereas Boberg (2019) notices that preceding velars disfavour the shift. Most of the studies do not take into account the plausible influence of preceding consonants, but I have chosen to do so in this study, to insure an exhaustive analysis of such contextual factors.

Following the methodology of the *Atlas of North American English* (Labov et al. 2006: 38), I take a single-point measurement at the midpoint of each short vowel to obtain the values of F1 and F2.

5.4.2 Coding occurrences of Canadian Raising

CR is studied in the semi-directed conversation of the sociolinguistic interview. All occurrences of the diphthongs PRICE and MOUTH were coded in the corpus as well as their right context which has been demonstrated in the literature to be a triggering factor for raising of the vowel (Gregg 2004, Rosenfelder 2007). In this analysis, I applied the following coding system: “T” for voiceless obstruents (including flap t) (e.g., *house*), “D” for voiced obstruents (e.g., *loud*), “N” for nasal consonants (e.g., *down*). When no context is marked it indicates all other environments including the absence of a following segment, such as in a final open syllable or before a pause (e.g., *cow*).

As outlined for the study of the CVS, high frequency words including *like* and pronouns (e.g., *I, my, our, ours*) are excluded from the analysis as they are often reduced or truncated in speech. Moreover, it allows me to follow Kendall and Fridland’s (2021: 49) advice that, in such study, “you should be mindful of not overly sampling the same high frequency words”.

It is necessary to discuss the number of tokens to analyse to be able to draw robust conclusions. Kendall and Fridland (2021: 48) suggest analysing five to 10 tokens for similar contexts, Labov et al. (2006: 37) recommend a minimum of three tokens, but more generally they suggest five to 10 tokens should be analysed, while Thomas (2011: 159) advises that five to 10 tokens per vowel be analysed. In this study a minimum of three tokens were analysed as the analyses were carried out on spontaneous speech which impacts the homogeneity of the different allophones. I analysed an allophone when a speaker produced at least three tokens; otherwise, I excluded the tokens as they were considered not to be representative.

Following the point of inflection method proposed in the ANAE, I took a single-point measurement of F1 and F2 within vowel nucleus. I measured F1 at its maximum value and measured the corresponding F2 value. My data set includes a single pair of F1, F2 values for each token measured. Although I decided for this research to follow Labov et al.'s approach (2006), other studies take multiple points of measurement, ranging from two to five over the vowel's duration to show dynamic properties of the vowel. For instance, Bray (2022: 101) takes five interval percentages during the duration of the vowel and Rouaud (2019: 200) and Chatellier (2016: 227) extract the formant measurements at 33% and 67% of the vowel segment. For the diphthongs, two points of measurements can be taken, providing a measure for the onset (nucleus) and another measure for the offset (glide). This approach could be considered in future analysis of the corpus.

5.5 Methodological limitations of the production study

Limitations are inherent to fieldwork research, and I have identified two main limitations in my production study. Sociolinguistic fieldwork has some limitations due to practical problems. The PAC protocol assumes that the participants have reading skills, but in my corpus TM1 felt uncomfortable with reading aloud and only read the first two paragraphs of the text. As a result, his reading passage sample is shorter than those of other speakers.

Conducting the informal conversation presented a number of challenges. It raised problems of intelligibility with multiple speakers, and it is sometimes hard to access enough of every speaker's speech. Furthermore, it was complicated in terms of logistical organisation, even though I thought it would be easier to bring two participants together given the fact that they are all players in hockey teams. It turned out that it worked out very well within the "Huff N' Puff**"** team. Being retired, these participants had more time and flexibility in terms of scheduling arrangements. As regards the other participants, some of them came with close family members who had agreed to participate in the task with them, thus WW1 and MC1

carried out the informal conversation with their wives, and CG1 with his father, WG1. Others carried out the conversation with friends: AS1 with his roommate, NR1 and JL1 with a close friend. HS1 and RS1 participated in the conversation together, as they are close friends. Unfortunately, it was not possible to schedule a recording session with AF1 and LS1 for the informal conversation. Thus, most of the informal conversations are not exploitable. For example, the sound quality of the conversation between CG1 and his father WG1 is below average because they were at home and moved around the room, doing other noisy activities (such as fixing a broken lamp) while talking. WW1 recorded the informal conversation with his wife, who is very talkative, and it resulted in a very unbalanced conversation. AS1 carried out the informal conversation with his roommate, but the conversation does not sound natural since both felt uncomfortable because of the presence of the recorder. While it would probably have revealed differences in HE, I did not use the data collected during the informal conversation.

In conclusion, this chapter has demonstrated the importance of applying a strict methodology in order to select the participants and to collect the corpus. I have also presented the social variables to determine their conditioning effect on the acoustic variables being studied and finished by discussing the acoustic tools I use to prepare and annotate the data. This chapter has given a full description of the speakers of the study which I believe is fundamental in a sociolinguistic project focused on variation.

The most innovative part of this chapter is the presentation of the two indexes I designed to study a traditional social variable (the SES index) and to investigate a non-traditional variable. The HII measures the degree of speakers' engagement with hockey, as a means of inquiring into the consequences of that degree of engagement for their use of certain phonological variables. The following chapter, chapter 6, introduces the methods used in attitudinal studies which I apply in the perception component of this dissertation.

Chapter 6 Methods in attitudinal studies

Having presented the framework and methodological tools of the production study of this research, in this chapter, my intent is to present the methods and approaches employed in studies devoted to perceptions and attitudes. I start by presenting some definitions of attitudes and perceptions because these are central concepts to my research. I then describe methods to elicit these attitudes and perceptions. I also define the concept of "stereotype" and refer to Preston's (1989) and Labov's (1972) research and their respective contributions to the field, and how they are used in my perception study.

Perceptions have been shown to play a role in sound changes. As Garrett et al. (1999: 333) underline: "research on language attitudes and perceptions is important to a whole range of questions. We can gain insights into stereotyping in terms of personal and social attributes, effects on communication outcomes, and language change". Therefore, attitudinal studies provide direct evidence for the study of what Weinreich et al. (1968: 186) term the "evaluation problem" in the study of language change, because attitudinal research can bring answers and broaden understanding of how linguistic change is perceived and evaluated by members of a community (Niedzielski 1996, 2002; Dailey-O'Cain 2000).

6.1 Defining attitudes and perceptions

Campbell-Kibler (2006: 57) notes that attitudes include three elements: "affect" (i.e., how speakers feel about a language or an accent), "cognition" (i.e., the beliefs they hold about these languages or accents) and "behaviour" (i.e., how they speak and react to others' speech). Furthermore, another important aspect of attitudes is the fact that they are socially constructed. Lasagabaster points out that attitudes are learnt from society, and more precisely from school, family, or social groups (2006: 394). In the same vein, Labov explains that perceptions are "socially accepted statements about language" (2006: 324), which are dynamic objects that constantly change (Lasagabaster 2006: 403).

As demonstrated through Campbell-Kibler's research (2006, 2007 and 2009) on the variable *ing*, linguistic variables influence listeners' perceptions and respondents associate linguistic variants with social characteristics. Trudgill (1986) hypothesises that the degree of salience of linguistic features results in some variables being predicted or stigmatised. Likewise, if a feature is overly salient, speakers are more inclined to be conscious of its use.

6.2 Eliciting perceptions

Scholars have used several types of experiments in perception studies. Traditionally participants are asked to report perceptions in response to fairly simple yes/no questions, by means of numerical scales or to react to acoustically manipulated stimuli to explore a range of sociolinguistic questions. This section will investigate the methods used in previous attitudinal studies that I implement in this work.

6.2.1 The Matched Guise Technique

In the 1960s, social psychologists Lambert et al. developed the Matched Guise Technique, an experimental study of listeners' attitudes towards different languages. They invited French and English speakers to listen to an alternation of French and English recordings. All the guises were performed by the same fluent bilingual speaker, but listeners believed they were hearing different speakers. They were asked to judge the speakers on personal qualities from body height to self-confidence or humour, for example. Their main findings show that listeners rate favourably speakers of their own community, thus demonstrating that this technique can elicit information about social evaluation that is unaffected by conscious processes. This work is also the first to successfully elicit stereotypes.

Although the Matched Guise Technique is presented by McKenzie as the "most frequently utilised technique in the measurement of language attitudes" (2008: 68), there is some controversy about the stimuli used. As a pioneering work, it was criticised by Agheysi and Fishman (1970) and other scholars because it was too experimental. The Matched Guise Technique raises a number of questions. Stimuli were shown not to be validated because they were considered to be too artificial, thus leading to scepticism regarding the significance of results. The experiment does not show what aspect of the stimuli triggered the listeners' reactions, particularly to which variants the listeners react, so their judgement may be based on various characteristics. Agheysi and Fishman also question the representativeness of one speaker for a whole variety (1970: 147).

Despite this methodological weakness, the Matched Guise Technique has been improved and reused in numerous studies, with the increasing use of software and technical methods to manipulate oral stimuli, these advances have been described as a promising means to drive the research further. Sociolinguists are attracted by this technique to explore language attitudes and especially to investigate attitudes towards standard and non-standard varieties (Milroy and Preston 1999).

For example, Labov (2006b) designed his own "subjective reaction tests", which are directly influenced by the Matched Guise Technique. The stimuli, 22 sentences, were produced by five women from the Lower East Side of Manhattan. These sentences include phonological variables (rhoticity and non-rhoticity in the realisation of postvocalic /r/) identified in NYC speech. Informants are asked to rate the speakers' suitability for different occupations (e.g., TV personality or factory worker). This study demonstrates that informants who have the features in their own speech have a higher awareness of these features, and judge them negatively, attributing them to the speakers' lower occupations. In conclusion, Labov's refinement of the Matched Guise Technique contributes to understanding that how listeners perceive speech impacts how speakers are judged.

6.2.2 The Verbal Matched Guise Technique

The Verbal Matched Guise Technique (Cooper 1975) is an improved version of the Matched Guise Technique. It allows researchers to compare several varieties or languages that may be further apart. Unlike the Matched Guise Technique, it requires several speakers to produce the stimuli and speakers converse naturally in their native language(s). Scholars choose to use either reading or conversational stimuli. However, there are still some limitations to this technique, such as the differences inherent in speakers' voices (e.g., prosody and rhythm), and in reading competency if the stimuli are read. In his work, the Pleasantness of an English Accent, Trudgill (1990) applies the Verbal Matched Guise Technique methodology, asking listeners from England, Scotland, Canada and the U.S. to rate 10 speakers from different parts of the UK. Listeners are then asked to fill out a questionnaire to rate the speakers according to different personal traits (e.g., pleasantness, reliability).

In my survey, I use a Verbal Matched Guise Technique illustrating spontaneous speech from several speakers from two corpora of Southern Ontario English, combined with rating scales to elicit ratings of the speakers on a number of qualities. While my experiment investigates the stigmatisation of CR, I do not explicitly call participants' attention to that variable.

6.2.3 Rating scales

Rating scale methods are applied to measure respondents' attitudes, to understand which meaning they associate with salient features. Rating scales are an effective way to consider social categories as a continuum instead of discrete variables, thus reflecting how a speaker can be more or less aware of a given feature. These scales are intuitive and familiar for respondents

and have been shown to be effective means of eliciting attitudes towards languages. However, the main criticism of this method is found in the fact that scholars reuse the same adjectives as previous studies (Watson and Clark 2015: 40), instead of determining what adjectives would be meaningful to their research objectives. To address this concern, I conducted a pilot study to determine what adjectives to use in my rating scales (see Chapter 7, section 7.3.1).

Among the rating scales used in perceptual studies, there are Likert-type scales (Edmondson 2005) and semantic differential scales (Osgood 1957). Likert-type scales are numerical, with participants being invited to rate the sentence along a scale from "acceptable" to "unacceptable", or to say how much they agree or disagree with a statement. Using a scale with an odd number of response points allows respondents to choose a neutral answer. Dollinger (2019) implements Likert-type scales in his research in order to assess the representation of respondents, and particularly the existence of CE (see Chapter 10). Semantic differential scales ask for the respondents' opinions on a scale between two antonym adjectives (e.g., good/bad, very good, somewhat good, etc.).

6.3 Stereotypes

Another central aspect of attitudinal studies is the influencing role of stereotypes. As previously shown through Matched Guise Technique studies, listeners tend to judge speech and evaluate varieties based on salient features. In this section, I attempt to define and exemplify the effects of stereotyping. According to Thomas (2002: 117), sociolinguists are interested in investigating the role and place of stereotypes in listeners' minds, and their impact on speech perceptions, and to a certain extent, on how speakers who have stereotypes in their variety are rated. In accordance with Thomas, my work investigates CE and stereotypes that may be associated with the variety. My work also examines what stereotypes are held within the hockey community and their influence on language, as well as the perceptions of HE from outsiders' perspectives.

Stereotypes can be defined as variables which are overly commented on by non-specialists. Stereotypes are inextricably linked to judgements as described by Lippman (1922: 54); they are mental concepts and play a role in perceptions held by speakers. They usually rely on generalisations, repetitions and inaccurate representations, which means that they may or may not be close to reality (Giles et al. 1987, Coupland et al. 1991: 37-38).

A few studies have shown some of the stereotypes in CE e.g., *eh* and CR. For example, Viollain (2014: 632) mentions that Canadian *eh* is stereotyped and mocked in the American series "How I Met Your Mother". One of the principal characters is Canadian and is portrayed

trying not to use too many *ehs* at the end of her sentences. This prototypical feature is associated with a rural and uneducated representation of Canadians. Viollain explains how speakers can identify a speaker of a different variety because they are aware of linguistic features of the variety. Some of these features are stigmatised, because of the connotations they carry, and it is legitimate to explore whether speakers avoid certain linguistic features because of negative connotations that may be associated with them, or conversely whether they emphasise some features because they have been stereotyped.

Nycz (2016) explores awareness, acquisition, and usage of linguistic features as well as their social evaluation. She studies a group of Canadians who were born and grew up in Canada and moved to NYC or cities in New Jersey after the age of 21. She gives evidence that Canadian speakers know the American stereotype of the pronunciation of "out and about" in reference to CR and notes that Canadians may be more aware of this variable because it is stereotyped. Her participants control the feature and use it to emphasise their nationality, of which they are proud. When informants are invited to rate the variant, they do not evaluate it as bad or good, but they say it is a Canadian feature. She shows there exist some differences of usage among the speakers: seven of them raise the diphthong, four speakers raise it only in the phrase: "out and about", four other speakers raise only in the word: "out" and two speakers do not raise their diphthong at all. In my production study, I explore CR in the speech of hockey players participating in my study (Chapter 8) and in my perception study I investigate whether respondents would consider stimuli with CR to sound more Canadian or to belong to hockey players compared to stimuli with no occurrences of CR (Chapter 7, section 7.3.5).

6.4 Preston's perceptual dialectology

In the 1980s, Preston demonstrated that non-specialist (naïve) respondents are aware of dialect areas and can also map them. This innovative field of research, termed Perceptual Dialectology or Folk Linguistics, has been developed in Preston's impressive body of work, which spans several decades (1986, 1989, 1993, 1999, 2004, 2015). Perceptual dialectology differs from traditional approaches to dialectology because it does not deal with specific descriptions of dialect differences. Instead, respondents are asked to talk about the dialects in their surrounding areas. Preston later defines what he calls "language regard": the relationship between language and space, and particularly the importance of the knowledge of naïve respondents for the understanding of language change that has a spatial dimension (2010: 126). To elicit the geographical knowledge of informants, Preston developed a solid methodology based on the following five tasks. During the "draw-a-map" task (Preston 1982), participants

are invited to outline speech areas on a blank (or minimally detailed) map. They are also asked to label the variety spoken in the dialect areas they have drawn. This results in mental maps corresponding to the respondents' perceptions of regional dialectal areas, the features of which can then be compared to traditional dialect boundaries established by dialectologists. The second task, called "degree-of-difference", elicits perceived differences between dialects in surrounding areas and the dialects of respondents. They are invited to rate the regions according to their degree of differences using Preston's initial numerical scale from 1 to 4: 1 "same", 2 "a little different", 3 "different", 4 "unintelligibly different". The third task is based on the internal representations of respondents, who are asked to rate dialects according to their degree of "correctness" and "pleasantness". In the fourth task, participants are invited to respond to speech stimuli from a dialect continuum and to indicate where the speakers are from, thus providing a dialect identification. Finally, during an interview, respondents are asked open questions on the different perceptual tasks they have just participated in. The purpose of this fifth and final task is to collect qualitative data. This task often leads to participants imitating dialects to refer to them, and these imitations are rather convincing.

Preston's main findings show that non-specialists can identify geographical areas where they perceive speech differences, even within the same region, and that they are aware of stigmatised and local speech areas. Furthermore, participants identify more distinctions in varieties spoken closer to where they live and that more closely resemble their own speech. He concludes that "perceptual norms are more stable than production" (2010: 108).

Preston also outlines four modes of awareness related to linguistic behaviour during the interview (1996). The first three correspond to non-specialists' general knowledge in terms of "availability, accuracy and detail". This relates to whether participants can discuss linguistic forms and varieties as well the degree of precision they apply to explaining these notions. The fourth mode, "control", refers to the fact that speakers are more or less conscious of their use of language. Preston shows how the different modes do not always align. For instance, a participant claims to speak African American Vernacular English, but she is not able to actually speak it when invited to do so, which means she has a high availability as she talks freely of the variety, but she has a low control over her use, since she is not able to naturally shift to this variety. Moreover, when there is linguistic insecurity (see section 6.5 below) in a speech community, informants rate the local areas as the most pleasant (high pleasantness) and other areas as the most correct varieties. In my study, I consider these four modes of awareness in the interpretation of survey responses.

Preston's methodology has been applied by other researchers, including those investigating Canadian varieties. McKinnie and Dailey O'Cain (2002) examine perceptions of 100 18-24-year-olds, from Alberta and Ontario. In the experiment they use the "correctness" and "pleasantness" scales and "draw-a-map" task from Preston's methodology. Participants were asked to rate the English spoken in each Canadian province and to compare the varieties spoken in Canada with their own. McKinnie and Dailey O'Cain's results suggest that among the varieties spoken in Canada, the English spoken in British Columbia is perceived as the most correct dialect whereas Quebec English is perceived as the least correct. Although the participants report some linguistic differences, none of them say that one variety is incorrect, a finding that leads the authors to note the tolerance of Canadians. As regards pleasantness, both groups considered their own speech to be the most pleasant, immediately followed by the speech of British Columbia speakers, while Quebec English was perceived as the least pleasant dialect. Despite the geographical distance between Ontario and Alberta, participants from both provinces saw their speech as similar to that of British Columbia (2002: 289). They both rated the British Columbia dialect at the top of the scale which means the most like their own, and Newfoundland and Quebec English at the bottom of the scale (the most different).

The map task shows comparable results, with positive labels overall, except for Quebec which was qualified as "bad English", because of a perceived influence of French. Moreover, 13% of respondents reported that Southern Ontario is a regional enclave which they described as "American style" and "industrial Northern style type of accent". In conclusion, the results show the two groups are linguistically secure because of the high rate of pleasantness and correctness they attribute to their regional dialect. Labels on the map task indicate the same clusters which are also geographically identified in the other task.

Agreeing with Preston, Thomas (2002: 118) points out that listeners can accurately identify a dialect 75% or more of the time based on linguistic factors. Considering this, Munroe, Derwing and Flege (1999) investigate the dialect of an adult who moves to a new region by means of an experiment with three groups: Canadian speakers living in Canada, Canadian speakers living in Alabama, and native speakers of an Alabama variety of English. Speakers in these three groups both produced the stimuli and judged them. Canadian respondents were given a scale from "very Canadian" to "very American", and those from Alabama were given a scale from "definitely from Alabama" to "definitely not from Alabama". Monroe et al.'s findings show that the speech of Canadians living in Alabama has changed because it is judged by both groups to be in the middle of the scale, a finding they attribute to vowel quality.

In the perception component of my dissertation, I investigate whether Ontarians are able to identify hockey players based on oral stimuli, and whether being a member of the hockey community helps in this identification. As discussed in Chapter 4, section 4.3.2, I apply the map task and the rating scales from Preston's methodology at the end of the interview in order to discuss regional variation in CE with the speakers.

6.5 Labov and the notion of linguistic insecurity

As discussed in previous paragraphs, speech can be targeted for criticism which can cause speakers to feel insecure about the way they speak. Negative assessment about language can be understood as linguistic insecurity, and this may be a factor that motivates sound change (Labov 2006b).

In his pioneering work, Labov (2006b), creates a "self-evaluation test" to study a possible case of linguistic insecurity among New Yorkers. The task consists of participants hearing four different pronunciations of a variable and then indicating which pronunciation is the closest to their own usage. His results show that New Yorkers, when reporting their usage, report the norm they think they should use (1966: 300). Labov explains how linguistic insecurity among speakers leads to a hypercorrection tendency correlated with the expression of correctness (1966: 317). He creates an index to measure the degree of linguistic insecurity of speakers. Respondents listen to two pronunciations of the same word and are invited to circle first the pronunciation they consider correct, and then the pronunciation they use. Based on these responses, an index of linguistic insecurity is assigned. This linguistic insecurity index represents the divergence between these forms, as this divergence reflects speakers' awareness of how far they do not conform to the norm. They are likely to strive to speak in a way that more closely approximates what they consider to be the correct way of speaking. Using this index, for each speaker, Labov determines the difference between their use and the norm. He concludes that class and gender correlate with linguistic insecurity, with lower middle-class speakers showing greater linguistic insecurity and women showing a high level of linguistic insecurity (1966: 321).

Forty years after the work of Labov (2006b), Preston (2013) provides a critical analysis of the means of identifying and analysing linguistic insecurity. According to him the major progress in the study of linguistic insecurity is to be found in the fact that scholars are now able to discuss diverse kinds of linguistic insecurities, and to carefully distinguish and define the

vast notion of linguistic insecurity in reference to individuals or groups. Preston (2013) proposes the following definition:

> There are those who find their region (or group) incorrect and apparently extend that to personal insecurity (e.g., NYC respondents); there are those who find their own region (or group) relatively correct and extend that to their personal security (e.g., WPEGers [Winnipeggers]), but there are also those who find their own area correct (perhaps even considerably so) but may find their individual performances lacking, particularly when local norms do not guide them (Preston 2013: 38).

Owens and Baker (1984) examine linguistic insecurity among lower middle class English speakers in Winnipeg and their study supports Labov's findings. They design an index to judge specifically Canadian linguistic insecurity. Thus, they add 22 items focusing on specific Canadian pronunciations drawn from Scargill (1974) to Labov's initial index of linguistic insecurity. They distinguish four levels of insecurity: weak (1-6), mild (7-12), moderate (13-18) and heavy (19-25). They hypothesise that Labov's index and the one they design are correlated and that the results will support the validity of their index. They show that Canadians were more sensitive to the index specifically designed for a Canadian audience.

The final conclusions they draw are the following: Winnipeggers are less insecure than New Yorkers because they sometimes report using what is considered the "incorrect" pronunciation, in particular for forms where pronunciation may differ in Canada (e.g., *often*) or with American forms (e.g., *vase*). Although the American forms are widespread, the British forms continue to be considered as the norm. Owens and Baker report that gender and class are correlated with linguistic insecurity. Women speakers have higher scores because they have a greater insecurity (the same results were shown in Labov's experiment). As regards class, lower middle-class speakers identify the correct form, but they do not report using it (Owens and Baker 1984: 347).

6.6 A bidirectional influence of perception

The exploration of methods in this field of research also reveals that influence of perceptions can be bidirectional (Drager 2010: 476), which means that the perception of a variant can influence the perception of a speaker. However, the opposite is also true: the characteristics of a speaker can induce a certain perception of variants.

In her study, Niedzielski (1997) shows how the perceived nationality of a speaker influences vowel perception. Indeed, participants are more likely to match a raised variant of the MOUTH diphthong (CR**)** with the speaker labelled as being from Canada than with the one

they are told is from Michigan. Although the raised variant is also produced in Detroit, speakers are not aware of this feature which is directly associated with Canadian speech. Therefore, the label "Canadian" makes them expect to hear someone speaking Canadian, in other words someone who produces raised diphthongs, and so their perception affects how they perceive the actual sound (see section 2.1.2 discussing CR).

In a further study, Niedzielski (1999) conducted an in-depth investigation of the CR stereotype as it is a very widespread in the U.S. Her experiment was based on Detroit. All participants listened to the same stimuli, but half of them were told the speakers they heard were from Detroit, while the other half were told that the speakers were Canadian. Her results show that the listeners who were told that the speakers were from Canada chose the raised diphthong and the others chose the lower variant. In brief, she demonstrates the weight of listeners' expectations and the fact that perception is affected depending on what dialect listeners believe they hear or expect to hear. Nevertheless, she obtained different results with the group of hockey fans. According to Niedzielski (1999: 80) this may be because they have a greater familiarity with CE through hockey. They are able to point out more differences, such as lexical items, stress patterns, and the pronunciation of some words.

Furthermore, variationists have demonstrated that listeners are favourable to variation if it is already present in the speech around them, favoured by exposure to speech and recurrent patterns. What is perceived by listeners is influenced by their knowledge and expectations (Kendall and Fridland 2021: 33) and contributes to interpretation. Listeners' expectations (Kendall and Fridland 2021: 149) are linked to macro social factors, and they influence how listeners judge both the speakers and their speech. These findings can be related to the significance of the notion of "characterological figure" (see Chapter 4, section 4.2.3).

In this chapter, I have shown that perceptual studies are a growing area of research that applies several new methods and techniques. I have described the different approaches that are used by scholars to investigate very diverse research questions, such as the Matched Guise Technique, improved in the form of the Verbal Matched Guise Technique and the various rating scales. Since participants can assign personal qualities to speakers, I have discussed the notion of stereotypes and their influence on perceptions about speech and speakers more generally. I have explained the complex notion of linguistic insecurity and offered a discussion on the different methodologies employed to measure it among speakers. I have also shown how naïve respondents have geographical knowledge of language and can identify different varieties or dialects based on speech samples. The research outlined in this chapter influenced my own

study and my choice of methodology which will be outlined in the following chapter where I discuss the online survey that I devised for my perception study.

Chapter 7 The perception study survey

In this chapter, I present the perception component of this research. I conducted an online survey of perceptions about CE and HE and the identification of hockey players based on oral stimuli, since this research intends to investigate further the preliminary findings that revealed some associations between hockey and speaking a typical CE, despite hockey being surrounded by stereotypes in Canada. The present chapter offers a discussion of my methodology and addresses the steps leading up to the distribution of the online survey. It also provides the reasons behind the selection of participants and their recruitment. A thorough description of the profile of respondents who completed the study is also given.

I chose to distribute an online questionnaire as these surveys are easy to implement and can reach a large sample of population, while covering a large geographical area. They also have the advantage of being less time-consuming than other modes of administration. Questionnaires collect self-reported information, they are directly filled out by participants, they respect privacy and promote greater disclosure, and participants feel more comfortable providing truthful and accurate responses (Chambers 1998b).

The survey I designed was approved by the Western University Non-Medical Research Ethics Board on May 10th, 2021 (project ID 114164) (see the certificate in Appendix B.1).

7.1 Fieldwork

The recruitment process for the perception part of the study was exclusively administered online, with the objective of reaching as wide a range of participants as possible to ensure representativeness. I recruited a further 19 participants who were interviewed in the production part of this research (PAC-LVTI Ontario (Canada) Hockey English Corpus) to study their production and perception in parallel.

7.1.1 Selection of participants

Prospective participants had to correspond to the following set of predefined criteria to be able to participate in the study:

- Be aged 18 or over

- Be born and currently living in Ontario

- Be native English speakers

Moreover, I also targeted recruiting participants who were recorded for the corpus used in the production study.

7.1.2 Recruitment of the participants

The survey is limited to the geographical area of Ontario for the following reasons. First, with 14,223,942 inhabitants (2021 Canadian Census), Ontario is the most highly populated province of Canada and thus offers a large pool of potential participants from which to draw. Secondly, focusing on one region of the country allows me to use a network of contacts to easily promote and share the survey link. Finally, as demonstrated by Preston (2010), listeners have a better knowledge of varieties closer to their own, so it is preferable to recruit participants from Ontario for a perception study on speakers from Ontario.

The survey was promoted on different social media platforms in order to maximise participation. It was active from May 1 to June 21, 2021. The link, which provided easy access to the survey, was first posted on Facebook along with the recruitment poster (see Appendix B.2) and it was then shared through different Facebook accounts. Because the response rate slowed down for a week, by June 10th, after 129 participants had completed the survey, I decided that another means of recruitment was needed to recruit the expected number of 150-200 participants. I used the friend-of-a-friend method (Milroy 1980) and contacted members of the Hockey Conference (where I presented preliminary results of the study in June 2021). In this second phase of recruitment the survey link was shared on Twitter where it circulated quickly, resulting in a further 120 participants completing the survey over 10 days.

I also recruited participants from the PAC-LVTI Ontario (Canada) Hockey English Corpus to participate in the perception study. When I interviewed them for that production component of this research, all participants gave their consent to be recontacted for future research about language and perception. The email addresses they provided were used to send them a personal invitation to complete the perception task.

As a result of these methods, a total of 249 participants completed the survey, 11 of whom were speakers from the PAC-LVTI Ontario (Canada) Hockey English Corpus. After outlining the inclusion criteria and presenting the recruitment process, I now present the profile of the survey respondents.

7.2 Description of the respondents

In this section, I describe the survey respondents in terms of their gender, age, education, employment, and hockey habits.

7.2.1 Gender

The data in Figure 7.1 show that the survey sample includes 57.4% women (N=143 respondents), 40.2% men (N=100), and 1.2% (N=3) non-binary/third gender participants, as well as 1.2% (N=3) participants who prefer not to disclose their gender. Although according to some studies, women are more likely to respond to a paper survey and men respond in greater proportion to an online survey (Kwak and Radler 2002; Saxon et al. 2003), this pattern is not observed in my data, as there are 17% more women than men who responded to this online survey.

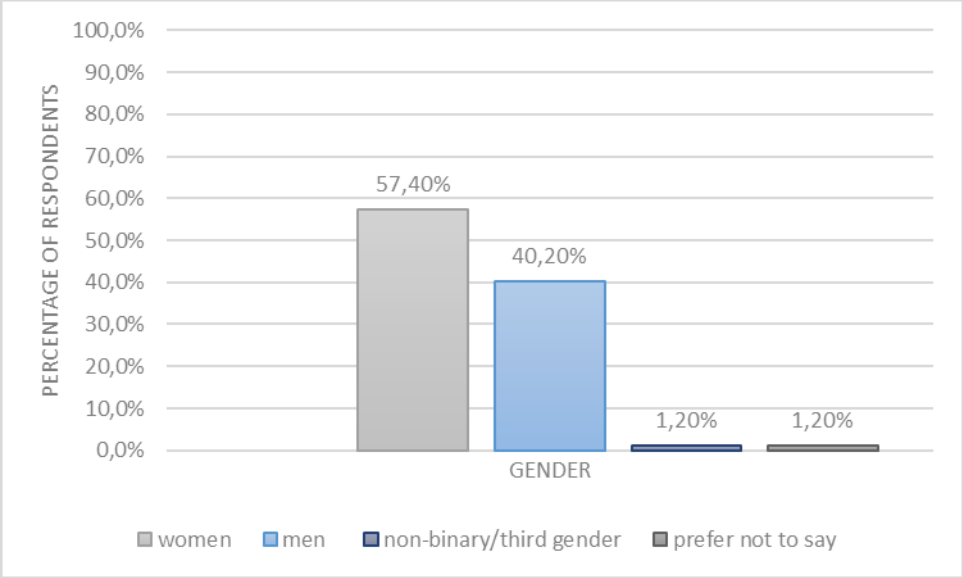

Figure 7.1: Distribution of the respondents by gender.

7.2.2 Age

Figure 7.2 displays the distribution of respondents by age. There are fewer respondents aged 50 years old or older than there are respondents from younger cohorts. This is consistent with a tendency observed by Mulder et al. (2019: 9) who note that around the age of 50, willingness to participate in online surveys starts to decline, although this may be simply an artefact of the survey distribution, with fewer respondents in that age group having received the survey link. Web-based surveys are specifically less accessible to older cohorts due to their format. Very few respondents corresponding to the youngest and oldest targeted age groups completed the survey: 0.4% [18-19] and 1.6% [70-79].

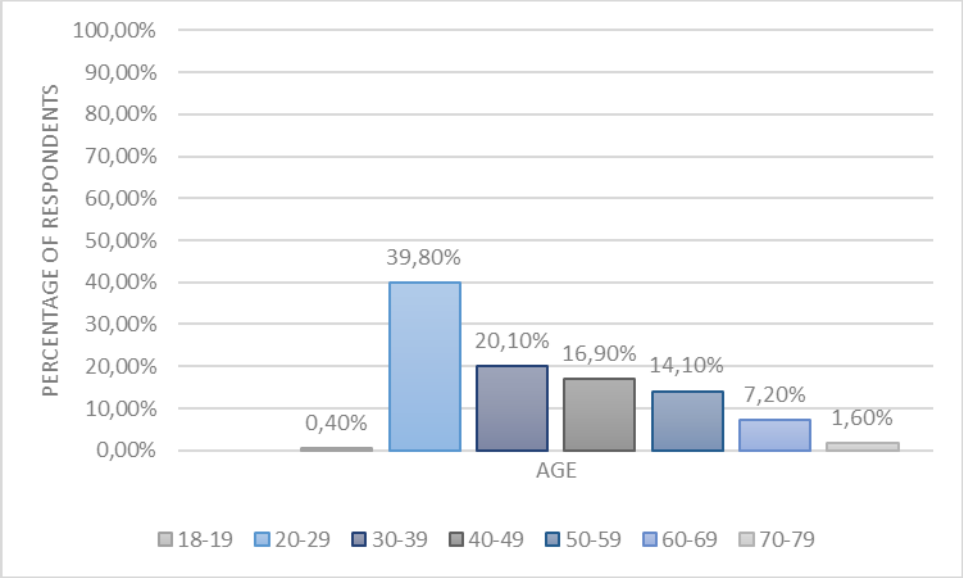

Figure 7.2: Distribution of the respondents by age

7.2.3 Level of education

The distribution of the sample according to the level of education of the respondents is shown in Figure 7.3. It can be observed that there is a large proportion of respondents (92.4%) who have some form of higher education: 49% of respondents hold a bachelor's degree, 18.1% hold a master's degree, 13.7% went to college, 11.6% have a doctorate. Of the remaining 7.6%, 4.8% completed their high school education and obtained a diploma, 1.6% did an apprenticeship and 1.2% went to high school but did not get their diploma.

While this would appear to confirm Mulder et al.'s (2019: 7-8) findings that respondents with higher levels of education have a greater willingness to participate in surveys, it should be noted that participant recruitment was carried out through university networks, so it is unsurprising that the sample contains few participants without higher education.

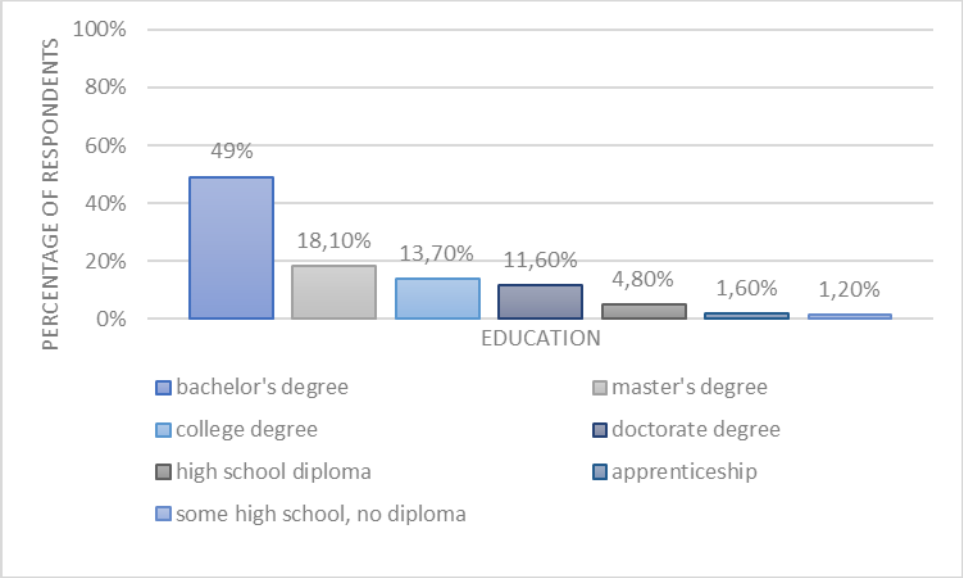

Figure 7.3: Distribution of the respondents by education.

7.2.4 Occupation

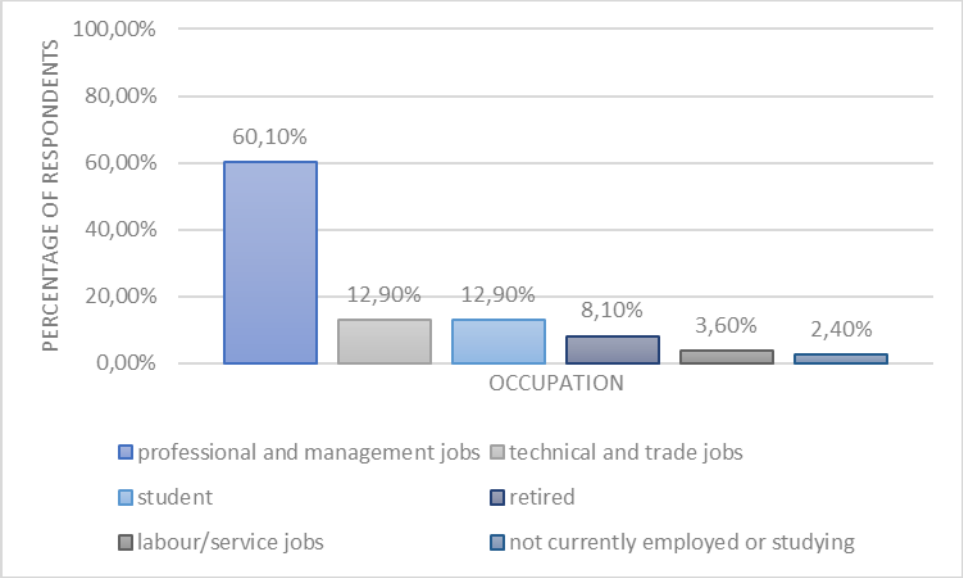

Figure 7.4: Distribution of the respondents by occupation.

Figure 7.4 shows the distribution of participants according to occupation. The majority of respondents hold professional and management jobs (60.1%), while there are far fewer who hold technical and trade (12.9%) and labour/service jobs (3.6%), and smaller proportions still of retired respondents (8.1%), students (12.9%) and respondents who are not currently employed or studying (2.4%). Among retired respondents, 80% belong to the professional and management sector, 15% from technical and trade and 5% are manual workers (e.g., construction, cleaning, landscaping). The online collection of data affects the sample, since less educated and lower socioeconomic groups are less likely to complete online surveys, because

as less frequent internet users, they are less likely to have access to survey links (Jang and Voderstrasse 2018). However, it should be noted here as well that the underrepresentation of certain groups in the sample is in all likelihood a result of the fact that these groups were not targeted in the recruitment process.

7.2.5 Birthplace and residence

All respondents were born in Ontario and were living there at the time they completed the survey, as this was a mandatory participation criterion. To present the data clearly, the study does not include data on birthplace and residence where there are four or fewer participants. The complete list can be found in Appendices B.10 and B.11.

City	Region	N	Percentage of respondents
Toronto	Southern Ontario	48	19,3%
London	Southwestern Ontario	44	17,7%
Ottawa	Southern Ontario	17	6,8%
Hamilton	Southern Ontario	13	5,2%
Kitchener	Southern Ontario	7	2,8%
Sarnia	Southwestern Ontario	7	2,8%
Burlington	Southern Ontario	6	2,4%
Windsor	Southwestern Ontario	6	2,4%
Brampton	Southern Ontario	5	2,0%
Guelph	Southwestern Ontario	5	2,0%
Mississauga	Southern Ontario	5	2,0%

Table 7.1: Cities in which at least five respondents were born.

Table 7.1 shows the cities and regions in which the majority of the respondents (65.4%) were born. The participants were mostly born in the provincial capital and most populous city

Toronto (19.3%). Toronto is located in Southern Ontario, a primary region in Ontario[54], which is the most densely populated region in Canada. The participants were also born in six other cities in Southern Ontario. The second city where participants were born the most is London, which is the largest Southwestern municipality and the eleventh largest metropolitan area in Canada. Southwestern Ontario is a secondary region of Southern Ontario. As regards, their cities of residence, respondents mostly live in London or Toronto. Participants also live in the capital city of Canada, Ottawa (see Table 7.2).

City	Region	N	Percentage of respondents
London	Southwestern Ontario	59	23,69%
Toronto	Southern Ontario	42	16,87%
Ottawa	Southern Ontario	33	13,25%
Cayuga	Southwestern Ontario	8	3,21%
Hamilton	Southern Ontario	7	2,81%
Waterloo	Southern Ontario	7	2.8%
Guelph	Southwestern Ontario	6	2,41%
Kitchener	Southern Ontario	6	2.4%
Cambridge	Southern Ontario	5	2,01%

Table 7.2: Cities of residence in which at least five respondents lived at the time they completed the survey.

As previously mentioned, in the demographic section I included a sub-section targeting the potential hockey players in the sample. With regards to hockey, 50.6% of the respondents have never played hockey and 49.4% have played at least once in their life. Among the respondents who have played hockey, 58.5% are not currently playing whereas 41.5% are current players of hockey. After discussing the profile of the survey respondents, I now present the survey methodology in depth.

[54] The other primary region in Ontario is Northern Ontario, but this region only includes 6% of the Canadian population. This is reflected in the data since only four respondents were born there, and because they do not reach the threshold of 5, they do not constitute a big enough group to appear in Table 7.1.

7.3 Survey design

The questionnaire was administered on the survey platform Qualtrics (Qualtrics, Provo, UT 2004). It is a three-part online survey which includes demographic information, two sections dealing with CE and HE and a listening task.

In the following sections, I discuss the pilot study I conducted before finalising the survey and I give a full account of the survey methodology and rationale.

7.3.1 Pilot study

To test the effectiveness of the survey and make any necessary adjustments, I shared the survey with 10 Canadians who would not take part in the study because they did not meet the inclusion criteria. I then adjusted the wording and the structure of some of the questions. For example, I reduced the number of multiple-choice answers in the question on education (see Appendix B.6, question 7), and I deleted the following entries: "some college credit, no degree", "some undergraduate education" and "some postgraduate education" to keep the question shorter. I also added precise examples to the multiple-choice options provided in the question on employment and hockey level to be clearer. For Question 6 "Which of the following categories best describes your current employment?", I added examples such as "professional and management occupations: e.g., dentist, lawyer". And for Question 14, "What level of hockey have you played at?", I added examples such as "recreational level in hockey: e.g., with friends, not in a league".

7.3.2 Instructions to participants

Before agreeing to participate in this research survey, participants were presented with a letter of information (Appendix B.3) which provides details about the three different parts of the survey and the expected length of time needed to fill in the survey and which advises the respondents to use a computer to complete the survey, even if it works on smartphone as well. The exact purpose of the study is not clearly disclosed; participants are notified that the survey deals with "questions about language and Canadian identity", while the hockey component is not explicitly stated. In this letter, the respondents were also informed that they were required to answer all the questions in order to be included in the study ("if you do not answer all the questions, your responses will not be included in the study at all"). The survey was designed this way to obtain uniform and usable data, and participants were not allowed to skip a question before proceeding to the next one. This criterion did not apply to the demographic section, where three questions were mandatory: the questions about birthplace (question 4), place of

residence (question 5) and the question which enables the researcher to retrieve information on the participation in the production study (question 1) because information obtained through those responses is essential to the analysis.

At the end of the survey, an automatic message (see Appendix B.5) which echoes the letter of information is displayed. It thanks respondents for participating and invites them to share the survey link. It also informs them that they can email the research team to obtain a report of the results once the study is completed. It provides a follow-up to respond to the curiosity of some respondents regarding the expected answers in the questionnaire. This information is provided to disseminate the results gathered and to make the research accessible.

7.3.3 Demographic criteria

This section of the survey was developed to address three main goals: first, to obtain the general profile of the respondents, secondly to identify speakers from the PAC-LVTI Ontario (Canada) Hockey English Corpus, and thirdly to distinguish players and non-players by collecting information about hockey. Thus, participants were only asked for basic demographic information (gender, age, place of residence, place of birth, employment, and education) to establish their sociolinguistic profiles (see Appendix B.6, "(1) information about you").

To associate the participants' interview data with their responses in the perception study, the following yes/no question was asked: "were you interviewed in the production study?" (Question 1). It was displayed only when participants gave an affirmative response. They were then instructed to create an identification code. This code was unique and was formed by the first letter of their first name, the first digit of their age and the first three letters of the city they were born in. Once created, this code allowed me to associate the survey responses of all the interviewed participants from the PAC-LVTI Ontario (Canada) Hockey English Corpus, with their production data. Before creating the identification code, the participants who answered in the affirmative to the question were informed that two aspects of the letter of information (see Appendix B.3, Question 1') were different for them. They were then provided an additional letter of information (see Appendix B.4) which notified them that the researcher could associate their responses with their interview using the code they created. They could also withdraw their data from the study up to one month after completing the survey, an option not available to other participants because their responses were anonymous.

In addition to these general demographic questions, a section on hockey was designed. Unless participants answered in the affirmative to question 8 ("have you ever played hockey?"), they were not shown the additional five questions on hockey, about the length of time they have

been playing hockey (Q12), the age when they started (Q13), their level (Q14), the degree to which they identify with the sport (Q15) and the importance of hockey for them (Q16) (see Appendix B.6). Comment boxes were a useful addition in this section because they encouraged respondents who wished to present arguments or develop their answer to do so, particularly in the questions on "identity" and "importance", which were kept very general on purpose (Questions 15 and 16). Finally, two further questions were displayed if respondents answered in the affirmative to Q9 ("are you currently playing hockey?"): Q10 ("how many times a week do you play?") and Q11 ("do you play hockey in both the winter and summer?")

7.3.4 Survey questions

The main section of the survey includes two subsections respectively on CE and HE, which follow the same outline. The study questions were designed to elicit information about awareness, knowledge, evaluation and representation of these varieties among Ontarians. Closed questions were preferred, providing participants with response choices through two types of questions: yes/no questions and tick boxes allowing the respondents to select multiple answers from a list of choices, qualitative data provide insights and unexpected data. To explain the choice of questions coherently, the questions are not treated in the order they are presented in the survey.

About Canadian English

Traditionally respondents are surveyed by asking them yes/no questions to understand the meaning they associate with linguistic features (Watson and Clark 2015: 39). This subsection about CE includes nine questions: six closed questions and three open questions. These questions were designed to access the core meanings and perceptions of CE. My research questions encompass the awareness and perceptions of Ontarians about CE. First, Ontarians are asked whether they are familiar with the concept of CE. Second, they are invited to define CE. Third, they are asked to indicate how they think Canadians sound and finally they evaluate CE in comparison with other varieties (British and American Englishes).

The concept of CE

Question 17 addressed the notion of CE in general: "Are you familiar with the term Canadian English?" and was an initial attempt to determine whether Ontarians recognise a term which designates their variety of English. Only participants who answered this question in the affirmative were able to continue answering this section of the survey. This question echoes the debate on the ambivalent status of the variety mentioned in Chapter 1, section 1.3.5.

Definition of CE

Participants were asked: "Can you name something specific to Canadian English? Using your own words, list some features of Canadian English" (Q19). The goal of this question was to review the specific features and references those respondents associated with CE, in a way that was not limited to linguistic comments. The data collected are compared to previous research to determine whether perceptions and representations have evolved.

Ontarians' representation of the Canadian accent

This section offers a general picture of how CE is perceived according to how it sounds when it is spoken. Respondents are first invited to consider their own accent, then they are asked to judge the Canadian accent generally and finally they are asked to judge the Canadian speakers.

Participants are asked: "Do you think you speak Canadian English?" Two answers are available: "Yes, I sound Canadian when I speak" or "no, I do not sound specifically Canadian when I speak" (Q18). This question invites respondents to decide if they feel like they sound specifically Canadian. Some Canadians may think they sound more British or American when they speak, which may indicate a certain dissociation or distance from CE and therefore from Canadian identity. These participants may have different evaluations and perceptions when describing or judging the Canadian variety.

Participants were presented with a checklist of 10 definitions and were invited to choose up to three definitions that best correspond to how they perceive the Canadian accent (Q22). This item is designed to score attitudes towards CE (see Appendix B.6). Terms used in this question were spontaneously employed at the end of the interview when completing the perceptual tasks (Chapter 4, section 4.3.2). Speakers from the corpus defined CE as a homogeneous variety (e.g., *from here to Vancouver I don't think there is a difference*, "*except Newfoundland everybody is much the same*), and the Canadian accent is *understandable* and *plain*. Furthermore, some of these definitions refer to questions raised in the literature review, such as whether the Canadian accent is associated more with urban or rural areas (such as portrayed in Letterkenny), whether it is considered to be homogeneous or heterogenous (see section 2.5.1), or whether it sounds correct (see section 1.3.3).

Participants were asked to choose up to three adjectives out of the suggested 10 to define how they perceive "someone speaking Canadian English" Q23 (see Appendix B.6). This item implicitly elicits representations of speakers of CE. Polar adjectives were used to give respondents binary options. The adjectives used refer to two semantic dimensions. First, they

portray solidarity and social attitudes (friendliness, trustworthiness, that is to say, broad positive human qualities) and secondly, they refer to status (education and articulation). This choice was based on previous research such as Trudgill (1974) which revealed that respondents are more likely to associate non-standard varieties with positive personal traits such as solidarity, which have a certain attractiveness, while standard varieties are associated with low ratings on personal traits but high ratings on competence. Edwards (2009: 91) also argues that low prestige varieties may have more positive connotations in terms of social qualities but not intellectual ones.

CE among other varieties

In order to determine whether participants believe CE is different from British and American varieties of English, Q20 asked them whether the Canadian accent is different from AmE (*Do you think the Canadian accent is different from the American accent? Using your own words can you describe the differences?*) and Q21 asked the same question regarding BrE. These questions were designed to elicit attitudes towards other varieties of English, and to assess participants' latent ranking of these varieties, especially in terms of prestige. As previously mentioned, the British variety of English has held a prestigious status in Canada (see Chapter 1, section 1.2.2), whereas AmE has generally been perceived as less correct than CE, thus leading Canadians to object to being misidentified as Americans.

About Hockey English

After explaining the methodological choices made in formulating items for the subsection on CE, I address HE in this subsection. Here again, the survey was designed to assess the core meanings and perceptions that non-specialists in Ontario could hold about the hockey players' variety. In order to answer my research questions, which inquire into the existence of HE and its perception as typically Canadian, I use five closed questions and four open questions. This section of the survey begins with two straightforward questions to determine whether this part of the research was based on realistic assumptions.

Concept

First, respondents were asked whether Canadian hockey players have a distinct way of speaking. If participants gave an affirmative answer to this question, the other questions in this section were displayed for them. (Do you think hockey players have a specific way of talking. In other words, is there such a thing as "Hockey English" in Canada? (Q24))

The second question invited respondents to affirm whether or not they speak HE (Do you speak "Hockey English"? (Q26)).

This question was created to distinguish those who think they speak HE form those who do not think they do in the data collection, so this factor can be considered in analysing their perceptions in a way that contrasts insider perceptions of HE to outsider perceptions from people who do not engage in the sport. Further questions in the survey focused on eliciting definitions and representations non-linguists may associate with HE, and how they consider HE in relation to CE.

How do Ontarians define HE?

Respondents were asked three open questions to enable them to be more specific about their perception of HE: (1) "What does a hockey player sound like?" (Q27), (2) "Do you think there is a difference between male and female hockey players' way of speaking?" (Q28) and (3) "Do you think "Hockey English" is only used on the ice/while playing hockey?" (Q29). The first question lets the respondents express themselves about features, associations and references they may have about HE and the features they may associate with speakers of this variety. The second question addresses the gender associations respondents may make concerning this variety, since this element was raised during the sociolinguistic interviews, in which some participants indicated that a strong gender difference existed in the hockey community. Considering that hockey has traditionally been an exclusively male or male-dominated sport and that it is only slowly becoming more inclusive, differences of language use between men and women and therefore their representation is central to this research. Lastly, participants were invited to reflect on HE as a context-based variety limited to the context of hockey. This question examined whether HE is considered to be used beyond the restricted context of hockey, looking for explanations as to why some Canadians associate HE with CE. This question investigates whether HE might be a sociolect developing beyond its initial group of users and explaining why it is sometimes related to CE.

HE in relation to CE

The final question of the second part of the survey investigates the status attributed to the English spoken by hockey players in Canada (HE) in relation to CE (Q25, *Do you think "Hockey English" is distinct from Canadian English? Using your own words can you describe the differences?*). This question aims to determine whether participants distinguish HE from CE and what would be the main differences they identify, or on the other hand, whether they understand HE as a variety existing within CE and what characteristics are used to describe the similarities. Respondents are encouraged to elaborate on their answers in a comment box.

7.3.5 The listening task

The third and final part of the survey collects listeners' reactions to examine whether CR is stigmatised and provides data to identify correlations between the presence of CR and the perception of sounding Canadian or sounding like a Canadian hockey player. Therefore, this task aims at eliciting whether hockey players can be correctly identified by non-linguists using spoken speech samples. This task includes a Verbal Matched Guise Technique combined with a five-point semantic differential scale and a multiple-choice question, offering four choices to the respondents (yes this is a hockey player, no this is not a hockey player, I have no idea, and there is no way of telling). In addition, a comment box option encourages participants to explain their choice. This task aims at eliciting information about participants' awareness of CR and highlights the differences associated with the two diphthongs. As noticed by Niedzielski (1999: 318) the traditional CR diphthong /au/ is often noticed by speakers, whereas the /ai/ diphthong remains unnoticed.

Selecting the speakers

In order to test whether hockey players would be identify using oral stimuli, I selected stimuli from speakers from two corpora. The PAC-LVTI Ontario (Canada) Hockey English Corpus provides speakers who are hockey players from London, Ontario and the non-players' speech comes from the Southwestern Ontario Regional English corpus (SWORE) (Iannozzi 2016), portraying Canadian speakers from the same region in Ontario but who have never played hockey.

The next section presents the sociodemographic profiles of the speakers and their engagement with hockey. MC1 (HII score 14, group 3) who is in his forties, is a claim examiner in an insurance company with a two-year college diploma. He was born near Toronto. For him, hockey is particularly important, and he self-identifies as a hockey player. He plays a minimum of four times a week recreationally, both in the winter and summer. He watches a lot of hockey live or on TV. He thinks there is a way of talking associated with hockey, but he describes it negatively. RS1 (HII 17, group 3) is in her early twenties and was born, grew up, and lived in a city in north-eastern Ontario until she was 18. She has a bachelor's degree in English and works in retail. She considers hockey to be a central part of her life, a lifestyle according to her. She started playing hockey at 10 and has never stopped. She plays four to five times a week in a competitive team. She notices that she speaks HE whenever she is with hockey friends (see section 5.3 to read more detailed descriptions of the speakers of the corpus).

The two non-players from the SWORE corpus were born and grew up in Southwestern Ontario. DH is in his early twenties. He was born in Sarnia and has been living with his spouse AH for a year in Petrolia, an area that he identified as being rural. He has a bachelor's degree, and he now works in industry. AH is in her early twenties. She was born in London, but she grew up in a rural area near London. She has a two-year college degree and works in education.

The 10 stimuli I selected are extracted from these four speakers' informal conversations within sociolinguistic interviews. They were chosen because they illustrate the presence (one or two occurrences) or absence of CR. Among the stimuli, six sentences are produced by men and four sentences by women. The men's recordings include one sentence with one token of CR, one with two tokens of CR and one with none of the variants under study, whereas the women's recordings have one sentence with the CR variant and one without. The recordings are presented randomly to eliminate order bias. Context of oral excerpts is extremely important and has been shown to be central to interpretation since respondents imagine the context of the utterance if it is not explicitly given to them (Lee 1971). I therefore chose to give the context of each sentence which was selected (see Appendix B.6).

Furthermore, the occurrences of CR illustrate different lexical items and represent both diphthongs PRICE and MOUTH. The formant values were measured to be certain raising was present.

Coding of stimuli

To refer to the stimuli easily I created the following coding system. It includes three pieces of information: (1) gender: F stands for female and M for male; (2) hockey: N for non-players or P for players; and (3) the studied variable: ØCR, 1CR or 2CR, illustrating the number of tokens of CR in the stimulus. For example, FN_ØCR refers to a woman who is not a hockey player and her sentence contains no occurrences of CR. Below is the list of the stimuli for each speaker. The words containing CR are in bold and the measures of F1 and F2 are written in between square brackets.

MP_ØCR: We've been to a couple of concerts.

MP_1CR: I have a great work **life** balance [F1: 546; F2: 118]. The diphthong is very raised.

MP_2CR: I would differ that to my **wife** [sic] and she'd probably say Old **South**. [F1: 515; F2: 1675] [F1: 581; F2: 1466]. The diphthongs are very raised.

MN_ØCR: A Christmas party of 48 people.

MN_1CR: It's **nice** over here [F1: 688; F2: 1756]. The diphthong is quite raised.

MN_2CR: Even **out** front it was, I don't know, maybe **about** a foot above your knee [F1: 564; F2: 1579] [F1: 478; F2: 1227]. The diphthongs are very raised.

FP_ØCR: Mostly just sports

FP_1CR: I like **writing** [F1: 721; F2: 1711]. The diphthong is raised.

FN_ØCR: I helped a little bit in the actual pharmacy.

FN_1CR: I wasn't allowed to go **out** a whole lot. [F1: 615; F2: 1337]. The diphthong is quite raised.

Semantic differential scale

The popular method, well known among survey takers, of a five-point semantic differential scale (Osgood et al. 1957) is employed to collect evaluative reactions towards CR. After listening to each stimulus, the participants are requested to rate the person they have just heard on four categories: friendliness, education, Canadianness and accent using the semantic differential ranking scales, which present polar adjectives at each end (see Figure 7.5).

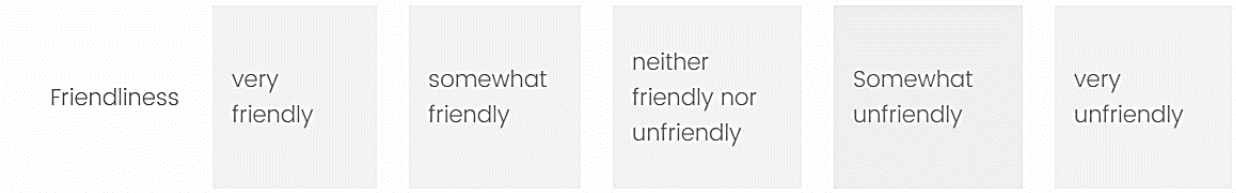

Figure 7.5: A screenshot of the five-point semantic differential scale of friendliness

It has been demonstrated that participants associate meaning with a linguistic production (see sections 6.2 and 6.3) and a semantic differential scale allows researchers to capture that meaning. This task is based on the assumption that Ontarians are able to identify a variety close to their own, Hockey English, and to associate personal qualities to the speakers.

The friendliness and education scales respectively represent the solidarity dimension and the status dimension. This allows the researcher to evaluate respondents' level of adherence to the stereotype that hockey players are perceived as uneducated, as well as the image that Canadians are commonly very friendly. The Canadianness scale elicits whether hockey players are perceived as sounding particularly Canadian in order to begin to answer the research question on the representation of HE and CE, while the accent scale may demonstrate that a link exists in the minds of Ontarians that associates being a hockey player with having a thicker

Canadian accent. One can also wonder whether there is a link between the presence of CR, its frequency and the scale of accent or Canadianness.

Multiple-choice question

A multiple-choice question invites the respondents to evaluate whether the speakers in the stimuli could be hockey players. I am interested in knowing whether respondents can identify hockey players based on speech samples. When participants identify a speaker as a hockey player, a comment box opens asking them to indicate what triggered their reaction ("What made you think so?"). As they have just heard a sample of speech, specific comments about language are expected which would help in completing the perceived profile of hockey players.

7.4 Methodological limitations of the perception study

Although this perception study provided compelling results, there are three main limitations to note. The first limitation is time. As a researcher I was eager to collect as much information as I could, but it has been shown that respondents' attention decreases, and their withdrawal rate increases when the length of the survey exceeds 15 minutes (Hoerger 2010). With a longer survey, I could have asked respondents to provide more detail to support their answers, which would have produced unexpected results contributing to further the investigation.

There are more limitations inherent to the listening task. Because samples of spontaneous speech from multiple speakers are used as stimuli, the Verbal Matched Guise Technique has the limitations inherent in this methodology and which have been addressed in the literature review (see section 6.2.2). It is not possible to control all factors and to prevent voice quality, intonation and content of the utterance from influencing respondents' perceptions. Respondents based their reactions on multiple components of the stimuli, and it is impossible to study a variable in isolation, except if the stimulus is acoustically manipulated to produce a stimulus that only differs in one unique variant (Campbell-Kibler 2007). However, the comment section does offer an opportunity to obtain a better representation of the beliefs of the respondents.

With regard to recruitment, and especially to contacting the participants of the PAC-LVTI Ontario (Canada) Hockey English Corpus, it was an arduous exercise as the approval from the ethics board was a lengthy procedure resulting in the email addresses of some participants becoming obsolete, particularly those of the students who had provided their student email addresses. As a result, only 10 out of 19 speakers of the production study participated in the perception study and used the code to allow the identification of their responses. Among them, four did not report being familiar with the term "Canadian English" and therefore did not reply

to the series of questions on CE. Similarly, three of them answered "no" to Q24 (*Do you think hockey players have a specific way of talking. In other words, is there such a thing as "Hockey English" in Canada?*), and therefore they were not presented with the questions on HE. Moreover, the answers of these respondents who report being familiar with the term "Canadian English" (N=6), and those who report they think there is a HE (N=7) did not stand out in a way that would justify analysing them separately from the answers of other respondents. For this reason, their answers are not commented upon further in the presentation and discussion of the results of the perception study in Chapters 10, 11 and 12.

In conclusion, drawing on the interdisciplinary possibilities within the PAC project, the production component of this thesis is combined with a perception component, and the methodology of this latter part of the study is explained in this chapter, along with the profile of respondents. Attitudinal studies have shown that non-specialists have knowledge about language variation, and that they are also able to judge speech stimuli and to rate speakers according to their speech. I have described and evaluated a range of methodological approaches from which I draw for this study. I have illustrated the purpose of the object of study, and how the questions serve to elicit answers that will allow me to address the research questions. The survey is based on rigorous methods and was tested with a pilot study and improved based on previous study.

Thus, the second part of this dissertation has provided the rationale and methodology applied in both the production and perception component of this research, reviewing the literature from which this research is part and contributes. The third and last part of this dissertation provides the analyses, the results and interpretation of the examination of the data of both studies.

Part III Results

Chapter 8 Canadian Raising

Canadian Raising (CR), a salient feature of CE, first identified by Joos (1942) and later labelled by Chambers (1973), is the raising of the nuclei of the diphthongs in the lexical sets PRICE and MOUTH triggered by preceding voiceless consonants (see Chapter 2, section 2.1.2). While raising in the vowel of MOUTH is a prevalent stereotype of CE, raising in the vowel of PRICE remains largely unnoticed (Chambers 1989: 76). Researchers have identified patterns of apparent-time change, some of them showing that CR is becoming less present (Boberg 2008: 140, Labov et al. 2006: 221). Its unstable status has led researchers to investigate sociolinguistic aspects of the shift as well as the fronting in CR, since it has been described as another change in progress in CE (i.e., the nuclei of the diphthongs are realised further forward in the mouth). This production study examines the situation of CR in the variety spoken by hockey players and aims to shed new light through descriptive and acoustic analysis. It seeks to answer the following research questions: (1) is CR present in the speech of hockey players?; (2) do hockey players who are more involved in hockey, as represented by a high HII score, exhibit a higher degree of raising?; (3) is raising conditioned by social factors (age, gender, SES)?; (4.1) Is fronting replacing raising or (4.2) is it an independent change in progress?

Raising has first been determined using an acoustic benchmark of a minimum difference of 60 Hz in the first formant (F1) between raised and unraised allophones (Labov et al. 2006). However, Boberg (2008: 138) suggests that this benchmark can be extended to capture raising more accurately in CE. He proposes the following benchmarks (in comparison to the corresponding non-raising context, /ai/ or /au/): a 110 Hz in F1 difference for /aiT/, a 142 Hz difference in F1 for /auT/ and an 85 Hz difference in F1 for /auN/.

These acoustic benchmarks are adopted in the analysis of the unnormalised data of the production study. I principally use the 60 Hz of Labov et al. (2006) but I emphasise when vowel realisations also correspond to raising according to Boberg's benchmarks (2008), I follow Labov et al.'s benchmarks in order to be able to extend this benchmark to more phonological contexts, since all contexts were not assigned a benchmark by Boberg (2008).

Raising can also be determined when the difference in formant values between two environments reaches a significance level of $p<0.05$. This is the definition I follow in the analyses of the normalised data, since the Lobanov-normalised data are given in z-scores and not in Hertz, and thus do not allow application of the benchmarks in Hertz described above.

The definition of raising in acoustic terms is further clarified by Sadlier-Brown (2012) to explain individual variation. In this study, when allophones fall under this definition of raising and meet the acoustic benchmark, speakers are qualified as "raisers". However, there are varying degrees of individual variation in realisations of raising, and this term needs to be nuanced. Following Sadlier-Brown's approach, the term "weaker raisers" is applied to some of her speakers who do not reach the raising benchmark because they do not raise in the traditional context of raising. She also uses the term "non raisers" for speakers who produce higher /au/ and lower /auT/ resulting in a less pronounced difference between raised and unraised contexts. In this study, I use the term "weak raisers" in reference to speakers who do not reach the raising threshold, because they raise not only in in phonological environments where raising is expected (i.e., /auT/), but also in those in which raising is not expected (i.e., /au/, /auD/), thus leading to an F1 difference between these two environments that does not reach the raising threshold of a 60 Hz. I use the term "hyper raisers" to refer to speakers who raise in both contexts and who still reach the raising threshold, which means that although they raise in the environment where raising is unexpected, they raise even more in the context where raising is expected, resulting in an F1 difference between the two environments of at least of 60 Hz. In both cases, speakers raise in both contexts, but "weaker raisers" do not reach the raising threshold while "hyper raisers" do.

Based on the same model as raising, I establish the degree of difference between two allophones to examine the degree of fronting, even though a similar benchmark to determine whether an allophone is fronted does not exist. In the literature, no difference in Hertz has been established between a fronted and unfronted variant, but Boberg (2008, 2010) establishes some helpful reference points based some regional varieties of CE (mean F2 of /auT/ in Southern Ontario is 1770 Hz[55] (2010: 204-205)). In addition, Rouaud (2019: 230) qualifies a F2 mean difference of 72 Hz as too small to determine fronting of /auT/ in relation to /au/. Taking this comment into account, in this study, a difference greater than 100 Hz, either positive or negative[56], indicates that there is fronting in a context in relation to another context.

CR is a phenomenon which occurs in the diphthongs in the MOUTH and PRICE lexical sets. However, this does not mean that one should assume a priori that it applies in the same way to each of these phonemes. To determine whether both diphthongs behave similarly or not,

[55] This is the more recent value (2010); in 2008, it was 1747 Hz.
[56] When the difference is positive it means the environment which is expected to be fronted, is actually fronted; when the difference is negative it indicates that the fronted environment is the one that was not expected to be fronted.

a Pearson correlation coefficient[57] was calculated. This statistical procedure allows me to determine whether the degree of raising observed in the PRICE vowel (F1 distance between /ai/ and /aiT/) is correlated with the degree of raising observed in the MOUTH vowel (F1 difference between /au/ and /auT/). A significant positive correlation will indicate that speakers treat the diphthongs similarly with respect to raising. The result of the analysis shows that the p-value is not statistically significant (p=0.758) and the correlation coefficient is very small (r=-0.087), thus suggesting that there is no correlation in terms of degree of raising between the two diphthongs. It can therefore be concluded that raising does not apply in the same way to PRICE and to MOUTH, and that the diphthongs need to be analysed separately in this study, as in Boberg (2008:138) and Sadlier-Brown (2012: 536).

In order to examine more closely this definition of raising formulated in acoustic terms, I present individual scatterplots to visually observe the patterns of these diphthongs for each speaker and to establish preliminary observations on raising and fronting.

8.1 Unnormalised means for individual speakers

The following scatterplots provide non-normalised mean formant values for the PRICE and MOUTH vowels and their allophones. The individual scatterplots are grouped by gender (female speakers first), and within each gender group they are classified by age (with younger speakers first), and in an ascending order according to the HII group (group 1 to group 3, from the speakers the least engaged to those most engaged in hockey). Information about the age and gender of the speakers as well as the HII score is provided in the legend of each scatterplot.

[57] The correlation coefficient (r) ranges from -1 to 1. To be significant the p-value should be lower than 0.05. The r-value indicates at the same time the strength of the correlation. If r is greater than 0.5 the correlation strength is strong, if it is between 0.25 and 0.5 it is considered moderate, and it is perceived as weak if it is lower than 0.25. The correlation sign indicates the direction of the correlation. When it is negative, it means that the value of one variable increases when the other decreases, whereas a positive value means the two variables increase in the same direction.

Younger female speakers (under 40)

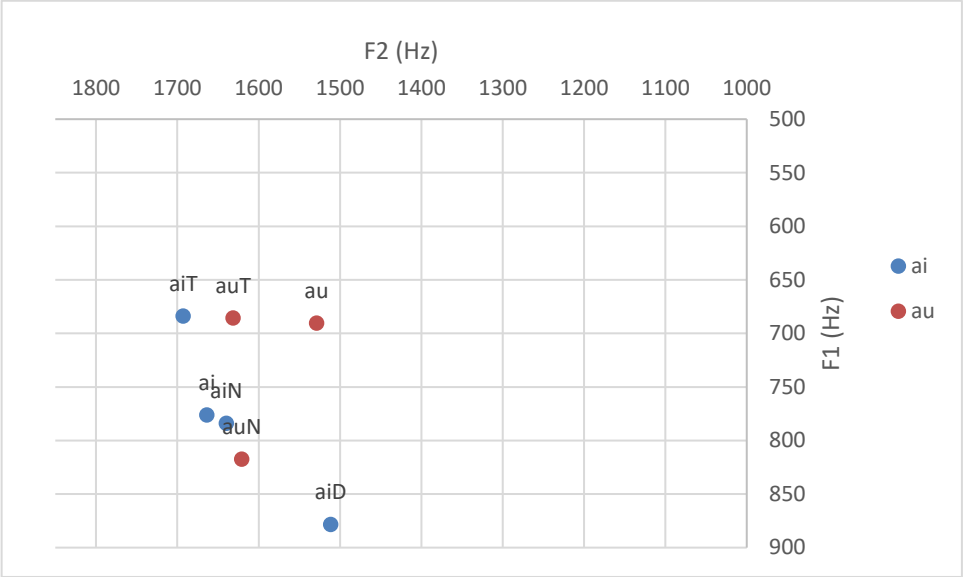

Figure 8.1: Raw F1 and F2 means by vowel produced by AF1, a younger female speaker aged 24, HII score of 8 (group 2).

Figure 8.1 shows, for AF1's PRICE vowel, a difference of 92.40 Hz between the F1 of /ai/ and the F1 of /aiT/, with the diphthong in this latter context being higher in the vowel space with a lower F1. This result indicates that CR is present in the expected /aiT/ environment. For the /aiN/ context, on the other hand, this speaker's F1 is almost equal to that of /ai/, whereas /aiD/ is lower than /ai/. As regards the MOUTH vowel, this speaker's mean F1 for /auT/ is approximately equal to that of /au/, a result that indicates a lack of raising, while /auN/ is lower than /au/. As for the F2 dimension, AF1's second formant for /auT/ is 102.65 Hz higher than for /au/, thus indicating fronting of /auT/ in relation to /au/. In other contexts of PRICE and MOUTH, there is no fronting.

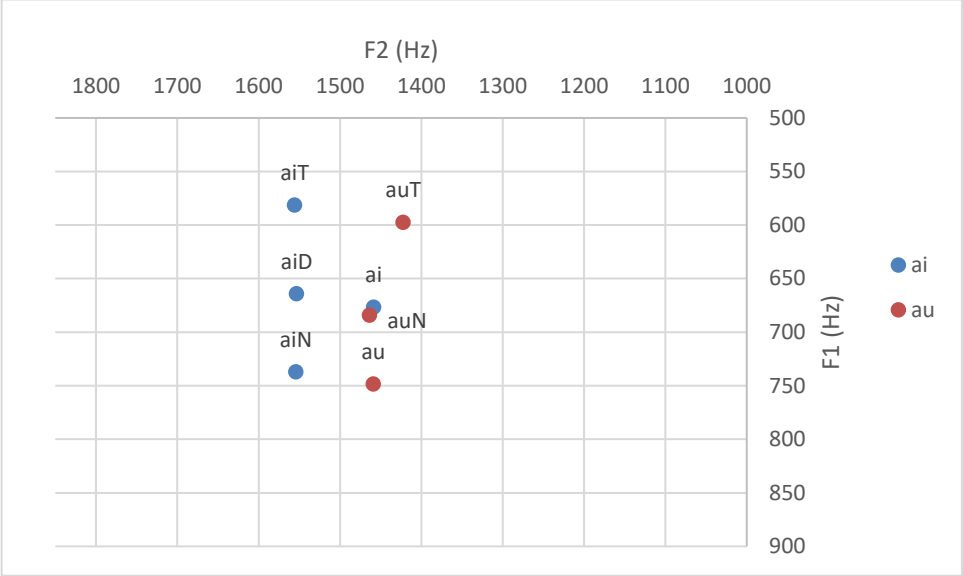

Figure 8.2: Raw F1 and F2 means by vowel produced by HS1, a younger female speaker aged 22, HII score of 9 (group 2).

In Figure 8.2, it can be observed that, for the PRICE vowel, HS1s F1 of /aiT/ is 95.25 Hz lower than the F1 of /ai/, thus indicating that HS1 raises the nucleus of this diphthong in the expected environment. The /aiD/ and /aiN/ contexts do not show a lower F1 than /ai/. For HS1's MOUTH vowel, the 150.90 Hz difference between F1 of /auT/ and F1 of /au/ is a clear indication of raising, again in the expected context, while the F1 of /auN/ is only 64.07 Hz lower than /au/, a difference that exceeds the raising threshold. On the F2 dimension, the data for HS1 show no F2 mean differences that exceed the threshold for fronting of PRICE and MOUTH vowels.

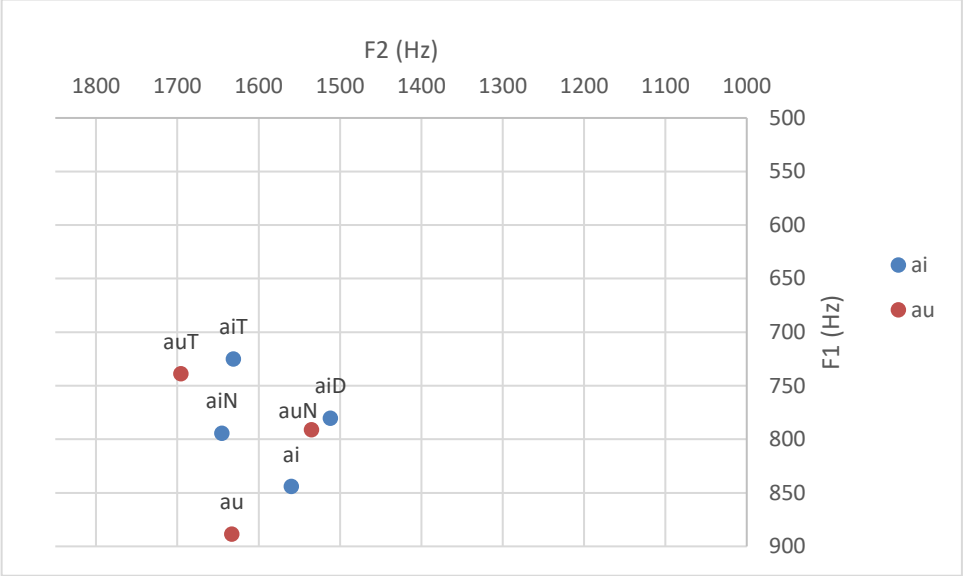

Figure 8.3: Raw F1 and F2 means by vowel produced by LS1, a younger female speaker aged 22, HII score of 16 (group 3).

As can be seen in Figure 8.3, LS1's mean F1 for /aiT/ is 119.15 Hz lower than her F1 for /ai/, thus clearly indicating raising in this expected context for the PRICE vowel. For /aiN/ and /aiD/, differences in the same direction in relation to /au/ can be observed (/aiN/: 49.50 Hz; /aiD/: 63.83 Hz), but these differences do not exceed the raising benchmark. Thus, there is no raising in these contexts. For the MOUTH vowel, I find a difference of 149.57 Hz, between the F1 of /auT/ and the F1 of /au/, a clear indication that LS1 raises this diphthong in this environment where raising is expected. Similarly, F1 of /auN/ is 97.20 Hz lower than F1 of /au/, showing raising in this context as well. On the F2 dimension, LS1 does not exhibit fronting, and this is true in all of the contexts examined.

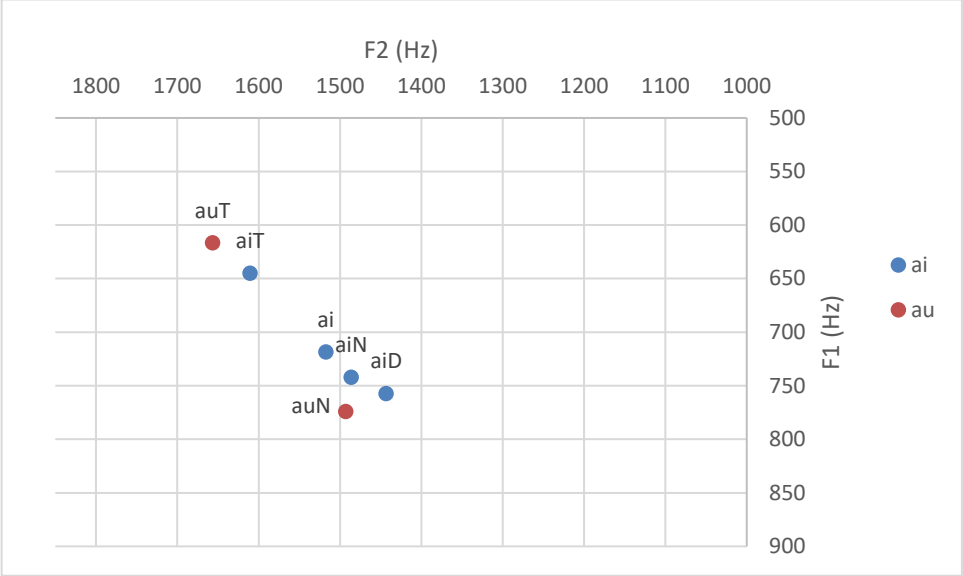

Figure 8.4: Raw F1 and F2 means by vowel produced by NR1, a younger female speaker aged 24, HII score of 16 (group 3).

Figure 8.4 shows that NR1 realises /ai/ lower and /aiT/ higher in the vowel space. The F1 difference between these contexts is 73.40 Hz, thus indicating raising in the expected context preceding a voiceless consonant. In /aiN/ and /aiD/ contexts, the diphthong is realised lower than /ai/ in the vowel space which suggests that there is no raising in these environments. For the MOUTH diphthong, since NR1 does not have tokens in the /au/ environment, no raising or fronting can be observed in her data. There is no noticeable fronting between /aiN/ and /aiD/ in relation to /ai/ since /aiN/ and /aiD/ have lower F2 values than /ai/. On the F2 dimension, NR1's data show no F2 mean differences in relation to /ai/ or /au/ that exceed the fronting benchmark, so she does not front these vowels.

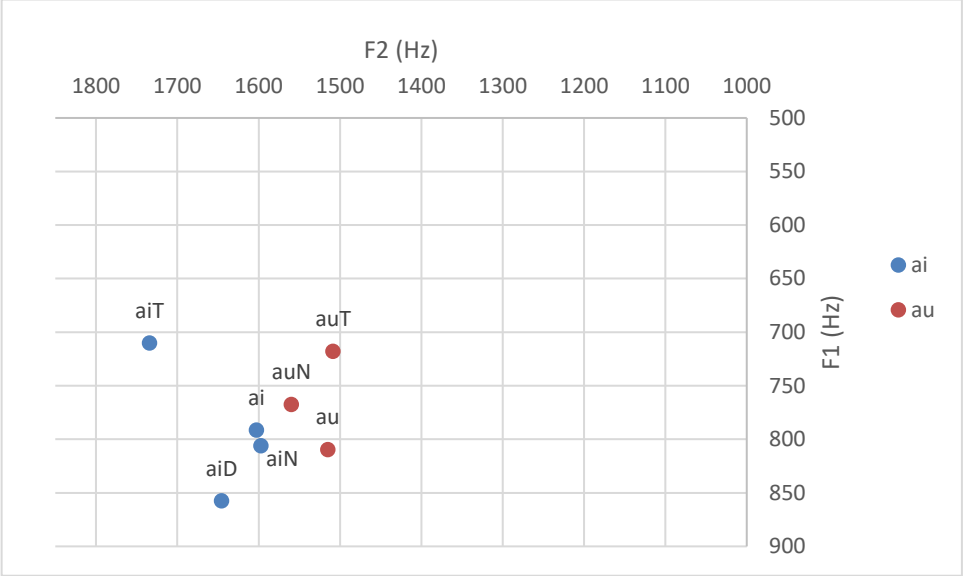

Figure 8.5: Raw F1 and F2 means by vowel produced by RS1, a younger female speaker aged 23, HII score of 17 (group 3).

In the data presented in Figure 8. 5, it can be seen that for RS1, /aiT/ displays a lower F1 value than /ai/, thus indicating raising in the expected context (F1 mean difference 81.30 Hz). On the other hand, /aiN/ and /aiD/ have higher F1 values than /ai/ and consequently there is no raising in these contexts for RS1. For the MOUTH diphthong, RS1 exhibits a 91.67 Hz F1 mean difference between /au/ and /auT/, thus indicating raising in this context. /auN/ is higher in the vowel space in comparison to /au/ but the difference between these environments (42.13 Hz) does not exceed the raising benchmark of 60 Hz (42.13 Hz), thus suggesting a lack of raising in this environment. On the F2 dimension, there is not much difference between /auT/ and /auN/ in relation to /au/ and consequently there is no fronting in these contexts in RS1's data. For the PRICE diphthong, /aiT/ has higher F2 values than /ai/ (131.59 Hz difference), thus suggesting fronting (131.59 Hz).

Older female speakers (over 40)

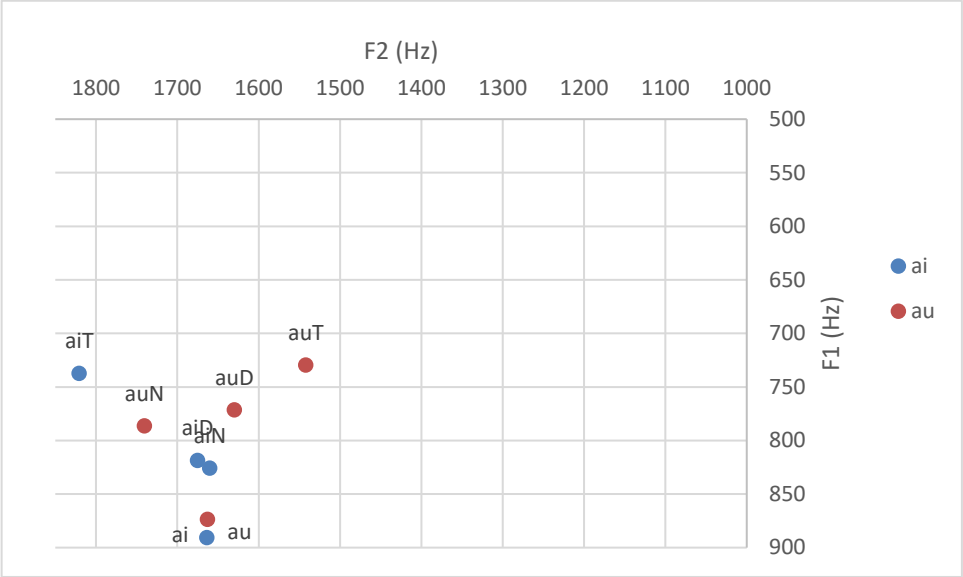

Figure 8.6: Raw F1 and F2 means by vowel produced by KB1, an older female speaker aged 62, HII score of 3 (group 1).

Figure 8.6 shows that KB1 realises /aiT/ with an F1 value that is 153.46 Hz lower than the F1 for /ai/, a clear indication of raising in this environment. Similarly, F1 values for /aiN/ and /aiD/ are respectively 65.04 Hz and 72.16 Hz lower than the F1 of /ai/, thus suggesting raising in these environments as well. For the MOUTH diphthong, KB1 realises /au/ low in the vowel space while /auT/ is high in the vowel space. The F1 mean difference between these contexts is 144.12 Hz, which exceeds the 60 Hz benchmark and thus indicates raising. In the same way, the difference in F1 between /au/ and /auN/ (72.16 Hz) and /au/ and /auD/ (102 Hz) indicates raising in these environments in KB1's pronunciation. As regards fronting, /aiT/ is fronted as illustrated by the F2 mean difference of 156.79 Hz between /ai/ and /aiT/. In other contexts of PRICE and MOUTH, she exhibits approximately the same F2 value and thus does not exhibit fronting.

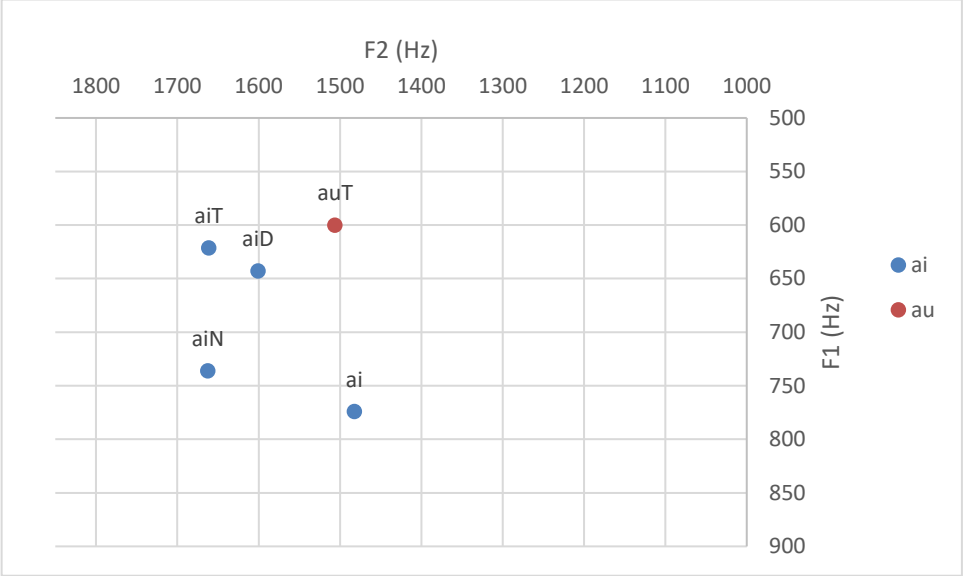

Figure 8.7: Raw F1 and F2 means by vowel produced by SP1, an older female speaker aged 60, HII score of 4 (group 1).

Figure 8.7 shows that for PRICE, /aiT/ and /aiD/ both have lower F1 values than /ai/, with differences of 152.87 Hz and 131.25 Hz respectively, thus exceeding the 60 Hz benchmark and indicating raising in these contexts. On the other hand, /aiN/ is certainly higher in the vowel space than /ai/ but the F1 difference between these two contexts (38.07 Hz) does not exceed the raising benchmark. SP1 only has /auT/ for the MOUTH diphthong and does not have any of the other MOUTH contexts, so no conclusions can be drawn on her raising and fronting of this diphthong. On the F2 dimension, all contexts appear to be fronted in relation to /ai/, with the following F2 mean differences: /ai-aiT/ (179.04 Hz), /ai-aiN/ (180.11 Hz) and /ai-aiD/ (118.42 Hz).

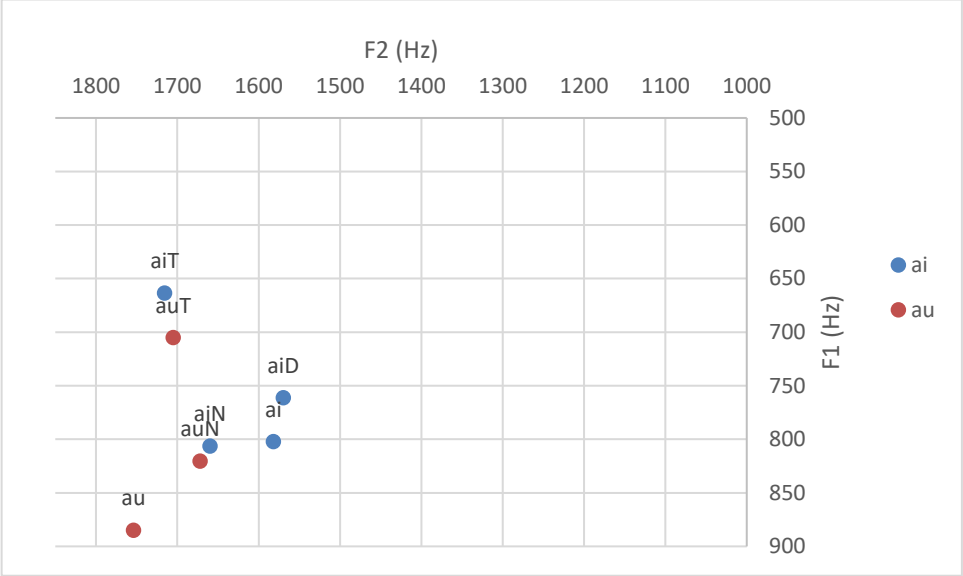

Figure 8.8: Raw F1 and F2 means by vowel produced by LS2, an older female speaker aged 62, HII score of 5 (group 1).

Figure 8.8 shows that LS2 realises /aiT/ high in the vowel space while she realises /ai/ low in the vowel space, with a mean difference in F1 of between /ai/ and /aiT/ of 136.61 Hz, which exceeds the raising benchmark. LS2 thus raises in the voiceless environment of PRICE. On the other hand, /aiN/ and /ai/ have approximately the same F2 value (-4.38 Hz difference) and therefore there is no raising in the nasal context, and in the voiced context, RS1 realises the F1 of /aiD/ 40.89 Hz lower than /ai/ but this mean difference does not exceed the raising benchmark. For the MOUTH diphthong, LS2 does not have any tokens in the voiced context, but she realises /auT/ and /auN/ higher in the vowel space than /au/, with mean differences in F1 of 179.80 Hz and 64.50 Hz respectively, thus suggesting raising in these environments, but to a lesser extent in this latter context. On the F2 dimension, LS2 exhibits a mean difference of 133.72 Hz between /ai/ and /aiT/, indicating fronting in the pre-voiceless environments of PRICE, since the difference exceeds the fronting benchmark. However, in other environments no fronting can be noted.

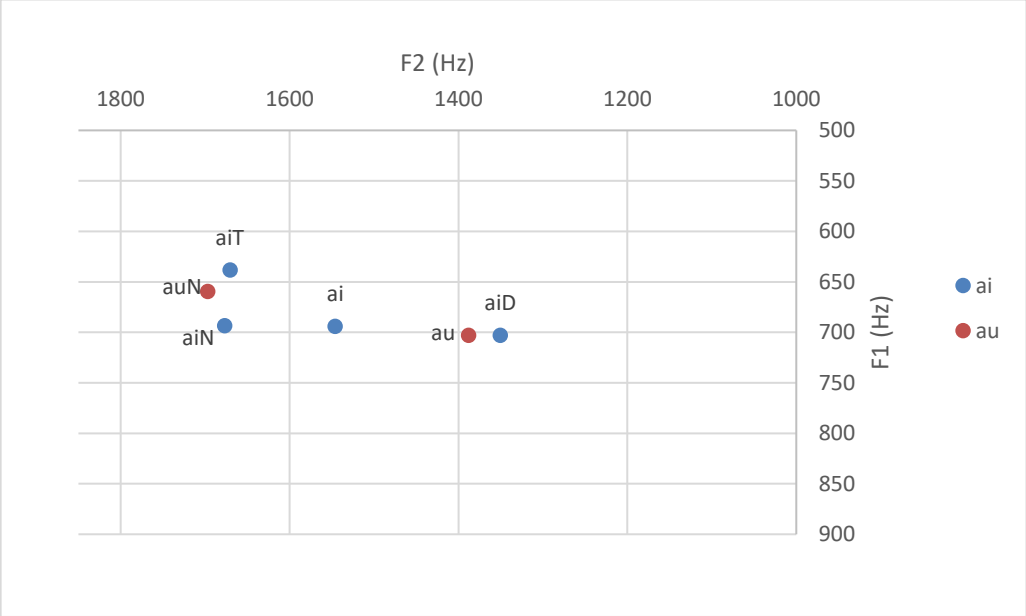

Figure 8.9: Raw F1 and F2 means by vowel produced by KG1, an older female speaker aged 60, HII score of 15 (group 3).

Figure 8.9 evidences that /aiT/ is higher and /ai/ is lower in the vowel space in the speech of KG1, but the F1 difference (56.06 Hz) between the two contexts does not exceed the 60 Hz benchmark, thus indicating a lack of raising in the expected voiceless environment. It is interesting to note that KG1 is the only speaker who does not raise /aiT/. Similarly, /aiN/ and /aiD/ are realised at approximately the same height as /ai/ which indicates there is no raising in these environments either. There are no tokens of /auT/ or /auD/ in KG1's sample. /auN/ is the only environment which does not exhibit an F1 difference of more than 60 Hz in relation to /au/, so there is no raising in this context (F1 mean difference 43.25 Hz). On the F2 dimension, /auN/ has an F2 value that is 309 Hz higher than /au/, thus indicating fronting. For the PRICE diphthong, KG1 realises /aiT/ and /aiN/ fronted in relation to /ai/ (differences in F2 values of 124.50 Hz and 130.80 Hz respectively) whereas /aiD/ has lower F2 values than /ai/, thus suggesting fronting in voiceless and nasal contexts, but not in voiced contexts.

Younger male speakers (under 40)

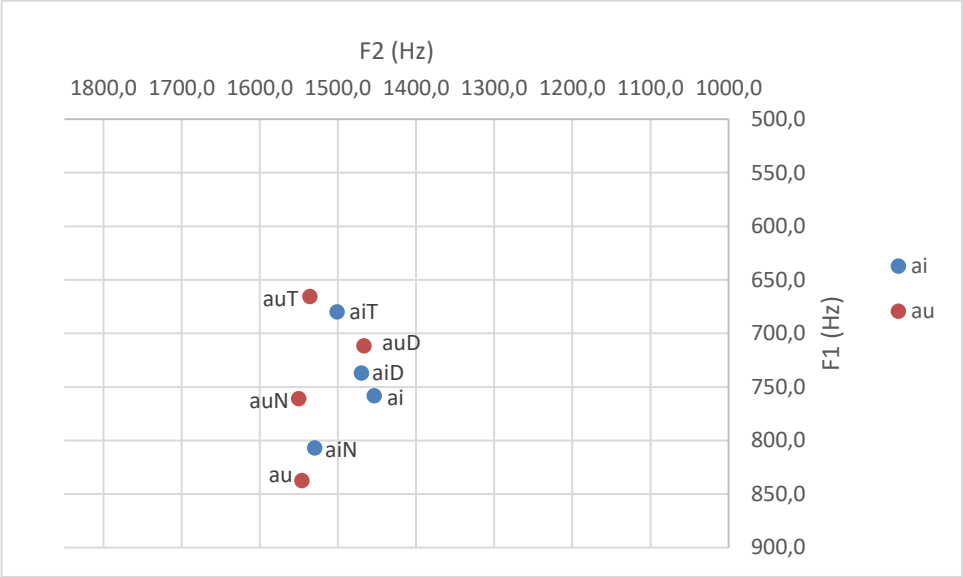

Figure 8.10: Raw F1 and F2 means by vowel produced by JL1, a younger male speaker aged 34, HII score of 4 (group 1).

In Figure 8.10, it can be highlighted that JL1 shows a difference of 78.34 Hz between the F1 of /ai/ and the F1 of /aiT/, so there is raising in the voiceless environment of PRICE, whereas /aiN/ is lower in the vowel space than /ai/, suggesting there is no raising in this context. /ai/ and /aiD/ have approximately the same height (F1 mean difference 21.26 Hz) and consequently there is no raising in the voiced context for PRICE either. JL1 realises /auT/ with a lower F1 than /au/ (F1 mean difference of 171.88 Hz) which indicates raising in the expected environment of voiceless consonants. Figure 8.10 also shows that both /auN/ and /auD/ exhibit a F1 mean difference exceeding the raising benchmark (76. 43 Hz and 125.88 Hz). JL1's data suggest raising in all environments of MOUTH. On the F2 dimension, the F2 differences between contexts never exceed the 100 Hz fronting benchmark, so JL1 does not exhibit fronting of the nuclei of these diphthongs.

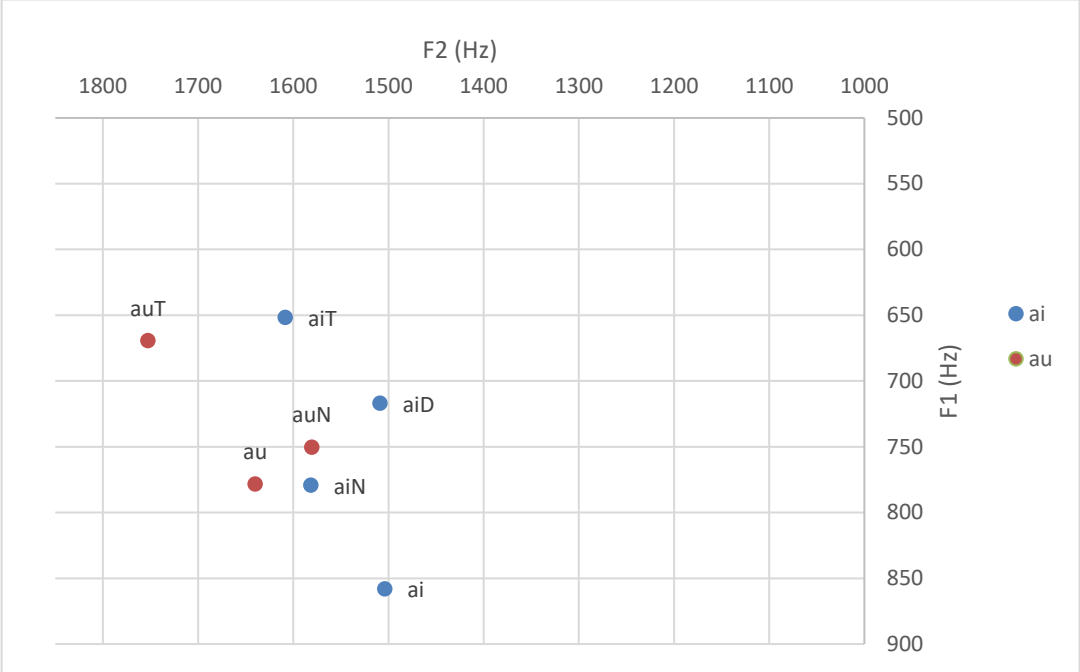

Figure 8.11: Raw F1 and F2 means by vowel produced by AS1, a younger male speaker aged 27, HII score of 12 (group 3).

Figure 8.11 shows evidence of raising between /ai/ and /aiT/ since the F1 difference of 206.42 Hz between these environments exceeds the 60 Hz benchmark. For /aiN/ and /aiD/, differences in the same direction in relation to /ai/ can be observed, (78.88 Hz and 141.25 Hz respectively), suggesting raising in these contexts as well. For the MOUTH diphthong, /au/ is lower in the vowel space than /auT/ for which the F1 value is 108.83 Hz lower, so there is raising in this expected raising environment. On the other hand, the difference in F1 between /au/ and /auN/ (27.83 Hz) is less than 60 Hz and thus there is no raising in the nasal environment of MOUTH. AS1 has no tokens of /auD/. On the F2 dimension, /ai/ and /aiD/ have approximately equal F2 values, so there is no fronting in voiced environments. Similarly, there is no fronting in /aiN/. However, /aiT/ is fronted in relation to /ai/ with a mean difference in F2 values of 104.45 Hz, which exceeds the fronting benchmark. For MOUTH, /auT/ has a higher F2 value than /au/, suggesting fronting, which is confirmed by the 112.58 Hz mean difference, while /auN/ has a lower F2 value than /au/, so there is no fronting in nasal contexts of MOUTH.

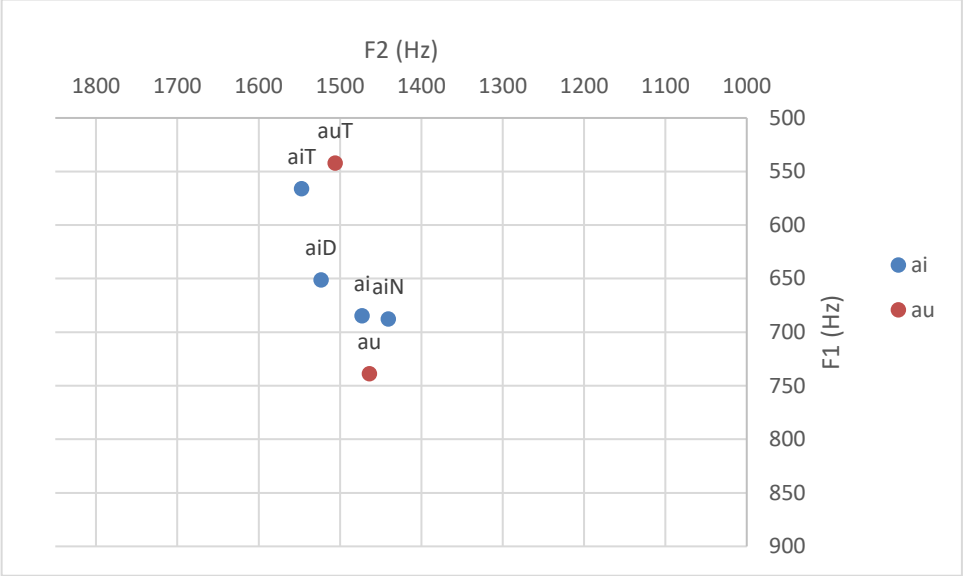

Figure 8.12: Raw F1 and F2 means by vowel produced by CG1, a younger male speaker aged 31, HII score of 13 (group 3).

Looking at the data for CG1 in Figure 8.12, it can be seen that /aiT/ is higher than /ai/ in the vowel space and the F1 difference of 118.66 Hz between these contexts exceeds the raising benchmark, which confirms raising in the expected context of PRICE. On the other hand, /aiN/ and /ai/ have almost equal F1 values (mean difference –3.13 Hz) and therefore there is no raising. /aiD/ is slightly higher than /ai/ in the vowel space but the difference in F1 values of 33.50 Hz does not exceed the 60 Hz benchmark, so there is no raising in voiced context of PRICE. For the MOUTH diphthong, /au/ is low and /auT/ is high in the vowel space, and the mean difference in F2 values of 196.88 Hz indicates raising in this context. CG1 does not have other MOUTH contexts. On the F2 dimension, the fronting benchmark is not reached in any contexts by CG1, so there is no fronting of these diphthongs in his speech.

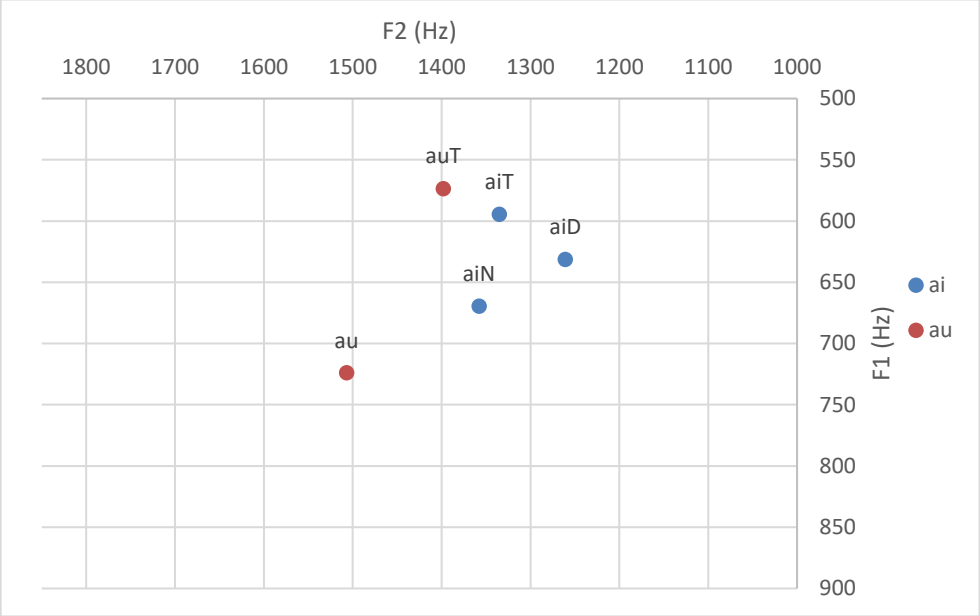

Figure 8.13: Raw F1 and F2 means by vowel produced by WW1, a younger male speaker aged 39, HII score of 15 (group 3).

Figure 8.13 shows that WW1 does not have any tokens of /ai/. Thus, it is impossible to draw conclusions on raising or fronting for the PRICE diphthong. For the MOUTH diphthong, the F1 mean difference between /au/ and /auT/ is 150.40 Hz, so there is raising in the expected environment of MOUTH. WW1 has no realisations of MOUTH in other contexts. On the F2 dimension, /auT/ has a lower F2 value than /au/ so there is a lack of fronting in this environment (mean difference of -108.90 Hz).

Older male speakers (over 40)

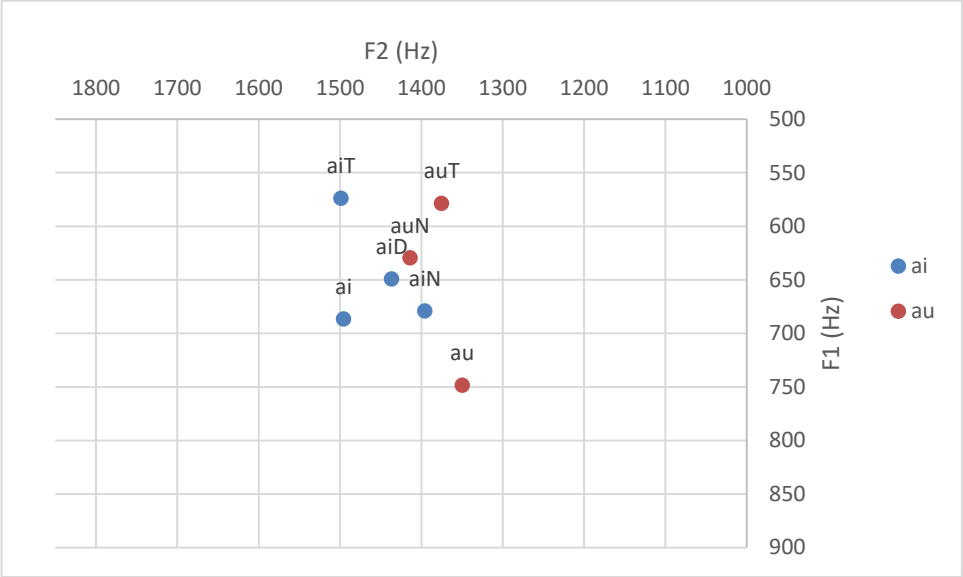

Figure 8.14: Raw F1 and F2 means by vowel produced by AV1, an older male speaker aged 59, HII score of 1 (group 1).

In Figure 8.14, it can be observed that AV1 exhibits a F1 mean difference of 112.79 Hz between /ai/ and /aiT/ which exceeds the 60 Hz benchmark and indicates raising of /aiT/. On the other hand, /aiN/ and /aiD/ do not show a F1 mean difference which exceeds the raising benchmark, even if they are realised higher in the vowel space than /ai/. Thus, Figure 8.14 shows that there is no raising in these environments of PRICE (F1 mean difference /ai-aiN/ 7.54 Hz and /ai-aiD/ 37.40 Hz). For the MOUTH diphthong, the F1 of /auT/ is 169.75 Hz lower than the F1 of /au/, thus indicating that AV1 raises the nucleus of the diphthong of MOUTH in the expected voiceless environment. Similarly, the F1 mean difference between /au-auN/ is 119 Hz, which also indicates raising in the nasal environment of MOUTH. AV1 has no occurrences of MOUTH in the voiced context. On the F2 dimension, /aiD/ and /aiN/ exhibit lower F2 values than /ai/, which show a lack of fronting in these contexts. As the mean F2 of /aiT/ shows approximately the same advancement as /ai/ indicates that there is no fronting in any of the PRICE environments in the speech of AV1. For the MOUTH diphthong, there is no fronting in either of the environments examined.

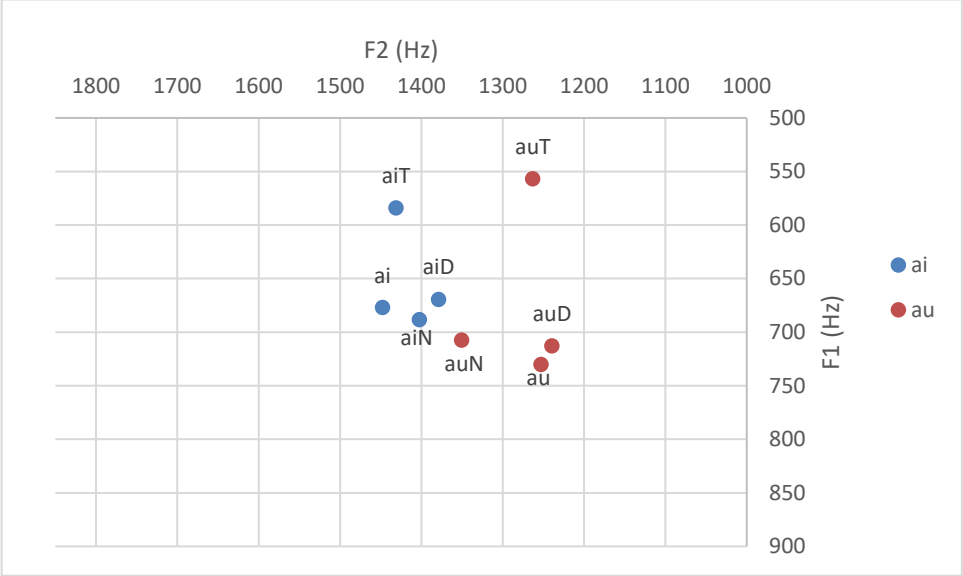

Figure 8.15: Raw F1 and F2 means by vowel produced by SH1, an older male speaker aged 67 HII score of 1 (group 1).

In Figure 8.15, it can be observed that SH1 realises /aiT/ higher than /ai/ in the vowel space and the F1 mean difference (92.96 Hz) exceeds the raising benchmark, thus indicating that SH1 raises the PRICE diphthong in the expected context. On the other hand, F1 values for /aiD/ and /aiN/ differ little from that of /ai/ (differences of 7.62 Hz and -11.22 Hz respectively) so there is no raising in these contexts. A difference of 173.56 Hz between the F1 of /au/ and the F1 of /auT/ suggests raising in this expected context. However, mean F1 values for /auN/ and /auD/ are almost equal to the mean F1 of /au/ (respective F1 mean differences: 22.73 Hz, 17.33 Hz), so there is no raising of MOUTH in these environments. On the F2 dimension, in SH1's speech, /ai/ and /aiT/ have approximately equal F2 values and /aiD/ and /aiN/ have lower F2 values than /ai/, thus indicating a lack of fronting for PRICE. Similarly, SH1's second formants for /au/, /auD/ and /auT/ are almost equal and /auN/ is the only context that appears fronted in relation to /au/ but the difference in F2 values does not exceed the fronting benchmark of 100 Hz.

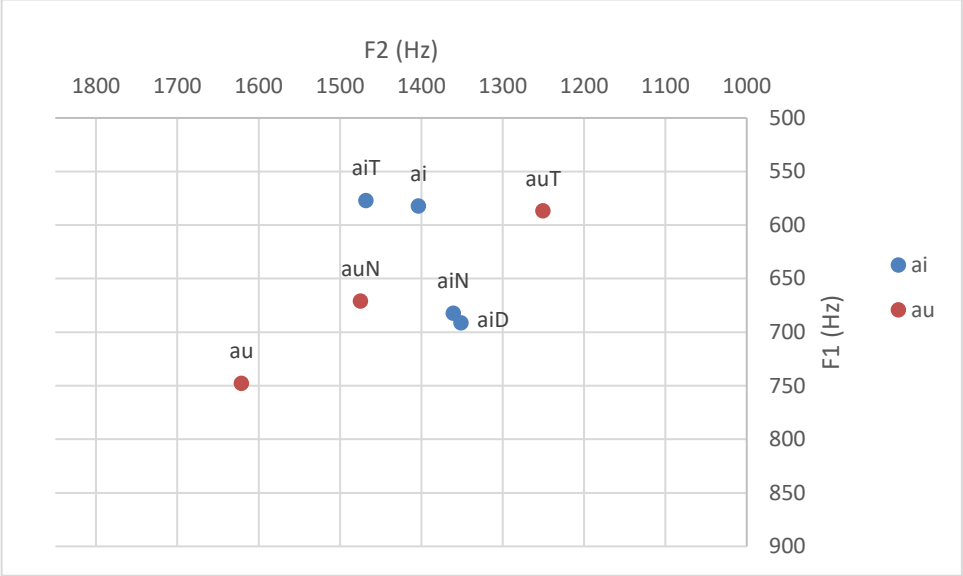

Figure 8.16: Raw F1 and F2 means by vowel produced by WG1, an older male speaker aged 61, HII score of 3 (group 1).

Figure 8.16 shows that /ai/ and /aiT/ are realised at the same height (F1 values of 582.3 Hz and 577.2 Hz) and both /aiN/ and /aiD/ are lower in the vowel space than /ai/, thus indicating a lack raising of PRICE for WG1. On the other hand, the F1 mean difference of 161.09 Hz between /au/ and /auT/ exceeds the 60 Hz benchmark and indicates raising in this expected context. Similarly, /auN/ has a lower F1 value than /au/ and exhibits a F1 mean difference of 76.86 Hz, so there is raising in this context. On the F2 dimension, there is a lack of fronting of both PRICE and MOUTH diphthongs for WG1.

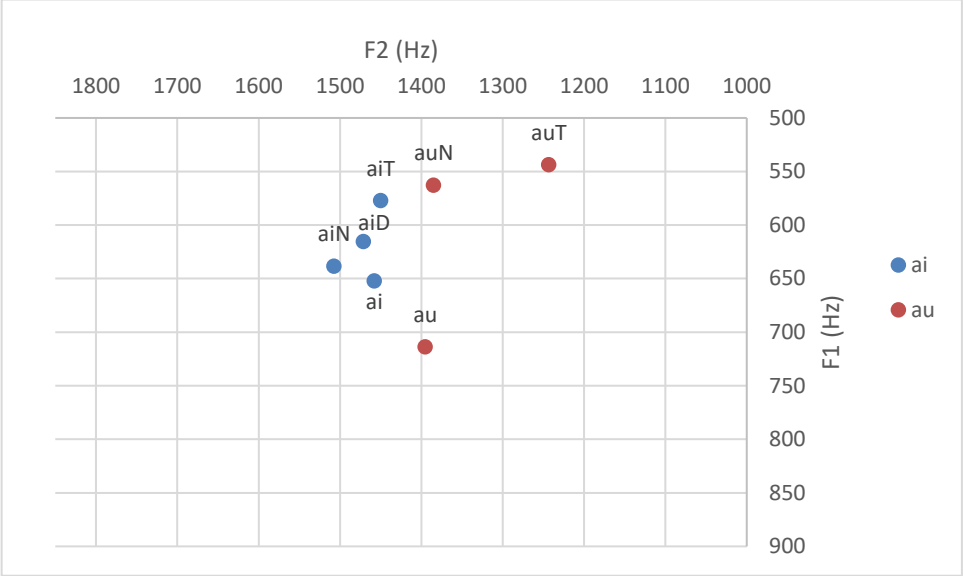

Figure 8.17: Raw F1 and F2 means by vowel produced by TM1, an older male speaker aged 64, HII score of 7 (group 2).

Figure 8.17 shows that /ai/ is lower than /aiT/ in the vowel space, and the F1 mean difference between these contexts /ai-aiT/ is 74.92 Hz, thus confirming raising in the voiceless environment of PRICE. /aiD/ and /aiN/ are realised close to /ai/ on the F1 dimension with only slight differences in mean F1 (respectively 36.62 Hz and 13.83 Hz) in relation to /ai/, so there is no raising in these environments. For the MOUTH diphthong, /au/ is low and /auT/ is high in the vowel space. The F1 mean difference between /au-auT/ is 170.08 Hz indicating raising of MOUTH in voiceless contexts. Moreover, /auN/ is higher in the vowel space than /au/; the difference in F1 values of 150.93 Hz between /au/ and /auN/ exceeds 60 Hz. Thus, /auN/ is raised by TM1. TM1 has no tokens of /auD/. On the F2 dimension, all contexts of PRICE exhibit approximately equal F2 values, so no noticeable differences can be observed regarding fronting. Similarly, for the MOUTH diphthong /au/ and /auN/ have equal F2 values, and /auT/ has a lower mean F2 value than /au/, thus suggesting a lack of fronting in this context.

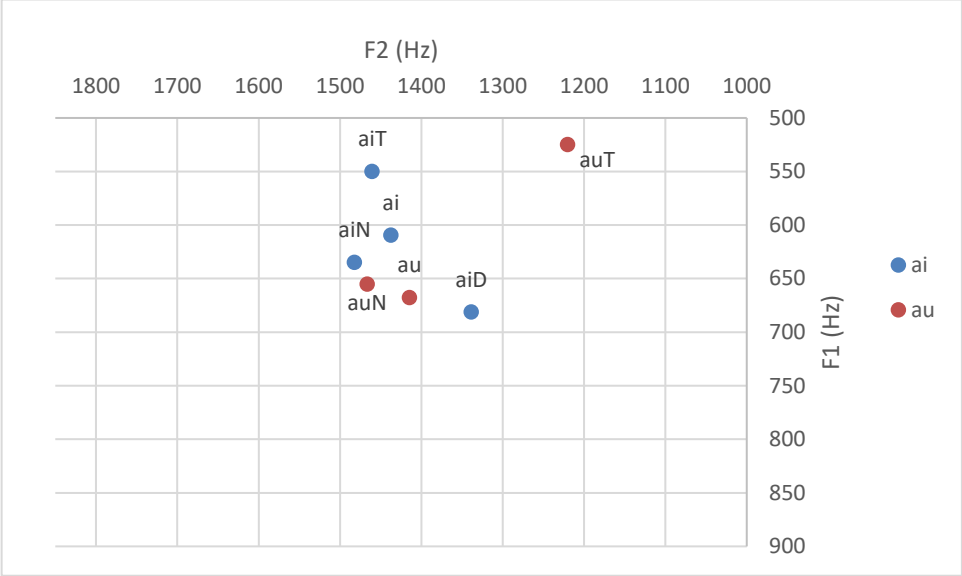

Figure 8.18: Raw F1 and F2 means by vowel produced by KE1, an older male speaker aged 68, HII score of 10 (group 2).

Figure 8.18 shows that, while /au/ and /auT/ exhibit a mean F1 difference of 142.84 Hz indicating raising in the voiceless environment, /auN/ is at the same height as /au/ and therefore does not exhibit raising. KE1 has no tokens of /auD/. For the PRICE diphthong, the mean F1 difference between /ai/ and /aiT/ (59.50 Hz) almost reaches the 60 Hz benchmark, so there is no raising in the voiceless environment for PRICE. Both /aiD/ and /aiN have higher F1 values than /ai/, suggesting there is no raising in these contexts (F1 mean differences; -71.75 Hz, -25.32 Hz). On the F2 dimension, /aiD/ has a lower F2 value than /ai/, so there is no fronting in this context. Figure 8.18 shows that small mean F2 differences between /ai/ and /aiT/ (23.18 Hz) and between /ai/ and /aiN/ (44 Hz) do not exceed the fronting benchmark. Similarly, /auT/ has a lower F2 value than /au/ and /auN/ is relatively close to /au/ on the F2 dimension, indicating that there is no fronting of MOUTH for this speaker in these contexts.

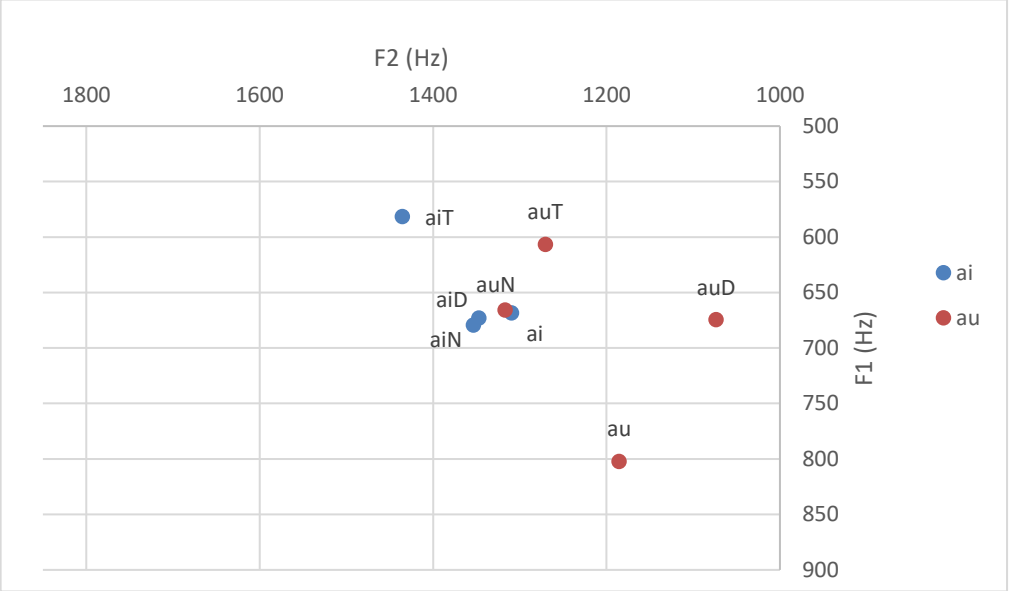

Figure 8.19: Raw F1 and F2 means by vowel produced by MC1, an older male speaker aged 46, HII score of 14 (group 3).

Observation of Figure 8.19 shows that MC1 realises /aiD/ and /aiN/ at almost the same height as /ai/ (mean F1 differences –4.54 Hz, –10.90 Hz), thus indicating a lack of raising in these contexts. On the other hand, the F1 of /aiT/ is 86.88 Hz lower than /ai/, a clear indication of raising of PRICE in this environment. For the MOUTH diphthong, /au/ is low in the vowel space and /auT/ is high in the vowel space; thus, the F1 mean difference between these contexts (195.58 Hz) exceeds the raising benchmark. Variation in the same direction is noticed for /auN/ and /auD/ in relation to /au/ with F1 mean differences of 136.25 Hz and 127.58 Hz respectively, which exceed the raising benchmark. On the F2 dimension, all PRICE contexts are fronted in relation to /ai/ (higher F2 values) but /aiT/ is the only context with a F2 difference (125.98 Hz) that exceeds the fronting benchmark, suggesting it is the only context of PRICE in which fronting occurs. For the MOUTH diphthong, /auD/ has a lower F2 value than /au/ so there is no fronting in the voiced context. /auT/ is not fronted in relation to /au/, since the mean F2 difference does not exceed the fronting benchmark. The only MOUTH environment which exhibits F2 values higher than /au/ is /auN/ which shows F2 mean difference (131.25 Hz) that exceeds the fronting benchmark.

Observations of the individual scatterplots have shown that there is individual variation with respect to CR in terms of which diphthongs are raised or fronted and in which phonological environments raising occurs. However, in general, CR is present to varying degrees in the speech of most speakers.

To confirm these observations, degree of raising using unnormalised values (in Hz) of F1 was calculated to examine raising more closely and to determine whether speakers are raisers

or not. For this calculation, the mean value of tokens in which raising may be expected (/aiT/, /aiD/, /aiN/) is subtracted from the corresponding mean value of tokens in which raising is not expected (/ai/ in open syllables) to calculate the degree of raising. The results of these calculations are displayed in tables which show, first for the PRICE diphthong and then for the MOUTH diphthong, a distinction among several degrees of raising: 60-109 Hz difference, 60-85 Hz difference, more than 85 Hz difference, more than 110 Hz difference, and more than 140 Hz difference.

Similar calculations were performed on unnormalised values of F2 to examine individual speakers' degree of fronting. For these calculations, a difference of more than 100 Hz, either positive or negative, indicates fronting.

Degree of raising of the PRICE diphthong

Speaker	Mean F1 /ai/ (Hz)	Mean F1 /aiT/ (Hz)	Distance F1 /ai-aiT/ (Hz)	Degree of raising (Hz)	Raiser
AF1	776,2	683,8	92,40	60-109	1
AS1	858,3	651,8	206,42	more than 110	1
AV1	686,5	573,7	112,79	more than 110	1
CG1	684,8	566,1	118,66	more than 110	1
HS1	676,7	581,4	95,24	60-109	1
JL1	758,2	679,9	78,34	60-109	1
KB1	890,8	737,3	153,46	more than 110	1
KE1	609,5	550,0	59,50	no raising	0
KG1	694,3	638,3	56,06	no raising	0
LS1	844,3	725,1	119,15	more than 110	1
LS2	802,2	663,6	138,61	more than 110	1
MC1	668,6	581,7	86,88	60-109	1
NR1	718,6	645,2	73,40	60-109	1
RS1	791,7	710,4	81,30	60-109	1
SH1	677,2	584,2	92,96	60-109	1
SP1	774,3	621,4	152,87	more than 110	1
TM1	652,2	577,3	74,92	60-109	1
WG1	582,3	577,2	5,18	no raising	0
WW1	NA	594,5	NA	NA	NA

Table 8.1: Degree of raising between F1 values in the diphthong pair /ai-aiT/.

Table 8.1 shows that 15 out of 18 speakers raise /aiT/, eight speakers reach the 60 Hz benchmark (Labov et al. 2006), and seven reach the 110 Hz benchmark (Boberg 2008). In addition, two speakers distinguish themselves for their high degree of raising: AS1 with more than 200 Hz difference and SP1 with more than 150 Hz difference. Three speakers do not raise in this environment because they do not reach the 60 Hz benchmark, two speakers are close to reaching it: KG1 (56.06 Hz) and KE1 (59.50 Hz), but WG1 is far from reaching the benchmark (5.18 Hz). A further observation of their individual scatterplots shows that WG1 raises /ai/ to a level that is almost as low as /aiT/ and it is also the case of KE1, who is, however, very close to the benchmark. KE1 is described as a "weak raiser" because he seems to raise in both

examined environments but the mean F1 difference does not exceed the raising benchmark. In addition, TM1 and MC1 exhibit a difference greater than 60-109 Hz and therefore raise /aiT/ compared to /ai/. As observation of their individual scatterplots shows that they also raise in open syllables, these two speakers are considered to be “hyper raisers”. These four speakers are older male speakers.

Speaker	Mean F1 /ai/ (Hz)	Mean F1 /aiD/ (Hz)	Distance F1 /ai-aiD/ (Hz)	Degree of raising (Hz)	Raiser
AF1	776,2	878,2	-102,02	no raising	0
AS1	858,3	717,0	141,25	more than 110	1
AV1	686,5	649,1	37,40	no raising	0
CG1	684,8	651,3	33,50	no raising	0
HS1	676,7	664,2	12,47	no raising	0
JL1	758,2	737,0	21,26	no raising	0
KB1	890,8	818,6	72,16	60-109	1
KE1	609,5	681,3	-71,75	no raising	0
KG1	694,3	703,0	-8,67	no raising	0
LS1	844,3	780,4	63,83	60-109	1
LS2	802,2	761,3	40,89	no raising	0
MC1	668,6	673,1	-4,54	no raising	0
NR1	718,6	757,4	-38,83	no raising	0
RS1	791,7	857,6	-65,96	no raising	0
SH1	677,2	669,6	7,62	no raising	0
SP1	774,3	643,0	131,25	more than 110	1
TM1	652,2	615,6	36,62	no raising	0
WG1	582,3	691,5	-109,20	no raising	0
WW1	NA	631,4	NA	NA	NA

Table 8.2: Degree of raising between F1 values in the diphthong pair /ai-aiD/.

In Table 8.2, it can be seen that in the voiced environment the nucleus of the PRICE diphthong is raised by four speakers out of 18. For the youngest male speaker (AS1) the data show a difference of more than 140 Hz between /aiD/ and /ai/ and SP1 exhibits a degree of raising represented by a difference of more than 130 Hz between these environments. Two other female speakers realise a difference of 60 to 109 Hz. Most of the speakers (N=14) do not raise in the voiced context. Moreover, four speakers exhibit negative differences of 60 Hz or higher, suggesting they raise PRICE higher in the /ai/ environment than in the voiced environment, /aiD/.

Speaker	Mean F1 /ai/ (Hz)	Mean F1 /aiN/ (Hz)	Distance F1 /ai-aiN/ (Hz)	Degree of raising (Hz)	Raiser
AF1	776,2	784,0	-7,85	no raising	0
AS1	858,3	779,4	78,88	60-109	1
AV1	686,5	679,0	7,54	no raising	0
CG1	684,8	687,9	-3,13	no raising	0
HS1	676,7	737,2	-60,56	no raising	0
JL1	758,2	806,8	-48,61	no raising	0
KB1	890,8	825,7	65,04	60-109	1
KE1	609,5	634,8	-25,32	no raising	0
KG1	694,3	693,6	0,73	no raising	0
LS1	844,3	794,5	49,80	no raising	0
LS2	802,2	806,6	-4,38	no raising	0
MC1	668,6	679,5	-10,90	no raising	0
NR1	718,6	742,4	-23,78	no raising	0
RS1	791,7	806,2	-14,50	no raising	0
SH1	677,2	688,4	-11,22	no raising	0
SP1	774,3	736,2	38,07	no raising	0
TM1	652,2	638,4	13,87	no raising	0
WG1	582,3	682,6	-100,23	no raising	0
WW1	NA	669,7	NA	NA	NA

Table 8.3: Degree of raising between F1 values in the diphthong pair /ai-aiN/.

Two speakers out of 18 raise in the nasal environment /aiN/: AS1 (78 Hz) and KB1 (65 Hz). They both reach the 60 Hz benchmark, but neither of them shows an 85 Hz difference (Boberg 2008). On the other hand, 16 speakers do not raise in pre-nasal contexts. Two speakers show a negative difference greater than 60 Hz, suggesting they raise in the /ai/ context rather than in the /aiN/ context (Table 8.3).

83.4% of the speakers raise in the voiceless environment of PRICE (N=15), while three speakers do not reach the raising benchmark. According to the acoustic definition of raising, three speakers do not raise in this context, because they do not exhibit a F1 difference of at least 60 Hz between /ai/ and /aiT/. However, KG1 is very close to reaching the benchmark (56.06 Hz). Following the acoustic definition of raising, the voiced environment PRICE is raised by 22.3% of the speakers (N=4) and four speakers exhibit a negative difference of 60 Hz or higher, thus suggesting they raise in the /ai/ environment compared to the voiced environment. Finally, 11.2% of the speakers raise in the pre-nasal context (N=2). In addition, two speakers produce /ai/ higher than /aiN/ with a difference greater than 60 Hz. AS1 and SP1 exhibit the highest degree of raising in the voiceless environment (highest F1 difference /ai-aiT/) and they also raise in the voiced context (/ai-aiD/). In fact, AS1, the youngest male speaker, raises PRICE in all environments examined. These results reveal a certain amount of individual variation with respect to PRICE raising.

Speaker	Mean F1 /au/ (Hz)	Mean F1 /auT/ (Hz)	Distance F1 /au-auT/ (Hz)	Degree of raising (Hz)	Raiser
AF1	690,50	685,70	4,80	no raising	0
AS1	778,33	669,50	108,83	60-139	1
AV1	748,33	578,58	169,75	more than 140	1
CG1	739,00	542,13	196,88	more than 140	1
HS1	748,40	597,50	150,90	more than 140	1
JL1	837,38	665,50	171,88	more than 140	1
KB1	873,50	729,38	144,12	more than 140	1
KE1	667,75	524,91	142,84	more than 140	1
KG1	703,00	NA	NA	NA	NA
LS1	888,57	739,00	149,57	more than 140	1
LS2	885,00	705,20	179,80	more than 140	1
MC1	802,25	606,67	195,58	more than 140	1
NR1	NA	616,77	NA	NA	NA
RS1	809,67	718,00	91,67	60-139	1
SH1	730,33	556,77	173,56	more than 140	1
SP1	NA	600,14	NA	NA	NA
TM1	713,73	543,65	170,08	more than 140	1
WG1	747,86	586,76	161,09	more than 140	1
WW1	724,00	573,60	150,40	more than 140	1

Table 8.4: Degree of raising between F1 values in the diphthong pair /au-auT/.

Table 8.4 indicates that out of 16 speakers, 15 raise in the voiceless context for the MOUTH lexical set: 13 speakers with a difference between raised and unraised contexts of more than 140 Hz (Boberg's (2008) benchmark), and two speakers who exhibit a mean difference ranging from 60 to 139 Hz. One speaker (AF1) does not raise in the voiceless context. In fact, AF1 is a "weak raiser" since she produces /au/ as high as /auT/, thus not reaching the 60 Hz benchmark between these two contexts. Closer examination of the data shows that KE1 is considered to be a "hyper-raiser" since KE1 is an actual raiser in the voiceless context (/auT/) and also raises /au/ and still reaches the 140 Hz benchmark difference between the two environments.

Speaker	Mean F1 /au/ (Hz)	Mean F1 /auD/ (Hz)	Distance F1 /au-auD/ (Hz)	Degree of raising (Hz)	Raiser
JL1	837,38	711,50	125,88	60-139	1
KB1	873,50	771,50	102,00	60-139	1
MC1	802,25	674,67	127,58	60-139	1
SH1	730,33	713,00	17,33	no raising	0

Table 8.5: Degree of raising between F1 values in the diphthong pair /au-auD/.

While there are not many /auD/ tokens in the sample, three speakers raise in the voiced environment with a F1 difference of at least 100 Hz. One speaker, SH1, does not raise in this context. This sample includes two male speakers and one older female speaker (see Table 8.5).

Speaker	Mean F1 /au/ (Hz)	Mean F1 /auN/ (Hz)	Distance F1 /au-auN/	Degree of raising (Hz)	Raiser
AF1	690,50	817,29	-126,79	no raising	0
AS1	778,33	750,50	27,83	no raising	0
AV1	748,33	629,33	119,00	60-85	1
CG1	739,00	NA	NA	NA	NA
HS1	748,40	684,33	64,07	60-85	1
JL1	837,38	760,95	76,43	60-85	1
KB1	873,50	786,42	87,08	60-85	1
KE1	667,75	655,20	12,55	no raising	0
KG1	703,00	659,75	43,25	no raising	0
LS1	888,57	791,38	97,20	60-85	1
LS2	885,00	820,50	64,50	60-85	1
MC1	802,25	666,00	136,25	60-85	1
NR1	NA	774,08	NA	NA	NA
RS1	809,67	767,54	42,13	no raising	0
SH1	730,33	707,60	22,73	no raising	0
SP1	NA	NA	NA	NA	NA
TM1	713,73	562,80	150,93	more than 85	1
WG1	747,86	671,00	76,86	60-85	1
WW1	724,00	NA	NA	NA	NA

Table 8.6: Degree of raising between F1 values in the diphthong pair /au-auN/.

Table 8.6 shows evidence of raising for nine speakers out of 15: five speakers exhibit a mean difference of 60 to 85 Hz between /au/ and /auN/ and four speakers exceed the 85 Hz benchmark (Boberg 2008). Among them, TM1 exhibits a difference greater than 140 Hz. Six speakers do not exhibit raising in this environment. Among these speakers, some individual variation can shed light on the results. AF1 displays a negative value of -126,79 Hz, suggesting her /au/ allophone is raised higher than her /auN/ allophone. Based on this result, she is considered to be a "hyper raiser". Similarly, KE1 is a "weak raiser" as he raises in open syllables of MOUTH as well as /auN/ and the F1 mean difference does not exceed the raising benchmark.

To sum up observations on individual variation in MOUTH raising, it can be said that, based on the acoustic definition of a raised variant, 93.75% of the speakers raise in the voiceless environment of MOUTH (N=15), and one speaker, AF1, does not raise in this context according to the raising benchmark. Although there are not many speakers who have tokens in the voiced context (/auD/), 75% of the speakers who do raise in the voiced environment with a difference in F1 of at least 100 Hz (N=3) and one speaker does not raise in this environment. 60% of the speakers raise in the pre-nasal context (N=9) and six speakers do not raise in this environment. AF1 raises /au/ higher than /auN/ as Table 8.6 gives a negative difference (-126.79 Hz). There is thus considerable individual variation in MOUTH raising in the corpus.

Speaker	Mean F2 /ai/ (Hz)	Mean F2 /aiT/ (Hz)	Distance F2 /ai-aiT/ (Hz)	Degree of fronting (Hz)	Fronter
AF1	1663,4	1692,5	29,13	no fronting	0
AS1	1504,0	1608,4	104,45	more than 100	1
AV1	1495,5	1498,9	3,38	no fronting	0
CG1	1472,8	1546,9	74,16	no fronting	0
HS1	1458,7	1555,7	97,05	no fronting	0
JL1	1453,4	1500,9	47,48	no fronting	0
KB1	1663,6	1820,4	156,79	more than 100	1
KE1	1437,3	1460,4	23,18	no fronting	0
KG1	1546,0	1670,5	124,50	more than 100	1
LS1	1559,8	1631,0	71,20	no fronting	0
LS2	1581,7	1715,4	133,78	more than 100	1
MC1	1309,4	1435,4	125,98	more than 100	1
NR1	1517,3	1610,4	93,16	no fronting	0
RS1	1602,5	1734,1	131,59	more than 100	1
SH1	1447,7	1431,1	-16,57	no fronting	0
SP1	1482,3	1661,3	179,04	more than 100	1
TM1	1457,8	1450,1	-7,78	no fronting	0
WG1	1403,3	1468,1	64,72	no fronting	0
WW1	NA	1335,3	NA	NA	NA

Table 8.7: Degree of fronting between F2 values in the diphthong pair /ai-aiT/.

Table 8.7 shows that seven speakers out of 18 front in the voiceless context (/aiT/) in relation to /ai/, and two older female speakers (SP1 and KB1) front with a difference in F2 greater than 150 Hz between these contexts. 11 speakers do not front in the voiceless context.

Speaker	Mean F2 /ai/ (Hz)	Mean F2 /aiD/ (Hz)	Distance F2 /ai-aiD/ (Hz)	Degree of fronting (Hz)	Fronter
AF1	1663,4	1511,4	-151,96	no fronting	0
AS1	1504,0	1509,0	5,00	no fronting	0
AV1	1495,5	1436,3	-59,17	no fronting	0
CG1	1472,8	1523,3	50,50	no fronting	0
HS1	1458,7	1553,2	94,53	no fronting	0
JL1	1453,4	1469,8	16,39	no fronting	0
KB1	1663,6	1675,0	11,38	no fronting	0
KE1	1437,3	1338,5	-98,75	no fronting	0
KG1	1546,0	1350,6	-195,40	no fronting	0
LS1	1559,8	1511,6	-48,17	no fronting	0
LS2	1581,7	1569,7	-12,00	no fronting	0
MC1	1309,4	1347,1	37,67	no fronting	0
NR1	1517,3	1443,2	-74,09	no fronting	0
RS1	1602,5	1645,5	43,00	no fronting	0
SH1	1447,7	1378,8	-68,87	no fronting	0
SP1	1482,3	1600,7	118,42	more than 100	1
TM1	1457,8	1471,1	13,28	no fronting	0
WG1	1403,3	1351,1	-52,22	no fronting	0
WW1	NA	1260,8	NA	NA	NA

Table 8.8: Degree of fronting between F2 values in the diphthong pair /ai-aiD/.

Observation of Table 8.8 shows that, except for one female speaker (SP1) who fronts in the voiced context (/aiD/) in relation to /ai/, none of the speakers of the corpus front in this environment (N=17). However, two speakers (AF1 and KG1) show a negative difference of 100 Hz or more, indicating that they front in open syllable in relation to a voiced context.

Speaker	Mean F2 /ai/ (Hz)	Mean F2 /aiN/ (Hz)	Distance F2 /ai-aiN/ (Hz)	Degree of fronting (Hz)	Fronter
AF1	1663,4	1639,7	-23,73	no fronting	0
AS1	1504,0	1581,5	77,54	no fronting	0
AV1	1495,5	1395,4	-100,09	no fronting	0
CG1	1472,8	1440,6	-32,13	no fronting	0
HS1	1458,7	1554,2	95,49	no fronting	0
JL1	1453,4	1529,6	76,14	no fronting	0
KB1	1663,6	1659,9	-3,74	no fronting	0
KE1	1437,3	1482,0	44,75	no fronting	0
KG1	1546,0	1676,8	130,80	more than 100	1
LS1	1559,8	1645,0	85,22	no fronting	0
LS2	1581,7	1659,7	78,07	no fronting	0
MC1	1309,4	1353,4	43,99	no fronting	0
NR1	1517,3	1486,2	-31,14	no fronting	0
RS1	1602,5	1597,3	-5,25	no fronting	0
SH1	1447,7	1402,4	-45,28	no fronting	0
SP1	1482,3	1662,4	180,11	more than 100	1
TM1	1457,8	1507,2	49,39	no fronting	0
WG1	1403,3	1360,8	-42,58	no fronting	0
WW1	NA	1358,0	NA	NA	NA

Table 8.9: Degree of fronting between F2 values in the diphthong pair /ai-aiN/.

Out of 18 speakers, two (SP1 and KG1) front in the nasal environment (/aiN/) compared to the /ai/ context, especially SP1 who exhibits a F2 difference of 180 Hz. AV1 fronts in the /ai/ context compared to /aiN/, since the difference in these environments is negative: -100.09 Hz (Table 8.9). I have shown that 38.9% of the speakers (N=7) front in the voiceless environment of PRICE while 5.6% front in the voiced context of PRICE (N=1). 11.2% of the speakers front in the nasal environment (/aiN/) (N=2).

Speaker	Mean F2 /au/ (Hz)	Mean F2 /auT/ (Hz)	Distance F2 /au-auT/ (Hz)	Degree of fronting (Hz)	Fronter
AF1	1528,8	1631,4	102,65	more than 100	1
AS1	1640,0	1752,6	112,58	more than 100	1
AV1	1349,7	1374,9	25,28	no fronting	0
CG1	1463,8	1505,8	41,95	no fronting	0
HS1	1458,9	1422,3	-36,65	no fronting	0
JL1	1545,8	1535,8	-10,01	no fronting	0
KB1	1662,8	1541,9	-120,97	no fronting	0
KE1	1414,5	1220,0	-194,50	no fronting	0
KG1	1388,0	NA	NA	NA	NA
LS1	1632,9	1695,4	62,53	no fronting	0
LS2	1753,8	1705,0	-48,75	no fronting	0
MC1	1185,5	1270,4	84,90	no fronting	0
NR1	NA	1656,5	NA	NA	NA
RS1	1515,0	1508,5	-6,50	no fronting	0
SH1	1252,7	1262,9	10,20	no fronting	0
SP1	NA	1506,0	NA	NA	NA
TM1	1395,1	1243,2	-151,94	no fronting	0
WG1	1621,0	1250,2	-370,76	no fronting	0
WW1	1507,0	1398,1	-108,90	no fronting	0

Table 8.10: Degree of fronting between F2 values in the diphthong pair /au-auT/.

Table 8.10 shows that two speakers (AF1 and AS1) out of 16 front in voiceless environments of MOUTH (/auT/). Instead of fronting in voiceless contexts, five speakers front in open syllables in relation to the voiceless contexts (/auT/), and WG1 shows an extreme

fronting in the /au/ context (F2 difference of -370 Hz). Moreover, eight speakers realise the F2 of MOUTH under 1450 Hz in voiceless contexts, which is considered to be extreme backing of /auT/ (Boberg 2008: 141).

Speaker	Mean F2 /au/ (Hz)	Mean F2 /auD/ (Hz)	Distance /au-auD/ (Hz)	Degree of fronting (Hz)	Fronter
JL1	1545,8	1466,5	-79,31	no fronting	0
KB1	1662,8	1629,8	-33,08	no fronting	0
MC1	1185,5	1073,7	-111,83	no fronting	0
SH1	1252,7	1239,3	-13,33	no fronting	0

Table 8.11: Degree of fronting between F2 values in the diphthong pair /au-auD/.

It can be observed in Table 8.11 that among the four speakers who have /auD/ tokens, none front in the voiced context. In contrast, one of them (MC1) fronts in open syllables compared to voiced contexts.

Speaker	Mean F2 /au/ (Hz)	Mean F2 /auN/ (Hz)	Distance F2 /au-auN/ (Hz)	Degree of fronting (Hz)	Fronter
AF1	1528,8	1620,8	92,04	no fronting	0
AS1	1640,0	1580,3	-59,67	no fronting	0
AV1	1349,7	1413,8	64,17	no fronting	0
CG1	1463,8	NA	NA	NA	NA
HS1	1458,9	1463,5	4,60	no fronting	0
JL1	1545,8	1550,2	4,35	no fronting	0
KB1	1662,8	1740,3	77,43	no fronting	0
KE1	1414,5	1466,6	52,10	no fronting	0
KG1	1388,0	1697,0	309,00	more than 100	1
LS1	1632,9	1463,5	-97,98	no fronting	0
LS2	1753,8	1671,9	-81,85	no fronting	0
MC1	1185,5	1316,8	131,25	more than 100	1
NR1	NA	1492,8	NA	NA	NA
RS1	1515,0	1559,5	44,54	no fronting	0
SH1	1252,7	1350,5	97,83	no fronting	0
SP1	NA	NA	NA	NA	NA
TM1	1395,1	1384,8	-10,29	no fronting	0
WG1	1621,0	1474,5	-146,50	no fronting	0
WW1	1507,0	NA	NA	NA	NA

Table 8.12: Degree of fronting between F2 values in the diphthong pair /au-auN/.

Out of 15 speakers, two front the nucleus of the PRICE diphthong in nasal contexts (KG1 and MC1), with KG1 exhibiting extreme fronting (F2>300 Hz); WG1 fronts in open syllables compared to nasal contexts (F2 mean difference: -146.50 Hz) (Table 8.12).

12.5% of the speakers front in the voiceless environment (N=2) and five speakers front in open syllables (/au/) compared to voiceless contexts (/auT/). Among the four speakers whose sample contains tokens in voiced contexts, none front in this context; nevertheless, one speaker fronts in open syllables compared to voiced contexts. In nasal contexts of MOUTH 13.4% of the speakers front (N=2) but one speaker fronts in open syllables compared to nasal environments. As far as fronting is concerned, except in voiceless environments of PRICE (38.9%), fronting can just be considered as individual variation (one or two speakers who exhibit some fronting in a specific context), and this is clearly shown by a total of less than 15%

in the contexts examined. Moreover, eight speakers realise /auT/ very backed (Boberg 2008: 141) and among them five speakers exhibit /au/ fronting in relation to /auT/.

The Pearson correlation coefficient, which was calculated before observing the unnormalised data, indicates that both diphthongs PRICE and MOUTH behave differently as regards the raising phenomenon (see above). The investigation of the data I have conducted reveals that raising occurs to a different extent for each diphthong since they are treated differently by speakers. Individual variation shows that MOUTH raising is more frequent overall, since raising occurs in more environments (pre-nasal, voiced) and is not restricted to the voiceless environment. Moreover, in traditional contexts of MOUTH raising (i.e., before a voiceless obstruent), speakers produce a higher F1 difference suggesting higher degrees of MOUTH raising than PRICE raising. In brief, speakers produce higher degrees of raising in voiceless environments of MOUTH than PRICE, and they also raise in more phonological contexts for MOUTH while they only raise in the voiceless context of the PRICE lexical set.

Furthermore, a closer examination of the scatter plots and the aforementioned tables reveals that the established benchmarks of raising and fronting do not always succeed in identifying all the individual variation that can be found in the data, since speakers may raise in environments where raising is unexpected as well. I will further discuss these limitations in the conclusion of this chapter. The examination of the data has also shown that there is individual variation with respect to fronting, but fronting occurs almost exclusively in the pre-voiceless context of the PRICE diphthong.

This section has demonstrated several trends in raising and fronting of these two diphthongs in the corpus based on the examination of unnormalised vowel formant data of individual speakers. In the following sections, Lobanov-normalised data (in z-score) are used to delve further into the study of CR and fronting.

8.2 Normalised mean formant values for PRICE and MOUTH diphthongs

The data sample includes a total 575 tokens for the MOUTH diphthong consisting of the following allophones /au/ (N=104), /auD/ (N=14), /auN/ (N=156), /auT/ (N=301). For the PRICE diphthong, it includes 1242 tokens: /ai/ (N=112), /aiD/ (N=261), /aiN/ (N=385), /aiT/ (N=484). The sample includes a mean of approximately 30 tokens per speaker for the MOUTH diphthong, but much fewer tokens of the MOUTH allophone before a voiced consonant as this context occurs less frequently in spontaneous speech, and a mean of 65 tokens per speaker for the PRICE diphthong.

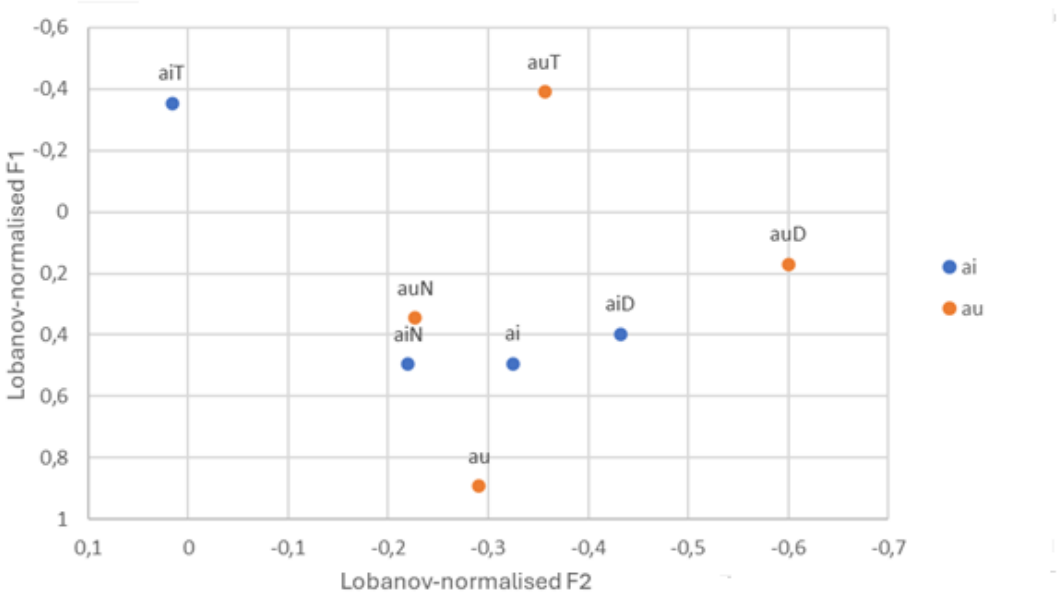

Figure 8.20: Lobanov-normalised mean F1 and F2 of /ai/ and /au/ and their allophones.

Figure 8.20 presents the normalised mean of the first and second formants for all the speakers' realisations of the allophones of the PRICE and MOUTH diphthongs. It can be observed that while /ai/ is realised low in the vowel space, /aiT/ is realised high. The difference between /ai/ and /aiT/ seems to suggest that there is raising in the voiceless context of PRICE. On the other hand, /aiN/ and /aiD/ have approximately the same F1 value as /ai/ so there is no raising in these contexts. Similarly, for the MOUTH diphthong, /au/ is low and /auT/ is high in the vowel space, suggesting raising in this environment, but compared to PRICE, in other contexts of MOUTH, there seems to be raising as well. /auN/ and /auD/ have lower F1 values than /au/ suggesting raising in these environments. On the F2 dimension, for PRICE, the voiceless context appears to be fronted in relation to /ai/ (higher F2 value). Similarly, /aiN/ appears to be slightly fronted, but /aiD/ has a lower F2 value, meaning it is further back in the vowel space. As regards the MOUTH diphthong, /auT/ and /auD/ exhibit lower F2 values than /au/ suggesting they are realised further back. On the other hand, /auN/ has a higher F2 value than /au/, indicating fronting in the pre-nasal environment. In short, this first examination of normalised mean formant data shows that CR is very much present in the corpus.

Following these initial observations, I conducted statistical tests to determine the significance of observed differences in vowel formant values between pairs of contexts. Recall that CR has been defined as a difference (at the significance level of $p<0.05$) between the mean F1 of the nucleus of a diphthong in an environment in which raising is expected (e.g., followed by a voiceless obstruent) and the mean F1 for contexts in which raising is not expected (e.g., no following obstruent) (Sadlier-Brown 2012: 535). The same statistical difference is applied to determine fronting in a pair of environments. I test the differences between /ai-aiT/, /ai-aiD/,

/ai-aiN/ and statistical analyses are conducted in the same environments for MOUTH. A series of independent samples t-tests are conducted on group F1 means to study eventual raising (results are presented in Table 8.13), and on group F2 means to study eventual fronting (results are presented in Table 8.14).

Diphthong	Environment	p-value	Mean difference
PRICE	F1 /ai-aiT/	**< .001**	-0.845
	F1 /ai-aiD/	0.446	-0.098
	F1 /ai-aiN/	0.967	0.004
MOUTH	F1 /au-auT/	**< .001**	-1.33
	F1 /au-auN/	**< .001**	-0.593
	F1 /au-auD/	**0.034**	-0.674

Table 8.13: T-test on F1 mean difference between the contexts of F1 of all the speakers. Significant differences are shown in bold.

It can be seen in the data in Table 8.13 (F1 values, open/close dimension) that the t-test reveals a highly significant difference ($p<.001$) between the F1 of /ai/ and the F1 of /aiT/, indicating raising in the voiceless context. The mean difference between the z-score values for these two environments is 0.845. The other PRICE environments examined do not exhibit significant F1 differences: /ai-aiN/ ($p=0.967$), /ai-aiD/ ($p=0.446$). These results confirm what was observed in the F1-F2 plot in Figure 8.20, with the exception of the context before a voiceless obstruent where raising occurs. Tokens of the PRICE vowel in other contexts do not differ significantly from each other on the F1 dimension.

As regards the MOUTH diphthong, the t-test shows a highly significant difference ($p<.001$), between the mean F1 z-score values for /au/ and /auT/ of 1.33, which indicates raising in the voiceless environment of MOUTH. Likewise, the difference in mean F1 z-score values of 0.593 between /au/ and /auN/ is significant ($p<.001$), thus indicating raising in nasal contexts. The difference of 0.694 in between the F1 z-score values of /au/ and /auD/ is also found to be significant ($p=0.034$). This statistical value is probably less significant because there are only four speakers who have tokens in the voiced environment.

With respect to raising, this series of t-tests confirms observations made on the data in the F1-F2 plot in Figure 8.20: raising is highly present in the expected environment preceding a voiceless consonant for both diphthongs. However, the PRICE and MOUTH diphthongs behave differently with respect to the environments in which raising is present. While raising of the MOUTH diphthong before nasal and voiced consonants was confirmed by the statistical tests, for the PRICE diphthong, the only environment where raising is confirmed is before a voiceless consonant.

Diphthong	Environment	p-value	Mean difference
PRICE	F2 /ai-aiT/	**< .001**	0.338
	F2 /ai-aiN/	0.216	0.103
	F2 /ai-aiD/	0.303	-0.106
MOUTH	F2 /au-auT/	0.652	-0.0669
	F2 /au-auN/	0.562	0.067
	F2 /au-auD/	0.055	-0.457

Table 8.14: T-test on F2 mean difference between the contexts of F2 of all the speakers. Significant differences are shown in bold.

Table 8.14 presents the results of the t-tests performed on mean F2 values (the back/front dimension) for pairs of contexts for both diphthongs. For the pair /ai-aiT/, the mean difference of -0.338 in F2 z-score values is significant, which indicates fronting of the PRICE vowel before a voiceless obstruent. The statistical test shows no statistically significant difference in mean F2 between /ai/ and /aiN/ (p=0.216) and /ai/ and/aiD/ (p=0.303). These results confirm the observations made above based on the F1-F2 plot in Figure 8.20.

I also examine the F2 mean differences of the MOUTH diphthong using t-tests. The t-test does not show any statistically significant mean difference between the contexts /au/ and /auD/ (p=0.055). Even though the mean difference in z-score values between these environments is 0.457, which appears considerable, the t-test does not reveal a significant difference in these environments. Again, this may perhaps be attributable to the fact that only four speakers have tokens of MOUTH in the voiced environment. In addition, /au/ and /auT/ are realised with approximately the same F2 value which might explain the non-significant difference of the t-test in these contexts. Similarly, /au/ and /auN/ are relatively close to each other and the t-test does not indicate any statistically significant mean difference in these contexts either (see Table 8.14).

To conclude, the series of independent samples t-tests conducted on the group mean of F1 has confirmed raising in expected environments (/aiT/ and /auT/), as well as in the voiced and nasal contexts for the MOUTH diphthong. While PRICE raising occurs only in the context of voiceless obstruents, MOUTH variants are raised in more environments. This demonstrates that raising has been extended to newer phonological environments for the MOUTH vowel. Nevertheless, the greatest degree of raising is still found in voiceless contexts. The t-tests have also demonstrated that some fronting occurs in the data, but that it is limited to the PRICE diphthong, since no significant mean difference is confirmed for the MOUTH diphthong, and

only in voiceless contexts of PRICE. These results suggest that fronting is found in the PRICE diphthong and in the MOUTH diphthong in the English spoken by the speakers in the corpus.

8.3 Raising and social variables

In order to investigate the sociolinguistic aspects of CR, I conducted a series of multivariate analyses of variance (MANOVA) to determine the eventual effects of social factors on the calculated F1 difference between two environments (i.e., the degree of raising). The MANOVA were performed with the difference between each pair of contexts of the MOUTH diphthong: /au-auT/, /au-auN/, and of the PRICE diphthong: /ai-aiT/, /ai-aiN/ /ai-aiD/ set as dependent variables and the social factors set as fixed factors[58]. The pair /au-auD/ is not examined as only four speakers have /auD/ tokens; therefore, statistical tests will not offer significant results. Regarding the social factors I examine gender, age, gender*age (i.e., interaction between gender and age), and the SES score and SES group of the speakers.

These are the results of the series of MANOVA for the MOUTH diphthong. For the pair /au-auT/, the SES score is found to be statistically significant (p=0.005), and gender is found to approach significance (p=0.052), while other social factors do not show a statistically significant correlation with raising (gender*age p=0.472, age p=0.407, and SES group p=0.386). For the pair /au-auN/, none of the social factors tested are found to be statistically correlated with the degree of raising in these environments. The results of the MANOVA for /au-auN/ are the following: gender*age p=0.421, gender p= 0.605, age p=0.696, SES score p=0.348 and SES group p=0.840.

These are the results of the series of MANOVA for the PRICE diphthong. For the pair /ai-aiT/, in the expected context of raising, the correlation between gender*age and degree of raising is found to be marginally significant (p=0.054), whereas other social factors do not reach statistical significance: gender (p=0.582), age (p=0.712), SES score (p=0.245) and SES group (p=0.120). For the pair /ai-aiN/, no correlations between the difference between these contexts and social variables are found: gender (p=0.795), age (p=0.592), gender*age (p=0.072), SES score (p=0.130) and SES group (p= 0.101). For the pair /ai-aiD/ as well, none of the social factors are significantly correlated with raising: gender*age (p=0.999), gender (p=0.367), age (p=0.508), SES score (p=0.535) and SES group (p=0.333).

In the section below, I further examine the correlations which are statistically significant. For the pair /au-auT/, gender is found to approach significance (p=0.052), and I offer a

[58] The statistical analyses can be found in Appendix C.

discussion on the main effect of gender on the degree of raising in the voiceless context of MOUTH. I first use a visual representation (Figure 8.21) and I then conduct a series of independent samples t-tests comparing differences in F1 mean values between /au/ and /auT/ within gender groups.

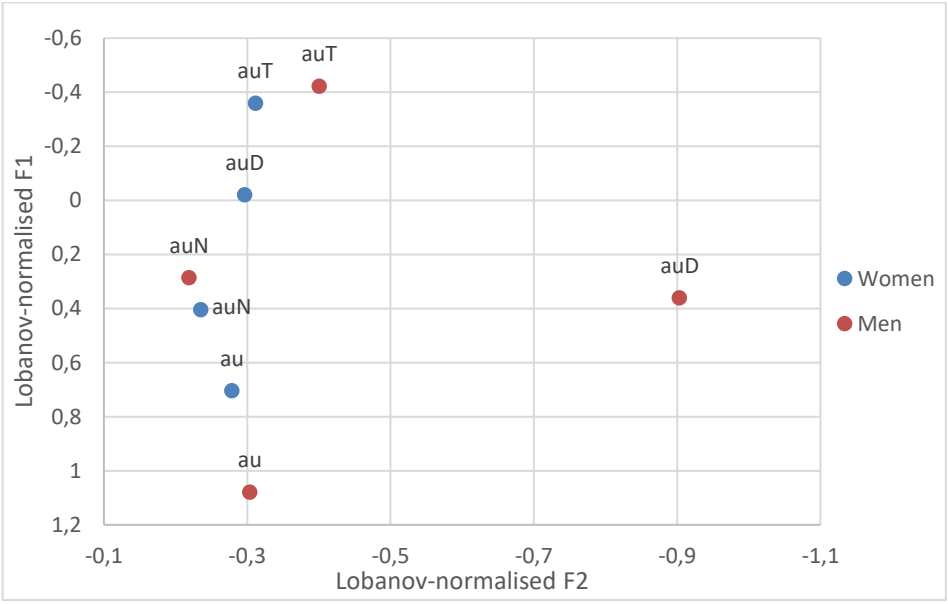

Figure 8.21: Normalised means F1 and F2 of the MOUTH diphthong by contexts and by gender.

The plot in Figure 8.21 shows normalised mean F1 and F2 values by gender. This plot shows that male speakers realise /au/ low in the vowel space while they realise /auT/ high in the vowel space, indicating raising in the expected /auT/ context. The same occurs with female speakers, but to a lesser extent since /au/ is slightly higher in the vowel space and /auT/ is slightly lower, thus reducing the F1 difference between these contexts but still indicating raising in the voiceless environment. As a result, the data in Figure 8.21 suggest that male speakers have a higher degree of raising than female speakers in the calculated F1 difference in these environments. To test the statistical significance of these F1 mean differences I conducted independent samples t-tests.

Gender	Environment	Mean	Mean difference /au-auT/
Male	/au/	1.08	1.50***
	/auT/	-0.422	
Female	/au/	0.704	1.06***
	/auT/	-0.359	

Table 8.15 F1 mean of the /au/ and /auT/ by gender and calculated F1 mean difference. Three asterisks indicate that the mean difference is statistically significant at the p< .001 level. The highest mean difference between the two environments is underlined.

The results of a series of independent samples t-tests presented in Table 8.15 reveal highly statistically significant F1 mean differences between /au/ and /auT/ for both gender groups. They also indicate that the mean difference between unraised and raised environments is higher for male speakers, thus showing a higher degree of raising in this context than for female speakers. Female speakers realise /au/ higher in the vowel space, thus reducing the difference between the unraised and raised contexts, as can be observed in Figure 8.21. The MANOVA has shown a marginally significant effect of gender on the degree of raising of /auT/ and this is confirmed by the t-tests. Both gender groups exhibit raising in the voiceless environment of MOUTH (statistical significance of the t-tests) but male speakers appear to exhibit a higher F1 difference (1.50>1.06). This is also what is found when looking at the unnormalised data (individual variation). Nine out of 10 male speakers realise a difference of more than 140 Hz between /au/ and /auT/, which corresponds to nine male speakers out of 13 speakers total. However, observation of Figure 8.21 shows that this higher F1 difference is not due to /auT/ being higher in the vowel space (lower F1) but is rather due to /au/ being realised low in the vowel space.

The MANOVA also shows a significant (p=0.005) correlation between the degree of raising of /auT/ in relation to /au/ and the SES score of the speakers. As stated earlier in Chapter 5, section 5.2.1, a lower SES score indicates a lower socioeconomic status level, as the SES level increases from group 1 to group 3. To investigate this finding further, a Pearson correlation coefficient is calculated for the degree of raising for the pair /au-auT/ and the SES score. The results show a moderate positive coefficient (r=0.219), but this coefficient is not found to be statistically significant (p=0.415). Since the MANOVA suggests a statistically significant correlation, the result of the Pearson correlation coefficient is only used to interpret the direction of this correlation. The correlation coefficient (r) suggests a moderate positive correlation which means that higher socioeconomic status (i.e., speakers with higher SES score) leads to a more pronounced difference between /au/ and /auT/, suggesting more raising among speakers with higher socioeconomic status. The Pearson correlation is performed using mean data and that

may explain the lack of significance of the results; the size of the corpus may prevent me from drawing strong conclusions on this point. This trend would need to be confirmed with a larger corpus.

I also calculated a Pearson correlation coefficient on the SES score and the F1 of /au/ and separately with the F1 of /auT/ to investigate the correlations between the position of /au/ and /auT/ in the vowel space and this social factor. This analysis did not yield statistically significant results either, for /au/ (r=0.177) (p=0.073), and for /auT/ (r=0.059) (p=0.307). These further investigations are unsuccessful in explaining the highly significant correlation between the degree of raising and the SES score of the speakers (p=0.005).

In the expected context of raising of the PRICE diphthong (/ai-aiT/), the MANOVA reveals a marginally significant correlation between gender*age and degree of raising (p=0.054). To explore this correlation further I provide a visual representation of the data (Figure 8.22) and I then conduct a series of independent samples t-tests.

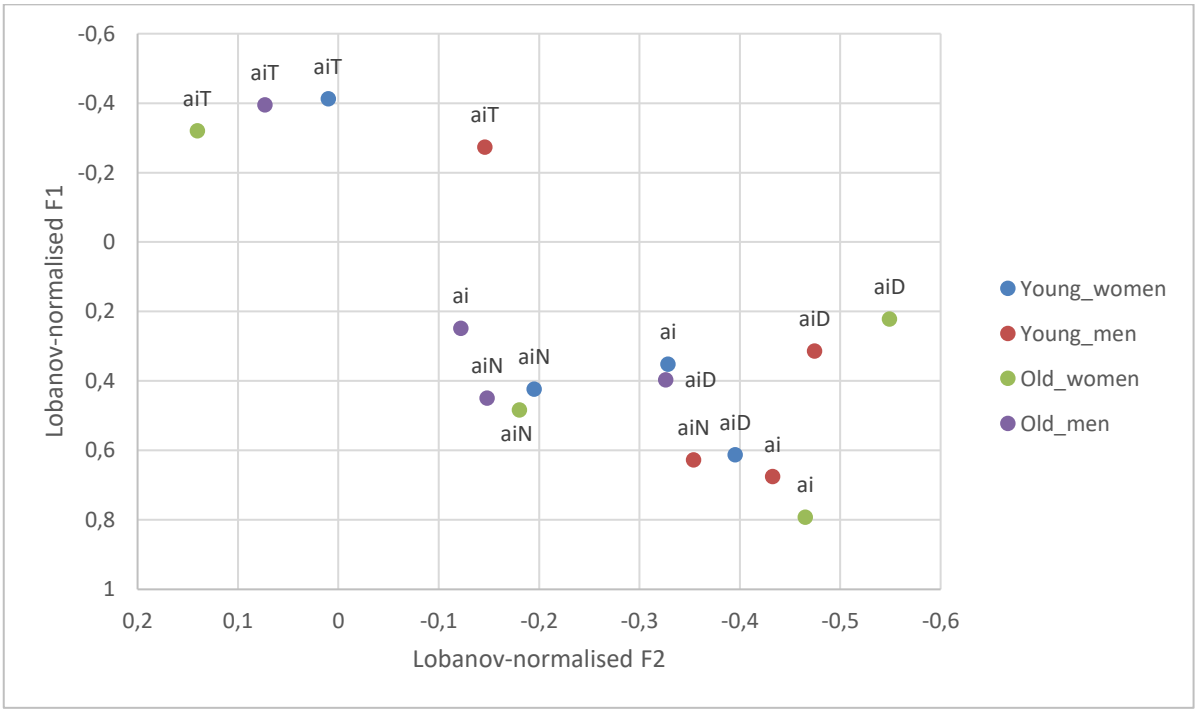

Figure 8.22: Normalised means F1 and F2 of the PRICE diphthong and its allophones by age and gender.

Figure 8.22 shows variation in PRICE raising by gender and age groups. Female speakers under 40 raise the most in the voiceless context of PRICE and female speakers over 40 realise the lowest PRICE diphthong in open syllables, while male speakers over 40 and female speakers under 40 appear to realise /ai/ higher in the vowel space. Furthermore, Figure 8.22 also indicates that female speakers under 40 produce the lowest PRICE diphthong in the voiced environment, in contrast with male speakers under 40 and female speakers over 40 who produce

the diphthong higher in the vowel space. Male and female speakers over 40 and female speakers under 40 all realise their diphthongs in nasal environments close to each other (similar F1 values), but realisations of male speakers under 40 are lower in the vowel space.

In addition, Figure 8.22 allows for the observation of fronting. All groups front in the voiceless environment of PRICE in relation to /ai/ but male speakers under 40 tend to exhibit the least fronting. In nasal environments, with the exception of male speakers over 40 who do not front in this context while all other groups do, female speakers over 40 front /aiN/ in relation to /ai/ to a larger extent than other groups. As for the voiced environment of PRICE, Figure 8.22 shows that none of the groups exhibit fronting in this environment, /aiD/ showing a lower mean F2 value than /ai/. To summarise, Figure 8.22 shows variation in raising and fronting, but the statistical tests (MANOVA) only confirm the effects of age and gender combined on the difference between /ai/ and /aiT/ on the F1 dimension, and other significant correlations are found on the F2 dimension. Table 8.16 below gives the results of the independent samples t-tests which are conducted to further investigate the correlation between /ai-aiT/ and age and gender.

Gender*Age	Environment	Mean	Mean difference /ai-aiT/
Male over 40	/ai/	0.249	0.644***
	/aiT/	-0.395	
Male under 40	/ai/	0.675	0.949*
	/aiT/	-0.273	
Female over 40	/ai/	0.792	1.11***
	/aiT/	-0.320	
Female under 40	/ai/	0.351	0.763***
	/aiT/	-0.412	

Table 8.16: F1 mean of the /ai/ and /aiT/ by age and gender and calculated mean difference. Three asterisks indicate that the mean difference is statistically significant at the level of $p < .001$, and one asterisk indicates the mean difference is statistically significant at the $p<0.05$ level. The highest mean difference between the two environments is underlined.

The statistical tests show that the correlation between the degree of raising in these environments and the variables of gender and age combined is statistically significant. Female speakers over 40 exhibit the highest degree of PRICE raising before a voiceless consonant. As can be seen in Figure 8.22 and the numerical data in Table 8.16, female speakers over 40 produce the lowest realisations in open syllables and still raise in the voiceless environment, showing the highest degree of raising in the expected environment (difference of 1.11 in F1 z-

score values). This result corroborates what is observed in unnormalised data since three out of four female speakers over 40 exhibit F1 differences between /ai-aiT/ of more than 110 Hz (KB1, LS2 and SP1) (see Table 8.1). Similarly, as with the female speakers over 40, the statistical significance of the mean difference is high in groups of male speakers over 40 and female speakers under 40 which both exhibit smaller F1 differences between these environments than female speakers over 40. This mean F1 difference is likely due to their realisations of /ai/ which appears to be higher in the vowel space than those of female speakers over 40, thus suggesting that these groups have begun to exhibit some raising in open syllables as well, thus reducing the F1 mean difference between these contexts. Even though all speakers raise in the voiceless environment of PRICE, older female speakers tend to produce higher degrees of raising between /ai/ and /aiT/, but this increasing difference is not due to /aiT/ being raised higher by female speakers over 40. Rather, they realise PRICE in open syllables as a very low vowel.

8.4 Raising and the Hockey Involvement Index (HII)

A primary focus of this research is the potential conditioning factor of speakers' level of engagement in hockey (HII score/HII group). I investigate the possible correlations between the calculated F1 difference between two environments (i.e., the degree of raising) using a series of multivariate analyses of variance (MANOVA), just as I have done for other social factors in the CR analysis. The MANOVA are performed on the difference between each pair of contexts of the MOUTH diphthong: /au-auT/ and /au-auN/, and of the PRICE diphthong: /ai-aiT/, /ai-aiN/ and /ai-aiD/ set as dependent variables and the HII score and HII group set as fixed factors.

The series of MANOVA reveals that HII group is not statistically correlated with the F1 difference between two environments, for PRICE or for MOUTH (/ai-aiT/ (p=0.541), /ai-aiN/ (p=0.716), /ai-aiD/ HII (p=0.807) and /au-auT/ (p=0.568) and /au-auN/ (p=0.955). As for the HII score, the analysis shows a statistically significant correlation for the pair /ai-aiN/ (p=0.035), and not for the other examined contexts (/ai-aiT/ (p=0.760), /ai-aiD/ p=0.807, /au-auT/ (p=0.148), /au-auN/ p=0.886). To further explore this correlation between /ai-aiN/ and HII score, I first calculate a Pearson correlation coefficient for the F1 mean difference between /ai-aiN/ and the HII score, but this did not yield a significant result (p=-0.172, r=-0.327). The correlation revealed by the MANOVA analysis is difficult to explain and could perhaps be attributable to sample size.

To conduct a more in-depth investigation to know whether the HII score of the speakers have any influence of their realisations of PRICE and MOUTH diphthongs in the different contexts, I calculate Pearson correlation coefficients between the first formant (F1) in a specific

context (e.g., (F1) /auT/) and the HII score). The results show that none of the first formants of MOUTH environments are correlated with the HII score (/auT/ p=0.629, /au/ p=0.670, /auN/ p=0.340).

As for PRICE, while the analysis of /aiN/ and /ai/ does not yield statistically significant results (/aiN/ p=0.793, /ai/ p=0.799), two correlations are found to be statistically significant for PRICE. The test shows a weak but highly significant negative correlation (r=-0.118; p=0.009) between the HII score and mean F1 in the voiceless environment of PRICE, suggesting that speakers with higher HII score (more engaged with hockey) realise /aiT/ higher in the vowel space. In addition, the Pearson correlation reveals that the F1 of the PRICE allophone before a voiced consonant and the HII score are correlated (p=0.037), and a weak negative correlation coefficient of r=-0.129 suggests that speakers with a higher HII score produce /aiD/ higher in the vowel space.

The HII group of the speakers does not condition raising for any of the diphthongs. Similar to this finding, the numerical HII score considered as a continuous independent variable is not found to be related to higher F1 mean differences between two environments, with the exception of /ai-aiN/. However, it appears that speakers with higher HII scores realise the PRICE vowel in /aiT/ and /aiD/ contexts higher in the vowel space.

8.5 Fronting and social variables

In order to investigate the sociolinguistic aspects of fronting, I applied the same methodology as I used for the analysis of raising and conducted a series of multivariate analyses of variance (MANOVA) to determine eventual effects of social factors on the calculated F2 difference between two environments (i.e., the degree of fronting). The MANOVA was performed using the difference between each pair of contexts of the PRICE diphthong: /ai-aiT/, /ai-aiN/, /ai-aiD/ and of the MOUTH diphthong: /au-auT/, /au-auN/. As the dependent variable and the social factors as fixed factors. Social factors tested include gender, age, gender*age, SES score and SES group. The pair /au-auD/ is not examined as only four speakers have /auD/ tokens; therefore, statistical tests will not offer significant results.

These are the results of the series of MANOVA for the MOUTH diphthong. For the pair /au-auT/, age is found to be significantly correlated with the difference between these environments (p=0.003), but the other social factors do not show a statistically significant correlation (gender p=0.826, gender*age p=0.983, SES score p= 0.817 and SES group p= 0.580). For the pair /au-auN/, age is also found to be significantly correlated with the distance between these environments (p=0.010), but none of the other social factors are found to be

significantly correlated with the distance between these environments (gender*age (p=0.608), gender (p=0.728), SES score (p=0.222) and SES group (p=0.337)).

These are the results of the series of MANOVA for the PRICE diphthong. The correlation between gender and age combined and the F2 difference between /ai/ and /aiT/ is found to be statistically significant (p=0.023) but none of the other social factors examined show significant correlations (gender p=0.144, age p=0.967, SES score p=0.697, and SES group p=0.369). Moreover, for the pair /ai-aiD/, the correlation with gender is found to be statistically significant (p=0.051) and the correlation with gender and age combined is also found to be significant (p=0.042). The other social factors tested do not show significant correlations (age p=0.241, SES score p=0.254, and SES group p=0.194). Finally, for the pair /ai-aiN/, the F2 difference is not found to be correlated with any of the traditional social factors tested (age p=0.683, gender p=0.232, gender*age p=0.108, SES score p=0.432, and SES group p=0.057). In the following section, I further explore the correlations which are found to be statistically significant, and additional analyses are performed on these correlations.

The MANOVA reveals a highly statistically significant correlation between the pair /au-auT/ and age (p=0.003). Further independent samples t-tests are performed to determine the differences between these two age groups (see Table 8.17) but first the data are examined in Figure 8.23 to observe general age group patterns.

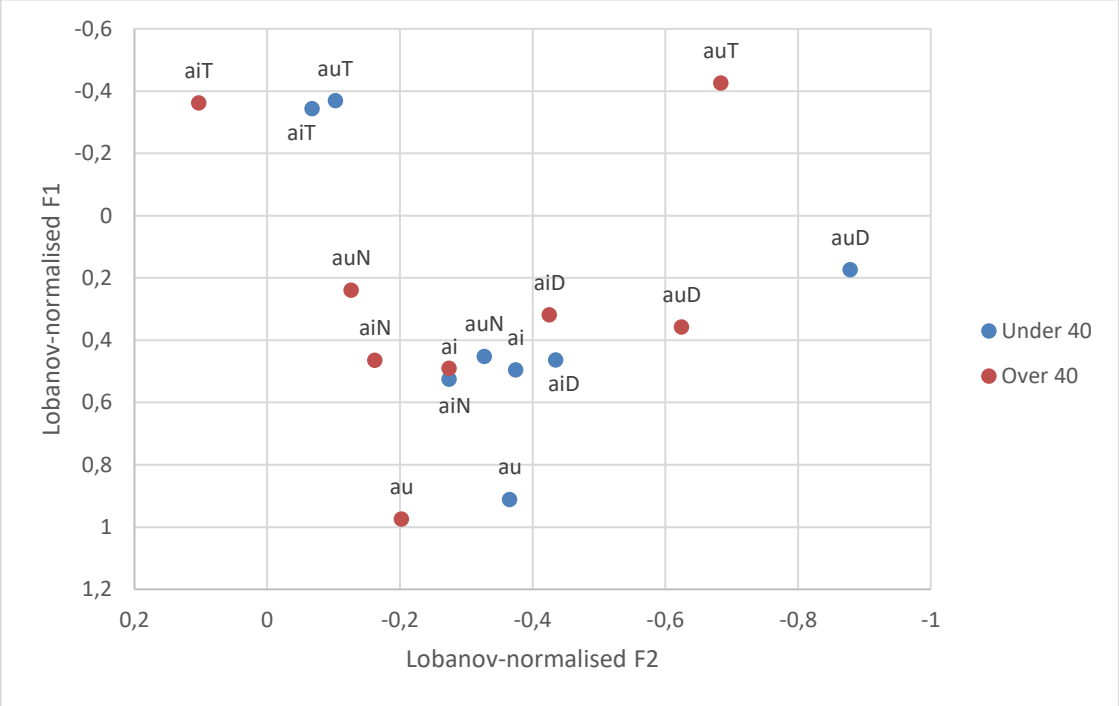

Figure 8.23: Normalised means F1 and F2 of PRICE and MOUTH diphthongs in the different environments by age.

Observation of Figure 8.23 shows that, with respect to the F1 dimension, MOUTH diphthongs in voiceless environments and in open syllables are realised at approximately the same height as their counterparts, but there is variation on the F2 dimension. Much more difference in the voiceless environment of MOUTH can be observed. While speakers under 40 realise fronted /auT/, speakers over 40 realise /auT/ backed in relation to /au/. Both age groups realise diphthongs in nasal environments and open syllables with approximately the same F2 values. In addition, /aiT/ is fronted in relation to /ai/ for both age groups. /aiN/ is also fronted in relation to /ai/. On the other hand, /aiD/ is backed in relation to /ai/. On the F1 dimension, for both groups /aiT/ is realised high in the vowel space while /ai/ is low.

Age	Environment	Mean	Mean difference /au-auT/
Over 40	/au/	-0.202	<u>0.481</u>*
	/auT/	-0.684	
Under 40	/au/	-0.366	-0.263
	/auT/	-0.103	

Table 8.17: F2 mean of /au/ and /auT/ by age groups and calculated mean difference. One asterisk indicates that the mean difference is statistically significant at the $p<0.05$ level. The highest mean difference between the two environments is underlined.

In order to determine the statistical significance of general patterns observed in Figure 8.23, results of the independent samples t-tests are reported in Table 8.17. These results reveal that the difference in F2 mean between open syllable contexts and voiceless contexts is

statistically significant for speakers over 40 (p=0.032), but the same is not true for speakers under 40, the difference between contexts not being statistically significant (p=0.158). Fronting is therefore confirmed for older speakers but not for younger speakers. However, observation of Figure 8.23 shows that speakers over 40 do not front in voiceless contexts; rather, they back the vowel in this context. In order to further investigate this correlation, I conduct a Pearson correlation coefficient on the F2 difference between /au-auT/ and the age of the speakers. The test reveals a highly significant result (p=0.006), and the correlation coefficient (r=0.652) suggests that the oldest the speakers are, the greater the F2 difference that is found between these contexts.

Observation of the realisations for each speaker of /au/ and /auT/ contexts in Figure 8.24 allows one to visualize the trend confirmed by the statistical analysis: there is considerable individual variation on the F2 dimension in the voiceless context of MOUTH. /auT/ appears to be divided into two age groups on the F2 dimension: speakers under 40 realise MOUTH further front, whereas speakers over 40 exhibit backed MOUTH in voiceless environments.

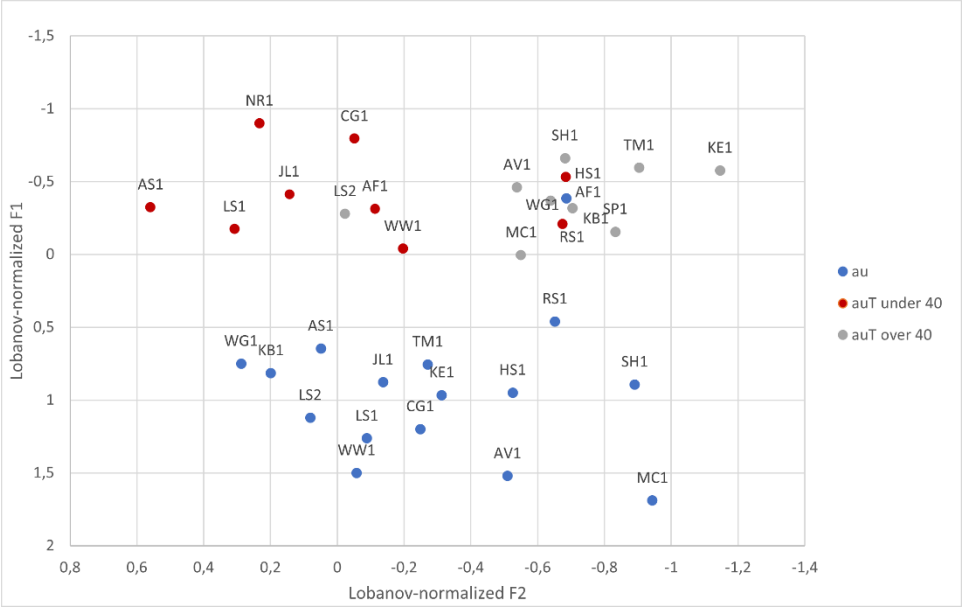

Figure 8.24: Lobanov-normalised means F1/F2 of all speakers /au/ and /auT/.

I conduct an analysis of variance (ANOVA) to test the correlation between age and the position of the diphthong MOUTH in voiceless context in the vowel space. This analysis reveals a statistically significant correlation between age and the first formant of /auT/ (p=0.006). Moreover, an additional Pearson correlation coefficient between F2 of /auT/ and age is performed. This analysis yields a highly significant correlation (p<.001) between F2 of /auT/ and age of the speakers and a strong negative correlation coefficient (r=-0.341), indicating that /auT/ is realised further back (lower F2) as age of the speakers increases. This correlation suggests that younger speakers in the corpus tend to realise /auT/ further front in the vowel

space, while older speakers maintain a less fronted realisation of MOUTH before voiceless contexts on the F2 dimension.

The MANOVA reveals a significant correlation between the degree of fronting of /au-auN/ and age group. I first conduct independent samples t-tests to investigate this correlation.

Age	Environment	Mean	Mean difference /au-auN/
Over 40	/au/	-0.202	-0.0755
	/auN/	-0.127	
Under 40	/au/	-0.366	-0.0382
	/auN/	-0.327	

Table 8.18: F2 mean of /au/ and /auN/ by age groups and calculated mean difference. Absence of asterisks indicates non-significant results.

The results of the t-tests (Table 8.18) are in agreement with observations on the data in Figure 8.23 which show that both age groups exhibit approximately the same realisations of /auN/ and /au/ on the F2 dimension. Therefore, the mean F2 difference between these environments is not statistically significant for any of the age groups.

A Pearson correlation coefficient is then performed on the mean F2 difference between /au/ and /auN/ and age. The analysis results in a highly significant correlation between ($p=0.007$) with a strong positive correlation coefficient ($r=0.666$), which indicates that the older the speakers are, the greater the F2 difference between these contexts, and this seems to be due to /auN/ being fronted in relation to /au/.

The MANOVA reveals a statistically significant three-way correlation between the degree of fronting of /ai-aiT/ and gender*age.

Gender*Age	Environment	Mean	Mean difference /ai-aiT/
Male over 40	/ai/	-0.122	-0.195
	/aiT/	0.0730	
Male under 40	/ai/	-0.433	-0.287
	/aiT/	-0.146	
Female over 40	/ai/	-0.465	-0.605
	/aiT/	0.140	
Female under 40	/ai/	-0.328	-0.339*
	/aiT/	0.0101	

Table 8.19: F2 mean of the /ai/ and /aiT/ by age and gender and calculated mean difference. An asterisk indicates that the mean difference is statistically significant at the p<0.05 level. The highest mean difference between the two environments is underlined.

Additional t-test results reported in Table 8.19 show that the difference between the two environments is only statistically significant among female speakers under 40 (degree of fronting -0.339 z-score) (p=0.017), while it approaches significance for the group of female speakers over 40 (p=0.055) who produce a higher degree of fronting than female under 40 (-0.605 z-score). Results for the male speakers, regardless of age, are not statistically significant. This seems to corroborate what was observed in Figure 8.22: all groups front PRICE in the voiceless environment in relation to /ai/, but male speakers under 40 tend to exhibit the least fronted /aiT/. The mean F2 difference between /ai/ and /aiT/ is only significant for females under 40, which suggests this is the only group which fronts /aiT/ enough to produce a statistically difference in relation to /ai/. This correlation between the degree of fronting and age and gender suggests that fronting in the voiceless context is a possible change in progress with younger female speakers in the lead.

Two last correlations are revealed by the MANOVA, a correlation between the F2 mean difference between /ai/ and /aiD/ and gender (p=0.051), but also between /ai/ and /aiD/ and age and gender combined (p=0.042). To further investigate this correlation with gender, I first present the data in a scatter plot (Figure 8.25 below).

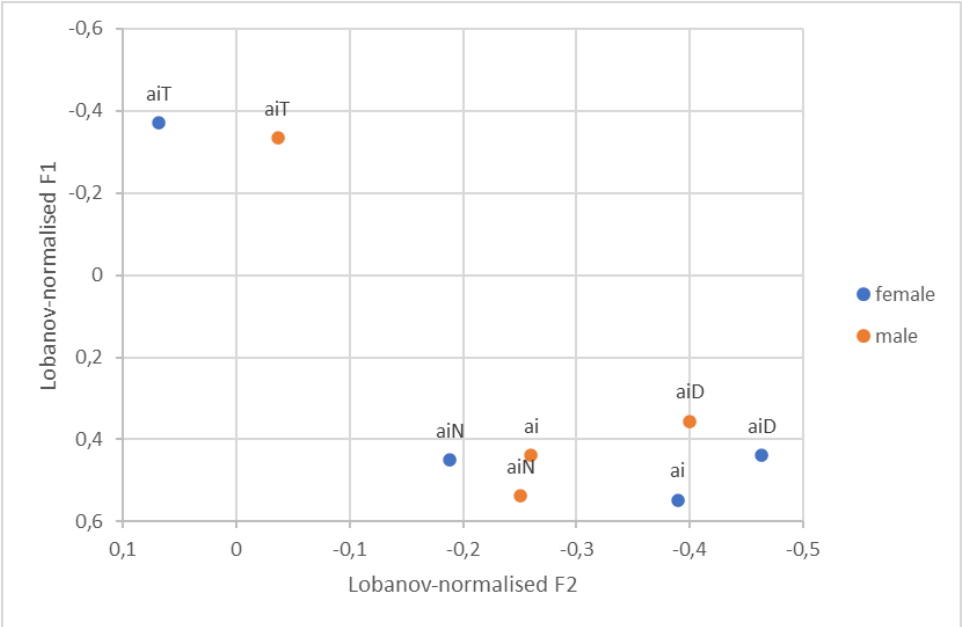

Figure 8.25:Lobanov-normalised means F1 and F2 by gender for the PRICE diphthong.

Figure 8.25 indicates that male speakers realise /ai/ and /aiD/ with approximately equal F1 values, but they differ on the F2 dimension: /aiD/ has a lower F2 value than /ai/. For female speakers, this F2 difference between /ai/ and /aiD/ goes in the same direction: /aiD/ is realised further back in the vowel space, but the F2 difference between these contexts is smaller for female speakers.

In addition to the observation of Figure 8.25, I conduct a series of independent samples t-tests to examine the statistical significance of the F2 mean difference between these contexts in the gender groups (see Table 8.20).

Gender	Environment	Mean	Mean difference /ai-aiD/
Male	/ai/	-0.260	0.140
	/aiD/	-0.400	
Female	/ai/	-0.389	0.0744
	/aiD/	-0.464	

Table 8.20: F2 mean of /ai/ and /aiD/ contexts by gender and calculated mean difference. Absence of asterisk indicates non-significant results.

The t-tests presented in Table 8.20, demonstrate that the F2 difference between /ai/ and /aiD/ in the two gender groups is not statistically significant and therefore does not confirm fronting in the voiced context in relation to open syllables. Moreover, as seen in Figure 8.25, both groups realise /aiD/ at the back of the vowel space, and /ai/ is consequently fronted in relation to the voiced context of PRICE but the difference between /ai/ and /aiD/ is not significant in any way. The correlation suggested by the MANOVA cannot be interpreted further in these contexts, even if male speakers appear to front in open syllables further than female speakers. The difference between the two contexts does not reveal fronting in this context.

As previously mentioned, the MANOVA also indicates a correlation between gender and age combined and the pair of diphthongs /ai-aiD/. This correlation for /ai-aiD/ and age and gender can be observed on Figure 8.22. Indeed, it shows that all groups display /aiD/ with lower F2 values than /ai/, but male speakers under 40 and female speakers over 40 realise their contexts in the same quadrant of the vowel space, and also display height differences (in F1) between these contexts, whereas female speakers under 40 and male speakers over 40 exhibit less of a difference on the F1 dimension between these environments, with male speakers over 40 realising the least variation on the F1 dimension. They appear to realise /ai/ as more fronted

in relation to /aiD/ than other groups examined. To further examine these F2 differences between /ai/ and /aiD/, I conduct a series of independent samples t-tests.

Gender*Age	Environment	Mean	Mean difference /ai-aiT/
Male over 40	/ai/	-0.122	0.204
	/aiD/	-0.336	
Male under 40	/ai/	-0.433	0.0418
	/aiT/	-0.474	
Female over 40	/ai/	-0.465	0.0839
	/aiT/	-0.549	
Female under 40	/ai/	-0.328	0.0668
	/aiT/	-0.395	

Table 8.21: F2 mean of /ai/ and /aiD/ contexts by gender and age and calculated mean difference. Absence of asterisk indicates non-significant results.

The F2 difference between /ai/ and /aiD/ is not statistically significant for any of the groups examined. Thus, fronting is not confirmed in this environment (Table 8.21). The calculated mean difference is however observed to be higher between /ai/ and /aiD/ for male speakers over 40, an observation which was made on Figure 8.22 as well. Although this difference is not statistically significant and does not allow me to draw further conclusions, the group of male speakers over 40 appears to differ from other groups in their fronting of /ai/.

8.6 Fronting and the Hockey Involvement Index (HII)

Using a series of multivariate analyses of variance (MANOVA), I investigate the correlations between the calculated F2 difference between two environments (i.e., the degree of fronting) and the traditional social factors, as in the CR analysis. The MANOVA are performed with the difference between each pair of contexts of the MOUTH diphthong as the dependent variable and both HII score and HII group as dependent variables, with the same methodology as for the PRICE diphthong. The MANOVA performed on the MOUTH diphthong reveals a statistically significant correlation between degree of fronting of the pair /au-auT/ and the HII score ($p=0.048$), but not for the HII group ($p=0.194$). A significant corelation was found for /au-auN/ and both HII score ($p=0.003$) and HII group ($p=0.045$). For the PRICE diphthong, the analyses reveal that the degree of fronting of /ai-aiN/ was significantly correlated with HII group ($p=0.050$) but not with the HII score ($p=0.152$). No other F2 differences between two environments of PRICE are found to be significantly correlated

with the hockey engagement of the speakers (/ai-aiT/: HII group p=0.315; HII score p=0.623 and /ai-aiD/: HII group p=0.412; HII score p=0.394).

The MANOVA reveals a statistically significant effect of the HII score on the degree of /au-auT/ fronting. A Pearson correlation for the difference between mean F2 of /au/ and /auT/ and the HII score is calculated, but the result is not conclusive as the p-value is not statistically significant (p=0.196, r= -0.341). Another Pearson correlation coefficient is then calculated to determine whether the F2 of /auT/ and the HII score of the speakers are correlated. A statistically significant (p< .001) positive weak correlation is found (r=0.194). When the speakers have a higher HII score, they realise higher F2 values in the voiceless environment of MOUTH, so the vowel is more fronted. However, another Pearson correlation coefficient calculated on the F2 of /au/ revealed no significant correlation between the F2 of /au/ and the HII score (p=0.225, r=-0.120).

The MANOVA also reveals a statistically significant effect of the HII score (p=0.003) and HII group (p=0.045) on the degree of /au-auN/ fronting. I first examine the correlation between the HII score and /au-auN/. A Pearson correlation coefficient is calculated on the mean difference between /au/ and /auN/ and the HII score of the speakers. The result of this test is not statistically significant (p=0.084, r=-0.461) and does not offer a basis for a conclusive explanation of the first correlation revealed by the MANOVA. Further Pearson correlation coefficients are calculated between the realisation of /au/ and /auT/ separately and the HII score. The first Pearson correlation coefficient is not conclusive for /au/ (p=0.634, r=-0.129). The second Pearson correlation coefficient is performed to test the interaction between the F2 of /auN/ and the HII score. The correlation is statistically significant (p=0.013) and yields a moderate negative coefficient (r=-0.200), suggesting that speakers with a higher HII score produce /auN/ with lower F2 values indicating a less fronted realisation in nasal environments for these speakers.

Furthermore, the correlation between /au-auN/ and HII group is observed in Figure 8.26, and a series of independent t-tests are conducted on the F2 mean difference of /au-auN/ and the different HII groups.

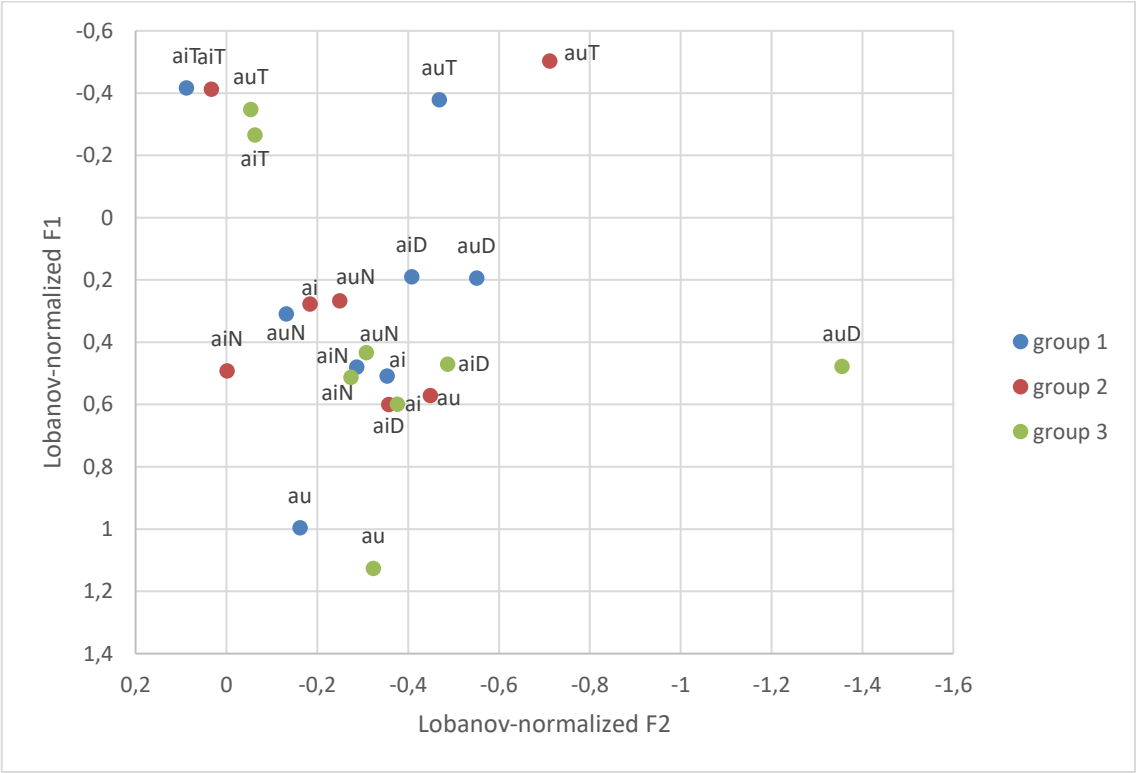

Figure 8.26: Lobanov-normalised means F1/F2 of PRICE and MOUTH diphthongs by HII groups. To recall HII group 3 includes the most engaged speakers with hockey and group 1 HII the least engaged speakers.

Observation of Figure 8.26 shows that groups 1 and 3 are realise /au/ low and group 2 realise /au/ higher in the vowel space. On the F2 dimension, /auN/ has the same F2 value as /au/ for group 1 and the same is true for HII group 3, while HII group 2 exhibits a fronted /auN/ in relation to /au/. HII group 1 and HII group 3 realise /ai/ close to each other, and /aiN/ is slightly fronted in relation to /ai/. On the other hand, HII group 2 behaves differently and exhibits a higher F2 mean difference between /ai/ and /aiN/, /aiN/ having a higher F2 value than /ai/. Moreover, /auT/ is fronted by HII group 3 speakers in comparison with their /au/ allophone, but the voiceless allophone of MOUTH is backed compared to the fronted /au/ allophones of groups 1 and 2. All the nasal allophones of MOUTH are realised in the same quadrant in the vowel space, with group 1's realisation in this context being the most fronted. In comparison with the voiceless environment, the pre-nasal contexts have fronted vowels for groups 1 and 2 but the opposite is true for group 3 speakers, for whom the voiceless context remains the one where the most fronting is found.

Table 8.22 includes the results of the series of independent t-tests which are conducted on the F2 mean difference of /au-auN/ and the different HII groups.

HII group	Environment	Mean	Mean difference /au-auN/
HII group 1	/au/	-0162	-0.0302
	/auN/	-0.132	
HII group 2	/au/	-0.499	-0.199
	/auN/	-0.250	
HII group 3	/au/	-0.324	-0.0159
	/auN/	-0.308	

Table 8.22: F2 mean of the /au/ and /auN/ environments by HII group and calculated mean difference. The absence of asterisks indicates non-significant results.

While an apparent difference can be observed in Figure 8.26 in the realisation of /au/ and /auN/ by HII group 2 speakers, the t-tests in Table 8.22 do not reveal a statistically significant mean F2 difference between these contexts, thus indicating that there is no fronting of /auN/. This lack of statistical significance may be due to the small number of speakers in HII group 2 (N=4).

The MANOVA also reveals a correlation between /ai-aiN/ and HII group. This correlation is first observed in Figure 8.26, and then independent samples t-tests are conducted on the mean F2 difference in these contexts (see Table 8.23).

HII group	Environment	Mean	Mean difference /au-auN/
HII group 1	/ai/	-0.354	-0.0669
	/aiN/	-0.287	
HII group 2	/ai/	-0.184	-0.182
	/aiN/	-0.00164	
HII group 3	/ai/	-0.376	-0.102
	/aiN/	-0.274	

Table 8.23: F2 mean of the /ai/ and /aiN/ environments by HII group and calculated mean difference. The absence of asterisks indicates non-significant results.

Similarly to the results for /au-auN/, it can be seen in Table 8.23 that HII group 2 exhibits the greatest F2 mean difference between /ai/ and /aiN/, but none of the t-tests reveal statistically significant F2 mean differences between these environments. Thus, fronting in pre-nasal environments of PRICE is not confirmed for any of the HII groups. The lack of significant results may be attributed to the low number of speakers in HII group 2 (N=4), which may skew the results.

8.7 Correlation between raising and fronting

Previous studies have shown mixed results as to whether fronting is favoured by the raised or the unraised environment. While Chambers and Hardwick (1986: 33) observed MOUTH fronting to occur more frequently for unraised /au/ than for raised /auT/, Rosenfelder (2007: 21) and Boberg (2010: 149) found that the PRICE diphthong was more fronted in raised environments However, Sadlier-Brown (2012: 539-540) finds moderate negative correlations between the F1 and F2 of /auT/, /aiT/ and /au/, meaning fronter environments are higher on the F1 dimension but she also finds a positive correlation for /ai/ suggesting a fronted /ai/ is lower. She concludes that fronted diphthongs appear to be raised in Vancouver. Pearson correlation coefficients are run on the F1 and F2 of all the examined contexts of PRICE and MOUTH to determine whether fronting and raising are correlated. The results of these analyses are presented in Tables 8.24 and 8.25.

F1/F2 correlation	/ai/	/aiT/	/aiN/	/aiD/
r-value	-0.194	-0.098	-0.146	-0.230
p-value	0.041	0.031	0.004	<0.001

Table 8.24: Pearson correlation coefficients for F1 vs. F2 in PRICE environments

F1/F2 correlation	/au/	/auT/	/auN/	/auD/
r-value	0.310	0.254	0.018	0.158
p-value	0.001	<0.001	0.822	0.590

Table 8.25: Pearson correlation coefficients for F1 vs. F2 in MOUTH environments

The Pearson correlation coefficient shows moderate positive correlations between F1 and F2 for the MOUTH diphthong: /auT/ (r=0.254) and /au/ (r=0.310) and no correlation is found to be statistically significant in the other MOUTH contexts (see Table 8.25). For the PRICE diphthong, /aiD/ (r=-0.230) and /ai/ (r= -0.194) show moderate negative correlations between the F1 and F2 values, and /aiN/ shows a weak correlation in the same direction (r=-0.146). There is no correlation confirmed in the PRICE allophone before a voiceless consonant (Table 8.24). A positive correlation indicates that when the diphthongs are fronter, they are lower, while a negative correlation suggests that when they are fronter, they are higher. These analyses have shown that fronter diphthongs in the /aiN/, /aiD/ and /ai/ environments appear to favour raising, whereas raised /au/ and /auT/ appear to inhibit fronting. No correlation is found for

/aiT/, /auN/ or /auD/[59] environments. These results suggest opposite trends in the PRICE and MOUTH diphthongs.

Having thoroughly analysed the realisation of CR in my corpus of Ontario hockey players' English from the standpoint of both raising and fronting, I will now present a synthesis of my findings and discuss their implications for the four research questions outlined in the introduction with respect to CR:

1. Is CR present in the speech of hockey players?
2. Do hockey players who are more involved in hockey, as represented by a high HII score, exhibit a higher degree of raising?
3. Is raising conditioned by social factors (age, gender, SES)?
4. Is fronting replacing raising or is it an independent change in progress?

Recall that, as the PRICE and MOUTH diphthongs were shown to behave independently, I have chosen to study them separately in this study.

In order to answer the first research question (Is CR present in the speech of hockey players?), I first applied the 60 Hz raising benchmark (Labov et al. 2006) between expected and unexpected contexts of raising to unnormalised mean F1 values. I investigated additional phonological contexts of MOUTH and PRICE to determine whether raising is extending to newer environments that are generally considered to be unexpected raising contexts. For the PRICE diphthong, 15 speakers raise /aiT/, eight of them to the 60 Hz benchmark and seven of them to the 110 Hz benchmark set by Boberg (2008). Three speakers do not raise in this environment, two are very close to the benchmark (56.06 Hz and 56.50 Hz), and one speaker (WG1) is very far from it (5.18 Hz). The voiced context of PRICE is raised by four speakers with a difference of at least 60 Hz, while 14 speakers do not raise in this environment. In the pre-nasal context, two speakers raise, one to the 60 Hz benchmark and the other to the 85 Hz benchmark. For the MOUTH diphthong, 15 speakers raise in pre-voiceless environments, 13 of them exceeding Boberg's (2008) 140 Hz benchmark and two exceed the 60 Hz benchmark. In my corpus, few speakers (only four) have occurrences of the voiced context of MOUTH. And of these speakers, three exhibit raising in this environment. Finally, in the pre-nasal context, nine speakers raise: five according to the 60 Hz benchmark, and four according to Boberg's (2008) threshold.

[59] This is probably due to the small number of speakers who have /auD/ occurrences (N=4).

These results indicate that raising of PRICE principally occurs in the pre-voiceless context (N=15), with much fewer speakers raising in the unexpected raising contexts of PRICE: /aiN/ (N=4) and /aiD/ (N=2). On the other hand, for the MOUTH diphthong, observations based on the raising benchmarks lead to quite different results. This difference is not found in the pre-voiceless environment, where speakers raise in a way that is similar to their realisation of the PRICE diphthong. The MOUTH diphthong in this context is raised by all but one speaker (AF1), and most of the speakers exhibit a F1 mean difference that exceeds the 140 Hz benchmark (N=13). The difference from the PRICE diphthong can be observed in other MOUTH environments. Raising occurs in more phonological environments of MOUTH than PRICE in this study (/auD/ N=3; /auN/ N=9). Furthermore, results of the comparison of the degree of raising of MOUTH and PRICE are consistent with the literature (i.e., greater raising benchmarks), and the greater degrees of raising are found in voiceless contexts, first of MOUTH and then of PRICE. In short, results of the analysis of unnormalised formant data support a strong affirmative response to this research question: CR is indeed highly present in the speech of hockey players, with differences in realisation according to the vowel (MOUTH and PRICE) and the phonological context.

Following analysis of unnormalised formant data for individual speakers, raising was further examined using normalised formant data in terms of statistical differences between the means of two environments. The results of these statistical tests confirm the presence of raising in the pre-voiceless context for PRICE (<.001), as well as in the pre-voiceless and pre-nasal contexts for MOUTH (<.001), and in voiced contexts for MOUTH (0.034). In the same vein, the calculated F1 mean difference between contexts showed that it is in the voiceless environments that both MOUTH and PRICE exhibit the highest degree of difference in F1 values between the expected and unexpected raising context, as suggested by the z-scores values of 1.33 and 0.845. The other MOUTH environments show lower mean F1 differences, with z-score values of 0.674 for /auD/ and 0.593 for /auN/. These statistical analyses strengthen the affirmative response to the first research question regarding the presence of CR in the speech of the hockey players participating in this study. CR was indeed found to be widespread in the data since both diphthongs exhibit raising by most speakers in the expected contexts of raising, similar to the findings of Chambers (1973). My results also show that MOUTH raising is more salient in the data, a finding that aligns with those of Rosenfelder (2007) who explains that CE is not becoming more American, because MOUTH raising differentiates CE from AmE, "possibly to emphasize their Canadian identity" (2007: 280).

The second research question (Do hockey players who are more involved in hockey, as represented by a high HII score, exhibit a higher degree of raising?) is the primary focus of this study. It asks whether hockey players who are more involved in hockey (operationalized as an independent variable in terms of their HII score and the HII group to which they are assigned based on that score) exhibit a greater degree of raising. The results of the statistical analyses show that the factor of HII group is not correlated with the degree of raising calculated as the F1 mean difference between two environments of the MOUTH or PRICE diphthongs. This result calls into question the relevance of HII groups in evaluating the effect of hockey engagement on raising. In the same vein, the investigation of the conditioning effect of the HII score as an independent continuous numerical variable reveals that the MOUTH diphthong is not found to be correlated with speaker's degree of hockey engagement. On the other hand, the HII score is correlated with the F1 mean difference between /ai-aiN/: speakers with a higher HII score, those who are more engaged in hockey than other speakers, are more likely to show a statistically significant mean difference between /ai/ and /aiN/, indicating they raise in PRICE pre-nasal environments. The results also show that speakers with a higher HII score realise /aiT/ and /aiD/ with lower F1 values than those with a lower HII score. Thus, speakers with higher HII scores realise a raised nucleus of the PRICE diphthong in voiceless and voiced environments. To conclude, the analyses have revealed that raising in the MOUTH diphthong is not conditioned by speakers' degree of engagement in hockey. However, raising of the PRICE diphthong is indeed conditioned by the degree of engagement in hockey, with the most engaged speakers being more likely to produce diphthongs with lower F1 values. The speakers raise in the expected raising context of PRICE but they also raise the nucleus of this diphthong in two unexpected contexts: before a voiced obstruent and before a nasal.

As an extension of my inquiry into this research question, I also examined the interaction between the degree of engagement with hockey and fronting. Statistical analyses showed that /auT/ appears to be more fronted in the vowel space by speakers who are more engaged in hockey (those with a higher HII score), but the contrary is true for /auN/, which is less fronted by speakers who are more engaged in the sport. In addition, these statistical analyses reveal a conditioning effect of HII group on fronting of /auN/ in relation to /au/ and /ai/ in relation to /aiN/, but further analyses do not yield conclusive results. Even though HII group 2 behaves differently in their realisation of both PRICE and MOUTH in pre-nasal contexts, the difference between these environments on the F2 dimension is not confirmed statistically. This lack of significance is potentially due to the small number of speakers who constitute the HII group 2.

In short, with the exception of fronting of the voiceless environment of MOUTH, the results do not provide solid evidence of a conditioning effect of hockey engagement on fronting.

The third research question (is raising conditioned by social factors (age, gender, SES)?) asks whether raising correlates with social factors. To recall, multivariate analyses of variance were conducted on the social factors and the F1 mean difference of the examined environments for both MOUTH and PRICE. Only three correlations were found to be statistically significant. The statistical analyses revealed a marginal correlation in expected contexts of raising for both PRICE and MOUTH, between /au-auT/ and gender, between /au-auT/ and the SES score as well as /ai-aiT/ and age*gender. The fact that most correlations with social variables were not statistically significant suggests that raising is a stable phenomenon in the speech of the hockey players participating in this study, thus in CE generally.

Furthermore, the statistically significant effects that were observed of gender on /au-auT/ and of age*gender on /ai-aiT/ suggest that raising has extended to other environments. This is the case for female speakers in MOUTH (/au/) and male speakers over 40 and female speakers under 40 for PRICE (/ai/). This finding corroborates results found by Rouaud (2019), who attests raising in final open syllables of both diphthongs. The statistical significance of the t-tests suggests that raising in the voiceless environment of MOUTH is stable in both gender groups. However, the F1 mean difference between these environments is smaller for female speakers, thus suggesting a tendency for female speakers to raise in open syllables as well as in voiceless contexts, thus reducing the F1 mean difference between these two contexts. Similar results were found for the pair /ai-aiT/ and the correlation of age*gender; while all groups have statistical results, indicating they all raise in this context of PRICE, female speakers over 40 exhibit the greatest F1 mean difference between /ai-aiT/ because they produce lower /ai/ contexts than other groups, suggesting a more conservative pronunciation of /ai/ for female speakers over 40 compared to other groups. While other groups tend to raise in final open syllables of PRICE, female speakers over 40 resist this change.

Moreover, while the results of the MANOVA suggest an interaction between the degree of raising of /au-auT/ and the SES score of the speakers, further investigation by means of t-tests did not replicate a significant correlation to support the hypothesis of SES conditioning of MOUTH raising. Therefore, no robust conclusions can be drawn on these findings, and conditioning of the variable by socioeconomic status of speakers would need be examined in relation to CR in future studies based on larger corpora.

The fourth research question (Is fronting replacing raising or is it an independent change in progress?) first addresses raising and fronting of the PRICE and MOUTH diphthongs as

associated processes, with a view to assessing their diachronic trajectory. The correlations observed in the results between the first and second formants of the different contexts illustrate a difference between the PRICE and MOUTH diphthongs. Statistically significant correlations suggest that raising favours fronting in pre-nasal and pre-voiced contexts of PRICE. On the other hand, raising inhibits fronting for the MOUTH diphthong in open syllables and pre-voiceless contexts. This finding, combined with other observations on fronting in this study, suggests that the MOUTH diphthong has not yet begun to front. Fronting is indeed attested in the corpus, but only in the PRICE diphthong and only in voiceless environments. Findings for PRICE are in alignment with those of studies demonstrating that raising favours fronting (Rosenfelder 2007, Boberg 2010).

The exploration of unnormalised data based on a fronting benchmark of 100 Hz showed that, with the exception of the voiceless environment of PRICE, fronting is far from being present in the speech of the majority of the speakers. Indeed, it is only found in a few instances and only for some speakers. These results are confirmed by the statistical tests conducted on the Lobanov-normalised formant data, which only show a significant difference between F2 values for /aiT/ and /ai/, thus suggesting as well that PRICE fronting is limited to the /aiT/ context.

The second part of the fourth research question regarding fronting as a change in progress implies hypotheses regarding the conditioning of fronting by the social factor of age. For the MOUTH diphthong, analyses reveal statistically significant correlations with age, between /au/ and /auT/ on the one hand, and between /au/ and /auN/ on the other. The analyses demonstrate that younger speakers front MOUTH in the voiceless context. On the other hand, it is backed by older speakers, who appear to be resisting the change. This age correlation does indeed suggest a change in progress observed in apparent time in the direction of more fronting of the MOUTH diphthong. However, the analyses on /au-auN/ show that older speakers produce higher F2 mean differences between /au-auN/ because they front /auN/.

For the PRICE diphthong, the analyses reveal a correlation between age*gender (e.g., gender groups considered within age groups) and F2 difference between the /ai/ and /aiT/ contexts. Further investigation indicates that younger female speakers realise the highest degree of fronting. This finding appears to evidence a sound change in progress, observable in apparent time, in the direction of more fronting of the PRICE vowel, as shown in previous studies (Rosenfelder 2007: 279, Boberg 2010: 228, Sadlier-Brown 2012: 540-541). Fronting of the voiceless allophone of PRICE appears to be led by women, a finding that is consistent with what previous studies have shown. While the MANOVA suggests a correlation between /ai-

aiD/ and gender, and also with the combination of age and gender. Further investigations did not yied statistically significant results and therefore were unconclusive in explaining these correlations, fronting in these environments is not confirmed.

Additional in-depth investigation of the unnormalised data has also shown a certain methodological limitation in applying acoustic benchmark to the calculated differences between two environments of the vowel quality, either F1 or F2. My analysis reveals that speakers cannot be strictly classified into two categories (i.e., raisers and non-raisers), the degree of raising between two environments may be influenced by the fact that a speaker raises in both examined environments, thus reducing the Hz difference between the examined contexts. Indeed, as I defined in the introduction of this chapter, I describe speakers as "hyper-raisers" when they produce a F1 difference of at least 60 Hz between two contexts, meeting the raising benchmark, while they realise both environments quite high in the vowel space, suggesting they have begun to raise in more phonological contexts than the expected ones. On the other hand, some other speakers who also raise in both environments (i.e., expected raised and expected unraised contexts) do not exceed the raising benchmark and I propose to call these speakers "weak raisers". I believe it is not appropriate to say that these speakers do not raise at all while they may be raising in more environments.

To conclude, the findings of this chapter revealed that raising is stable and is not much correlated with social variables in this corpus. With respect to raising, speakers the more engaged with hockey realise lower F1 values of /aiT/, /aiD/ and /aiN/, thus suggesting that PRICE raising is conditioned by the speakers' hockey engagement. On the other hand, the raising of MOUTH is not found to be conditioned by the speakers' hockey engagement. With respect to fronting, the only confirmed result is more fronted /auT/ when speakers are more engaged with hockey, suggesting the conditioning of the prevoiceless context of MOUTH with the speakers' hockey engagement. In addition, the analyses revealed that fronting in prevoiceless environments are likely to be ongoing changes; /aiT/ is fronted by younger female speakers, and /auT/ is fronted by younger speakers. Finally, correlations between raising and fronting confirm that these two phenomena work together.

Chapter 9 The Canadian Vowel Shift

This chapter presents the results on the Canadian Vowel Shift (CVS), which is, to recall, a change in progress occurring in CE which involves the movement of the three lax front vowels, KIT, DRESS, and TRAP, in the acoustic space. The shift is well documented in Canada, and a complete description of the CVS is given in section 2.1.2. However, the literature review reveals that there is no consensus among researchers on the main direction of the shift (lowering with or without retraction), or on the vowels involved, especially the role of the KIT vowel. Thus, this study seeks to increase the understanding of the CVS in Canada by investigating the variety of English spoken by Canadian hockey players. It sets out to answer the following research questions: (1) To what extent is the CVS present in the data?; (2) is the CVS socially embedded?; (3) Is the CVS more advanced in speakers with a higher degree of engagement with hockey, as indicated by a higher HII score (see Chapter 5, section 5.2.2); (4) Do all three short vowels participate in the shift and what is the main direction of the shift?

This section first gives a descriptive overview of the data before presenting the results of the acoustic analysis. I begin with a presentation of the distribution of vowel tokens in the corpus by lexical set and context (Table 9.1) and a discussion of the contexts that have been shown in other studies to influence the CVS.

Vowel	Context	N
KIT	**Mean**	**124**
	_vless stop	50
	_voiced stop	36
	velar_vless fricative	19
	_vless fricative	19
DRESS	**Mean**	**244**
	_vless stop	77
	_voiced stop	39
	_vless fricative	109
	velar _vless stop	19
TRAP	**Mean**	**376**
	_vles stop	229
	_voiced stop	55
	_vless fricative	56
	_voiced affricate	18
	_vless affricate	18

Table 9.1: Distribution of vowel tokens by lexical set and by environment

Table 9.1 presents the number of tokens in the different phonological environments of the three front lax vowels. In the phonological context labels, the underscore represents the place of the vowel in the word and "vless" stands for voiceless. "velar_vless stop" means the vowel is preceded by a velar consonant and followed by a voiceless stop, for instance in the word *kid.*

The number of tokens per context ranges from 18 to 229. The sample for the DRESS vowel includes 244 tokens, that of the KIT vowel consists of 124 tokens, and the TRAP vowel encompasses 376 tokens.

9.1 Environments affecting the CVS

As explained in section 2.1.2, some contexts are known to influence the shift. In order to focus on socially conditioned variation in these vowels, tokens in these environments need to be removed from the data. However, before excluding vowels in these contexts, I reviewed two scatterplots of Lobanov-normalised F1/F2 means by context and by vowel and the mean of all combined contexts (Figures 9.1 and 9.2) to observe the effects of these potentially favouring or disfavouring environments on my data.

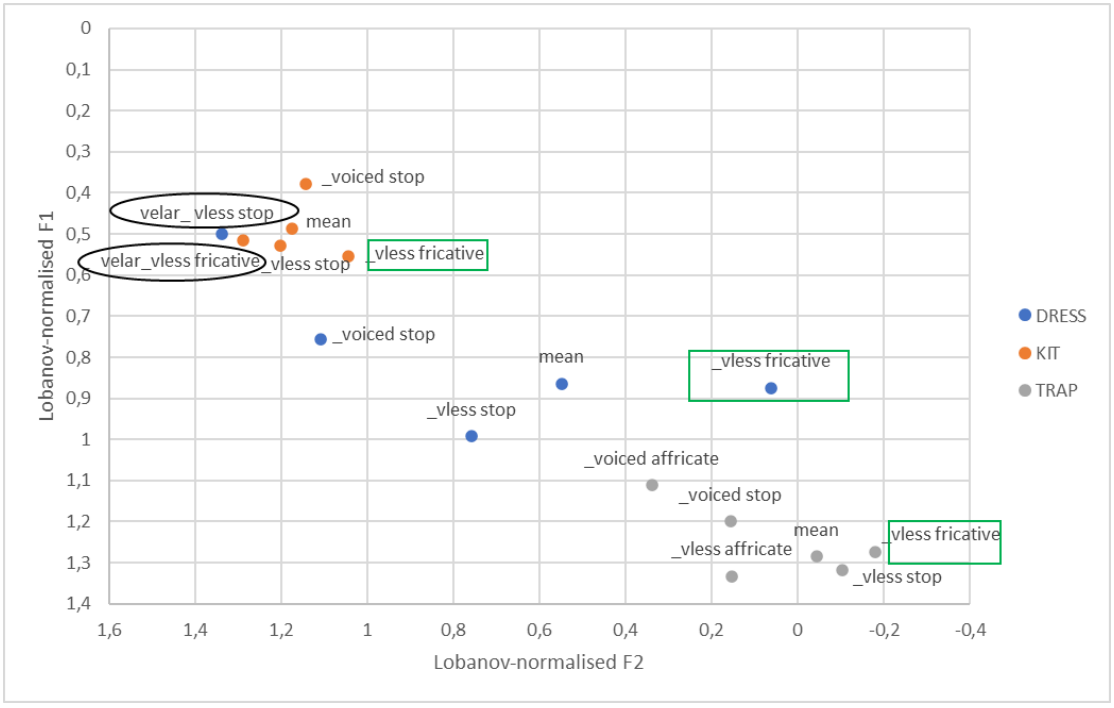

Figure 9.1: Lobanov-normalised F1/F2 means by context and by vowel and the mean of all combined contexts.

Figure 9.1 provides evidence of the effects of preceding velar consonants which disfavour the shift (no retraction) and following voiceless fricative consonants which favour the shift (retraction). Indeed, vowels with a preceding velar, whether followed by a voiceless stop (DRESS vowel) or by a voiceless fricative (KIT vowel), are fronted in comparison with other environments, a pattern which suggests these contexts disfavour the shift. My data align with Boberg's (2019: 106) findings which show that when preceding velar consonants are combined with other environments, their influence is such that they still disfavour the shift (these contexts are circled in black in Figure 9.1). Similarly, following voiceless fricative consonants have been shown to favour the shift and a more advanced shift can be observed in Figure 9.1 (a green box has been drawn around this context) confirming Boberg's observations (2019: 106).

To better observe the effects of influential contexts, in Figure 9.1, I provide another visualisation of the mean of all contexts that neither favour nor disfavour the shift of each vowel, in the same scatterplot as the contexts shown to influence the shift.

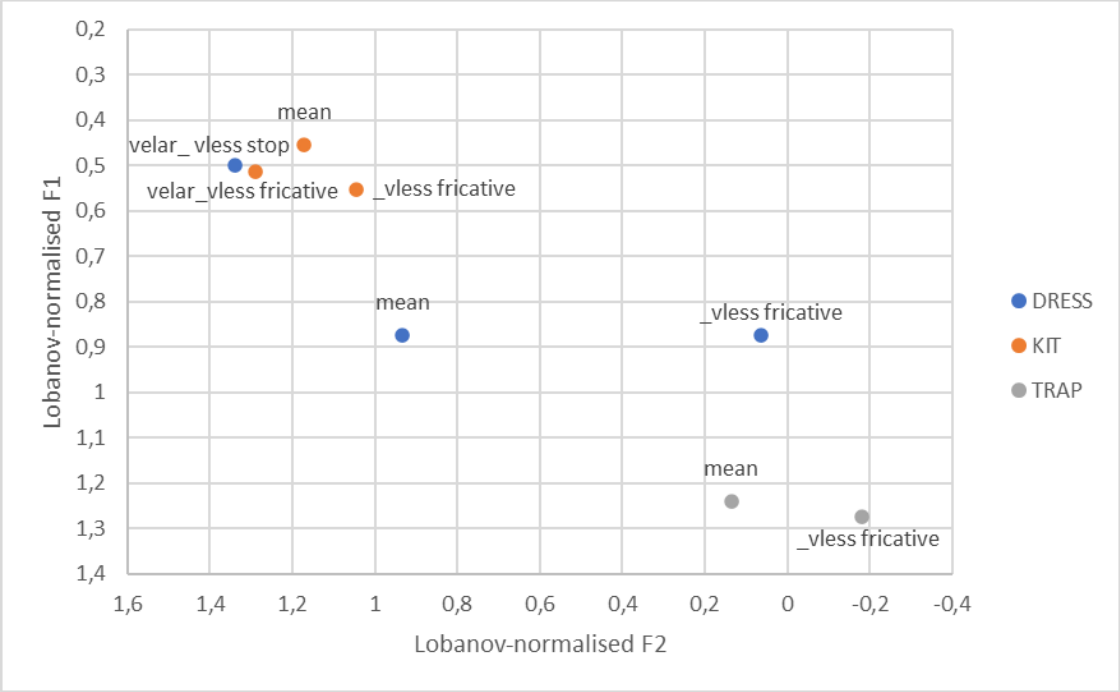

Figure 9.2: Lobanov-normalised F1/F2 mean by context and by vowel. The mean includes all contexts that are not known to favour or disfavour the shift, i.e., all contexts with the exception of preceding velar and following voiceless fricative.

Figure 9.2 shows that KIT with a following voiceless fricative is retracted in relation to the mean, while in the environment with a preceding velar and a following voiceless consonant KIT is slightly fronted in relation to the mean. For the DRESS vowel, there is a clear retraction in the context of a voiceless fricative, but the preceding velar followed by a voiceless fricative is not retracted in relation to the DRESS mean. For the TRAP vowel, the vowel followed by a voiceless fricative goes in the same direction as KIT and DRESS vowels, exhibiting retraction. Figure 9.2 confirms the influencing effects of a preceding velar and a following voiceless fricative. A following voiceless fricative favours retraction of the vowels, while a preceding velar consonant inhibits retraction of the vowels. Based on these data, in order to eliminate such known phonotactic effects on the realisation of vowels, these known influencing contexts are henceforth excluded from the analysis.

9.2 Individual speakers' realisation of CVS: unnormalised data

This section is based on unnormalised vowel formant data displayed in scatterplots in order to observe individual speakers' realisation of the vowels involved in the CVS. The use of raw data, i.e., vowel formant measurements that have not been normalised for interspeaker comparison, allows for the observation of the benchmarks of the shift established by Labov et al. (2006). These benchmarks are imposed on the vowel space in Figures 9.3 to 9.21 (horizontal line for F1 DRESS>650 Hz and vertical line for F2 TRAP<1825 Hz) to identify shifted vowels.

From this point forward, a shifted DRESS vowel is defined as one in which the value of F1 is greater than 650 Hz, and a shifted TRAP vowel is defined as one in which the value of F2 is less than 1825 Hz.

In addition, I propose to offer a discussion on the movements in different directions of DRESS and TRAP, commenting on DRESS retraction (F2<1825 Hz) and TRAP lowering (F1>800 Hz) if there are some noteworthy movements in the realisations of the speakers of the corpus. To observe the movements of the KIT vowel, a heuristic method is used whereby the lowering of KIT is noted when the F1 exceeds 540 Hz and KIT is considered retracted when the vowel's second formant is under the 1825 Hz benchmark.

The individual scatterplots are presented by gender (female speakers first), and within the gender group by age (with younger speakers first), and in an ascending order according to the HII group (group 1 to group 3, from speakers the least engaged in hockey to those most engaged in the sport).

Younger female speakers (under 40)

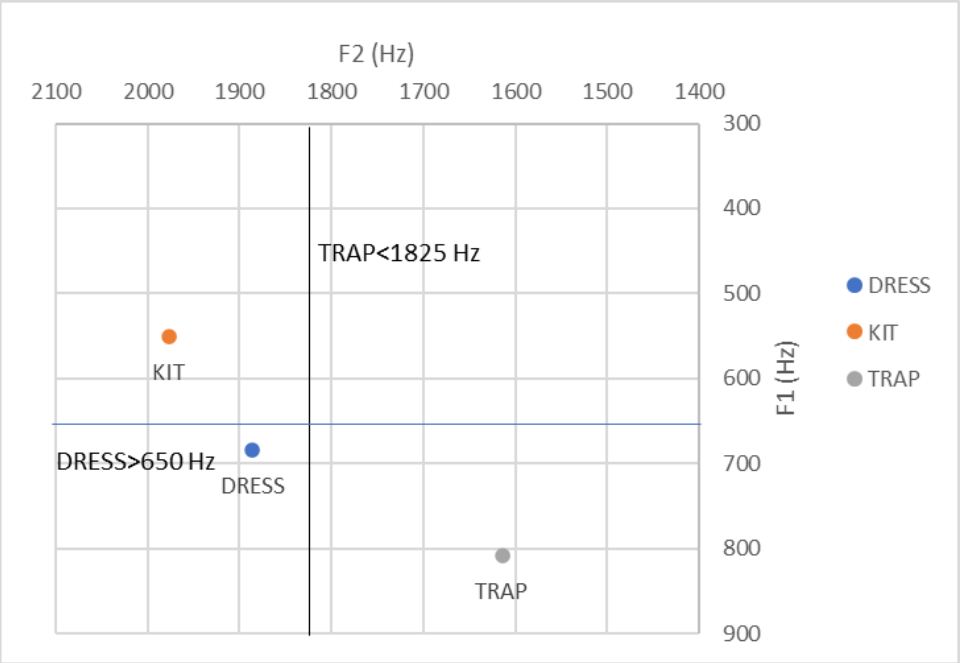

Figure 9.3: Raw F1 and F2 means by vowel produced by AF1, a younger female speaker aged 24, HII score of 8 (group 2).

Figure 9.3 shows that the F1 of DRESS is higher than 650 Hz so AF1 realises a shifted DRESS vowel and the F2 of TRAP is lower than 1825 Hz, so she also exhibits a shifted TRAP vowel. Figure 9.3 also indicates that her TRAP vowel is lowered (F1>800 Hz) but AF1 does not exhibit retracted DRESS or KIT vowels as their average F2 values are not lower than the

1825 Hz benchmark. Her KIT vowel is lowered with an F1 value of 550.8 Hz, below the 800 Hz benchmark described above.

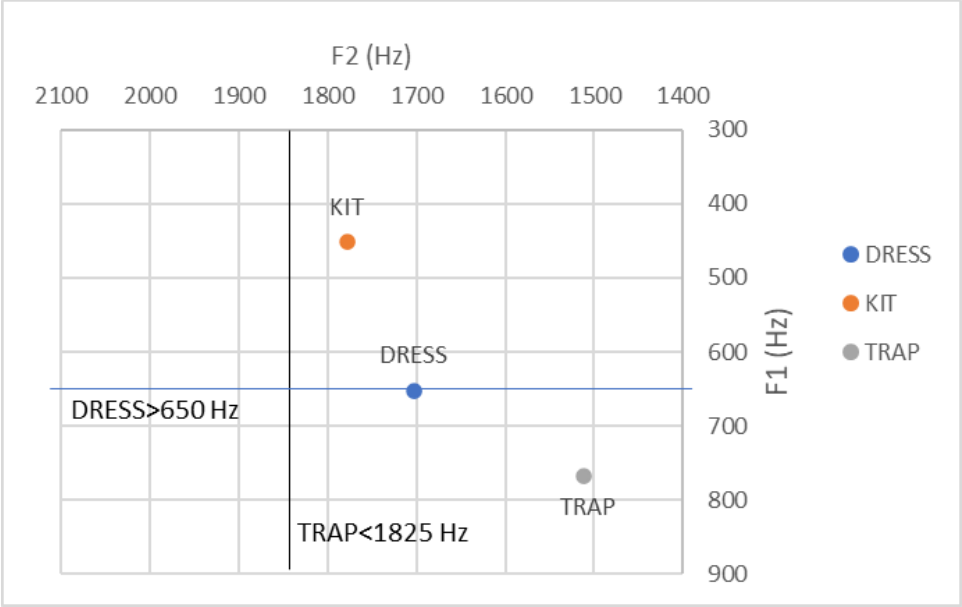

Figure 9.4: Raw F1 and F2 means by vowel produced by HS1, a younger female speaker aged 22, HII score of 9 (group 2).

Figure 9.4 provides evidence that HS1 realises DRESS very close to the benchmark (652 Hz) but it is shifted according to Labov et al.'s (2006) benchmark. There is also retraction of the DRESS vowel on the F2 dimension (F2<1825 Hz). HS1 also realises a retracted TRAP vowel that is shifted (F2<1825 Hz). With an F1 value of 452.3 Hz, her KIT vowel is not lowered according to the F1>540 Hz benchmark, but it is retracted (F2<1825 Hz).

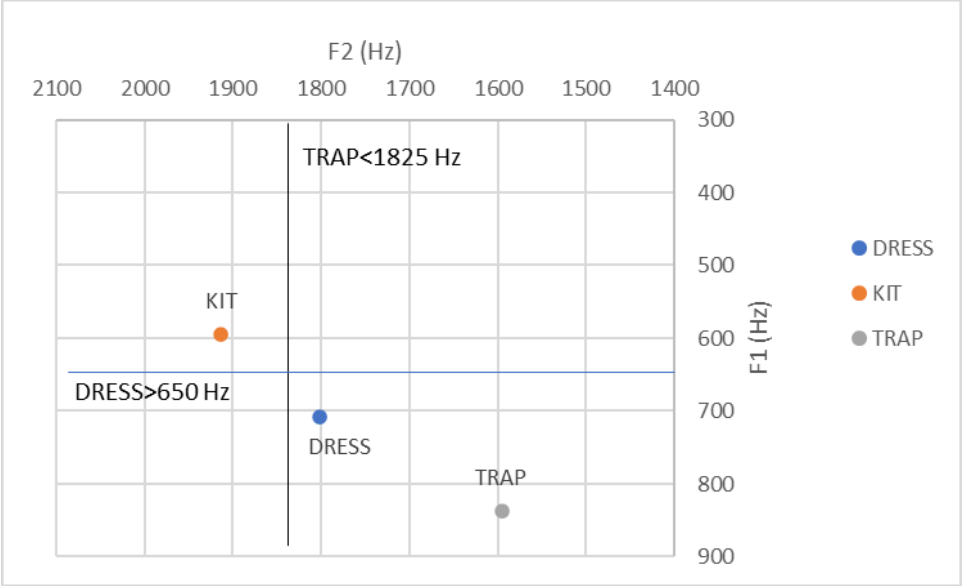

Figure 9.5: Raw F1 and F2 means by vowel produced by LS1, a younger female speaker aged 22, HII score of 16 (group 3).

Figure 9.5 shows that LS1 realises DRESS lowered in the vowel space with an F1 that exceeds the 650 Hz benchmark for F1, so LS1 shifts DRESS. She also has a shifted TRAP vowel since her realisation of the vowel is retracted with an F2 value below the 1825 Hz benchmark. Her TRAP vowel is also lowered (F1>800 Hz) and her DRESS vowel is slightly retracted (F2<1825 Hz). With an F1 value of 594.4, her KIT vowel is lowered (F1>540 Hz) but it is not retracted, as her mean F2 of this vowel exceeds the 1825 Hz benchmark.

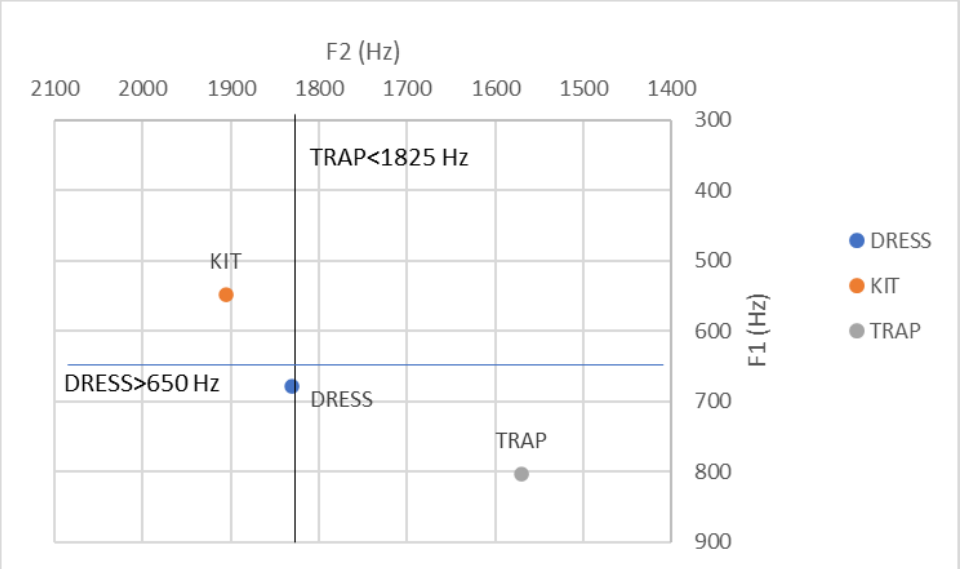

Figure 9.6: Raw F1 and F2 means by vowel produced by NR1, a younger female speaker aged 24, HII score of 16 (group 3).

Figure 9.6 shows that NR1 realises DRESS lower in the vowel space, with an F1 value greater than the 650 Hz, indicating that NR1 shifts the DRESS vowel. Similarly, she exhibits a retracted TRAP vowel which is below the 1825 Hz benchmark, thus indicating TRAP-shifting. In addition, NR1 realises a slightly lowered TRAP vowel with a mean F1 of 803.2Hz, above the 800 Hz benchmark. Neither KIT or DRESS are retracted by NR1 as their F2 values exceed the 1825 Hz benchmark, and KIT is slightly lowered, with a mean value of 548.3 that exceeds by only a few Hertz the lowering benchmark 540 Hz.

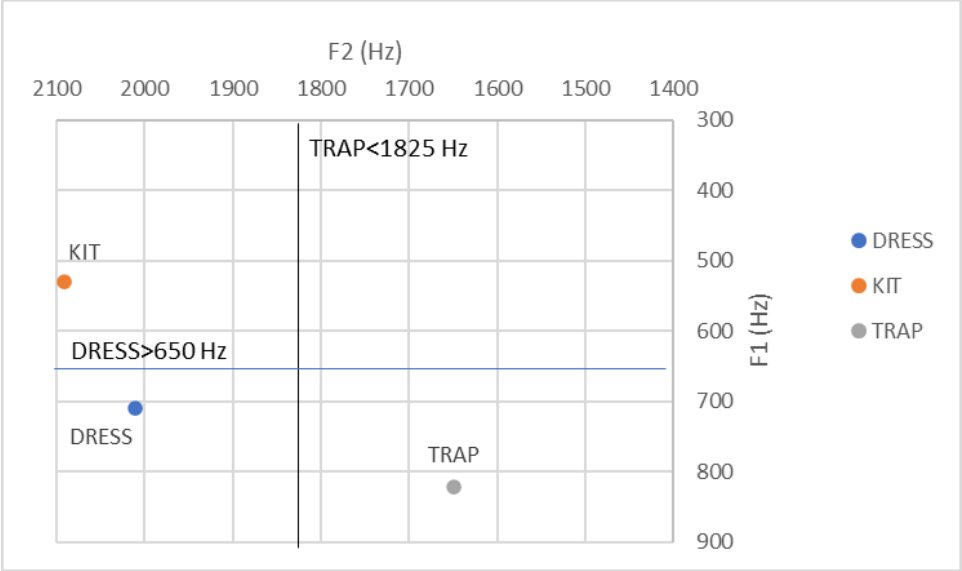

Figure 9.7: Raw F1 and F2 means by vowel produced by RS1, a younger female speaker aged 23, HII score of 17 (group 3).

As can be observed in Figure 9.7, RS1 produces DRESS with an F1 value of 709.7 Hz that exceeds 650 Hz benchmark for shifting. She also realises TRAP with an F2 value of 1649.6 Hz which falls below the 1825 Hz threshold, thus showing shifting of TRAP by RS1. RS1's realisation of both DRESS and KIT appear to lack retraction, since they are realised in the front of the vowel space, well above the retraction benchmark of F2<1825 Hz. With a mean F1 of 530.8 Hz falling below the F1>540 Hz benchmark, her KIT vowel is not lowered.

Older female speakers (over 40)

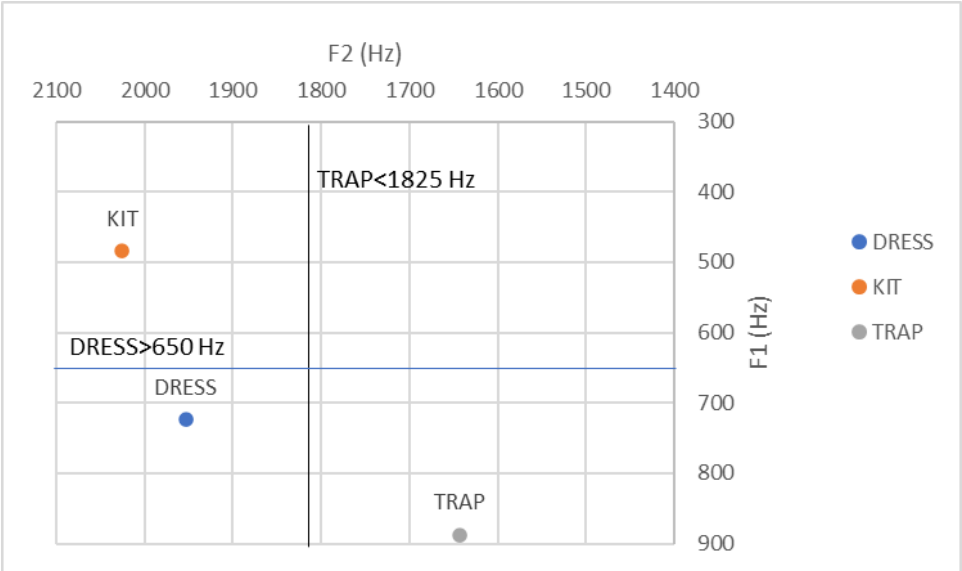

Figure 9.8: Raw F1 and F2 means by vowel produced by KB1, an older female speaker aged 62, HII score of 3 (group 1).

KB1 produces a lowered DRESS vowel with an F1 value of 724.2 Hz which exceeds the F>650 Hz threshold. In addition, she retracts TRAP under the F2<1825 Hz benchmark, thus

shifting this vowel as well. Her TRAP vowel, with a mean F1 of 887.6 Hz can also be said to be shifted, based on the F1>800 Hz benchmark. Her DRESS vowel shows no retraction and neither does her KIT vowel. With a mean F1 of 484.4 Hz, her KIT vowel does not meet the F<540Hz threshold for determination of lowering (Figure 9.8).

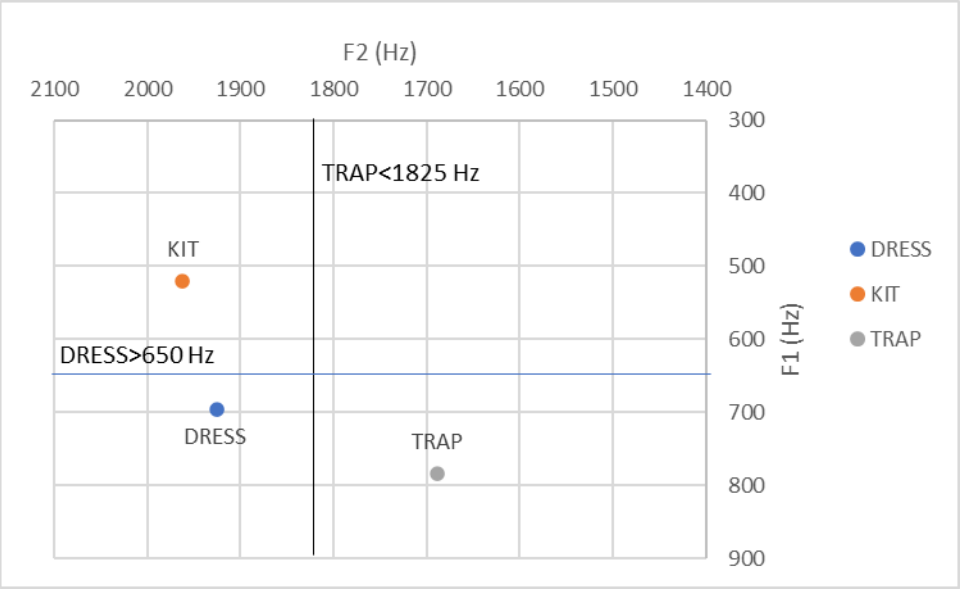

Figure 9.9: Raw F1 and F2 means by vowel produced by SP1, an older female speaker aged 60, HII score of 4 (group 1).

As can be observed in Figure 9.9, SP1 realises DRESS below 650 Hz on the F1 dimension, so she shifts this vowel. She also exhibits a retracted TRAP vowel, under the 1825 Hz benchmark, indicating that she shifts this vowel as well. Neither DRESS nor KIT are retracted below the F2<1825 benchmark, and KIT, with a mean F1 of 520.4 Hz, does not meet the F1>540 Hz lowering benchmark.

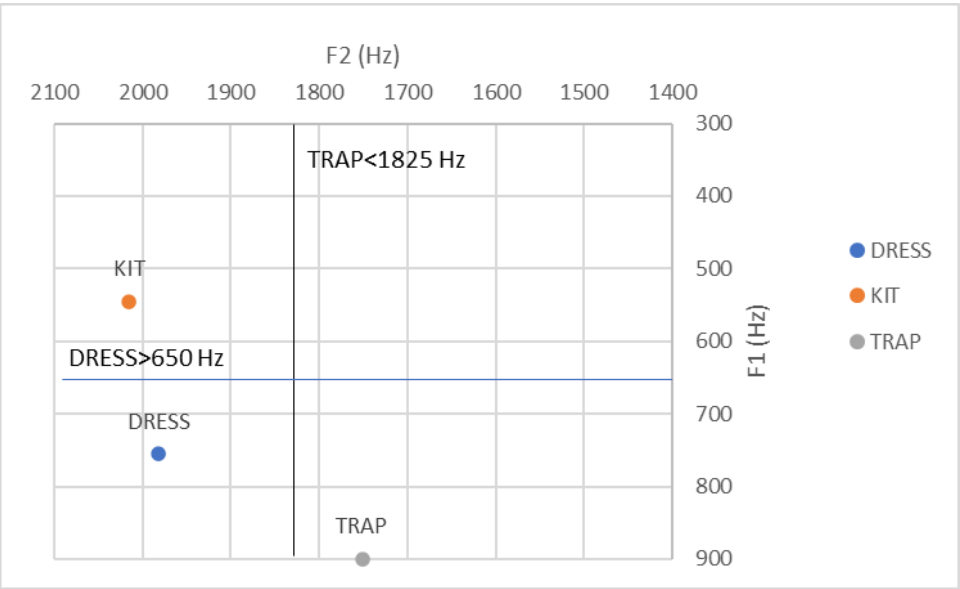

Figure 9.10**:** Raw F1 and F2 means by vowel produced by LS2, an older female speaker aged 62, HII score of 5 (group 1).

In Figure 9.10, it can be observed that LS2 realises the DRESS vowel above the F1>650 Hz lowering benchmark, and the TRAP vowel below the F2<1825 Hz retraction threshold, so both of these vowels are shifted. In addition, the DRESS vowel is realised in the front of the vowel space by LS2 and is therefore not retracted. With a mean F1 of 899.7 Hz, her TRAP vowel is very lowered in relation to the F1>800 Hz benchmark. Her KIT vowel is not retracted, with a mean F2 of 2015.6 Hz that falls well above the F2<1825Hz threshold but, with a mean F1 of 545 Hz, the vowel is slightly lowered in relation to the F1>540 Hz benchmark, thus showing shifting on this vertical dimension.

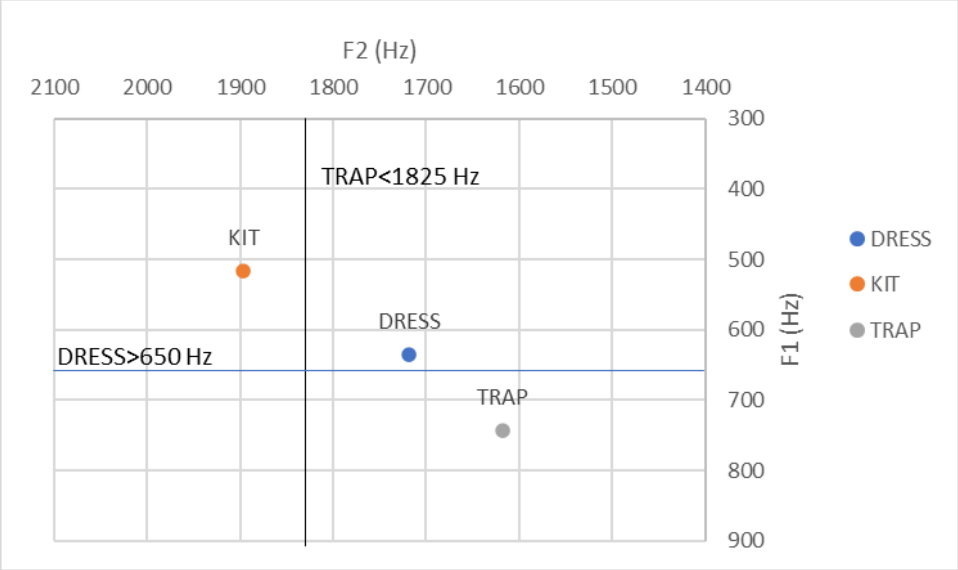

Figure 9.11: Raw F1 and F2 means by vowel produced by KG1, an older female speaker aged 60, HII score of 15 (group 3).

Figure 9.11 shows that KG1's DRESS vowel, with a mean F1 of 635.2 Hz, does not meet the F1>650 Hz benchmark for lowering, and therefore it is not considered to be shifted on the F1 dimension. She is the only female speaker who does not shift the DRESS vowel. She does, however, retract TRAP under the 1825 Hz benchmark on the F2 dimension, indicating that she shifts TRAP. Furthermore, DRESS is retracted well below the F2<1825 Hz benchmark. KG1's KIT vowel, with a mean F1 of 516 Hz and a mean F2 of 1897 Hz, does not meet the F1>540Hz for lowering or the F2<1825 Hz for retraction.

Younger male speakers (under 40)

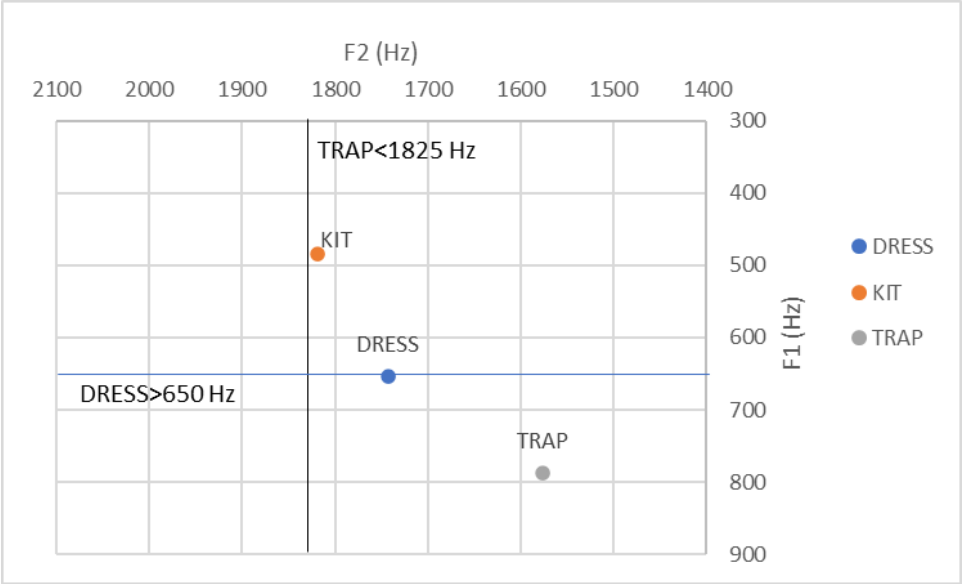

Figure 9.12: Raw F1 and F2 means by vowel produced by JL1, a younger male speaker aged 34, HII score of 4 (group 1).

Figure 9.12 shows that with a mean F1 of 653 Hz, JL1 barely reaches the F1>650 Hz benchmark for shifting of the DRESS vowel. His TRAP vowel is retracted and is therefore shifted according to the benchmark applied here (F2<1825 Hz). Figure 9.12 indicates that his DRESS and KIT vowels are also retracted based on the F2<1825 Hz benchmark, but his KIT vowel is not lowered as the F1 value does not meet the F1<540 Hz threshold.

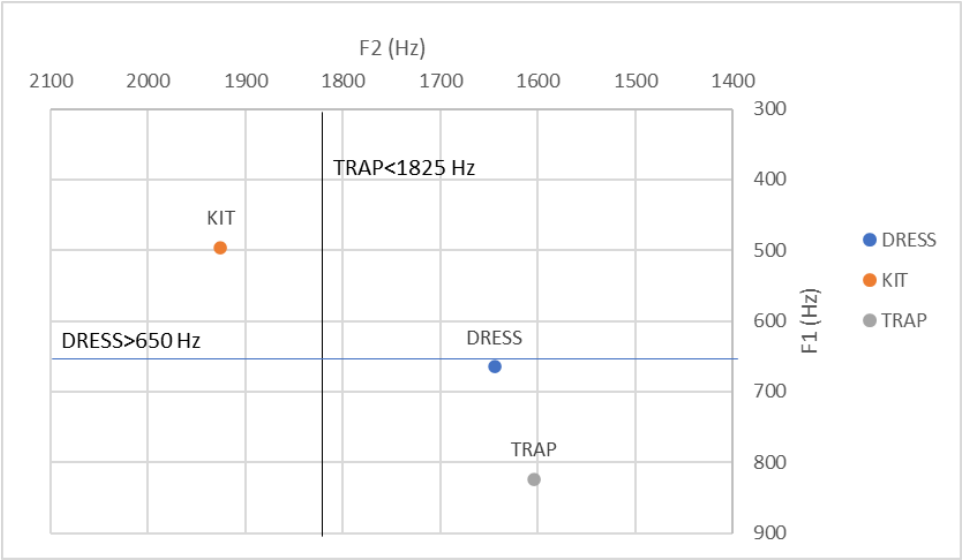

Figure 9.13: Raw F1 and F2 means by vowel by AS1, a younger male speaker aged 27, HII score of 12 (group 3).

Figure 9.13 indicates that, with an F1 of 664.7 Hz, DRESS is slightly lowered in relation to the shifting benchmark of F1>650 Hz for AS1, and TRAP is retracted with a F2 value well below the F2<1825 Hz benchmark, so both of these vowels are shifted. The TRAP vowel is

also very lowered in relation to the F1>800 Hz benchmark, and AS1's DRESS vowel is retracted below the F2<1825 Hz. There is no noticeable shifting of the KIT vowel, which is neither lowered nor retracted in relation to the benchmarks (F1= 496.2 Hz, F2 = 1925.4 Hz).

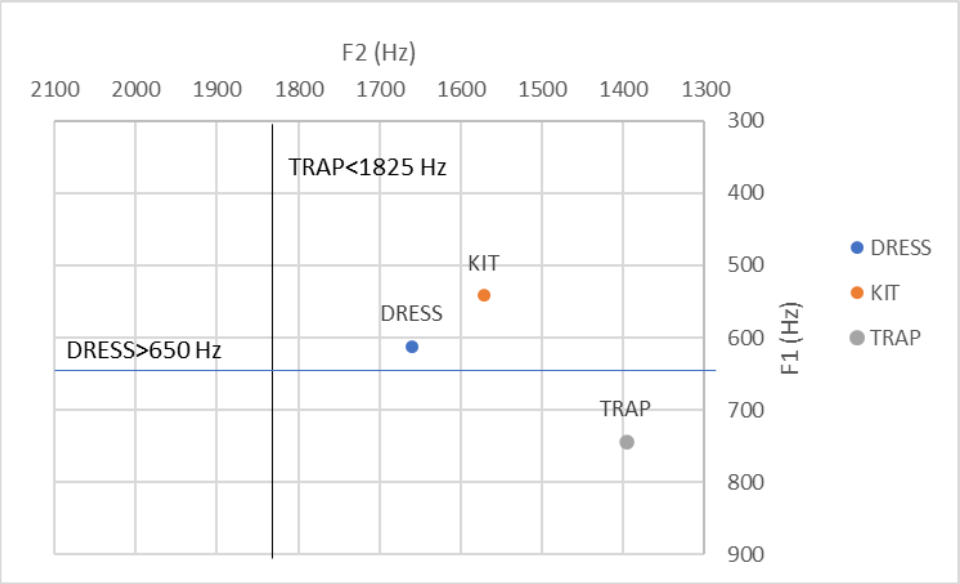

Figure 9.14**:** Raw F1 and F2 means by vowel by CG1, a younger male speaker aged 31, HII score of 13 (group 3).

Figure 9.14 shows that, with a mean F1 for DRESS of 612 Hz, CG1 does not meet the F1>650 Hz threshold for shifting of this vowel but shows considerable retraction of the TRAP vowel and therefore shifts TRAP[60]. His DRESS vowel is clearly retracted below the F2<1825 Hz benchmark, and his KIT vowel is also retracted, even more than his DRESS vowel. Moreover, CG1 realises a lowered KIT vowel with a mean F1 of 541.3 Hz, that slightly exceeds the F1>540 Hz benchmark for shifting of the vowel on this dimension.

[60] In Figure 9.14, the scale of the y-axis had to be changed from 1400 to 1300 to visualize the TRAP vowel of CG1.

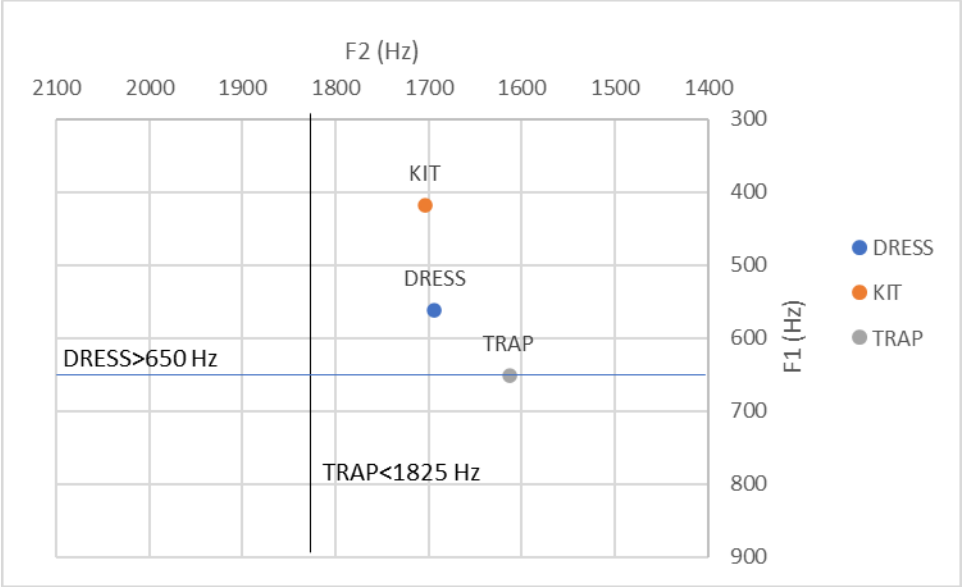

Figure 9.15**:** Raw F1 and F2 means by vowel by WW1, a younger male speaker aged 39, HII score of 15 (group 3).

Figure 9.15 shows that WW1 does not lower the DRESS vowel under the 650 Hz benchmark, so he does not shift this vowel. However, WW1 retracts TRAP under the 1825 Hz benchmark, thus shifting the TRAP vowel. WW1 produces both KIT and DRESS vowels retracted on the F2 dimension, below the F2<1825 Hz benchmark. His KIT vowel, with a mean F1 of 418.3 Hz, does not meet the F1<540 Hz threshold for lowering. In addition, his TRAP vowel has a mean F1 value that is far below the F1<800Hz benchmark for lowering.

Older male speakers (over 40)

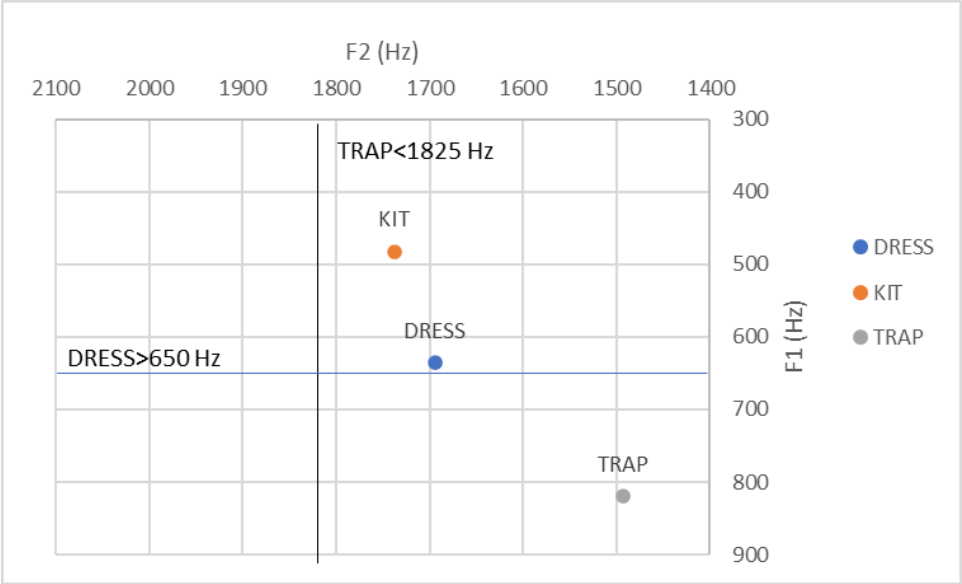

Figure 9.16**:** Raw F1 and F2 means by vowel by AV1, an older male speaker aged 59, HII score of 1 (group 1).

Figure 9.16 indicates that, with a mean F1 of 635.5 for DRESS, AV1 approaches but does not reach the F1>640 lowering benchmark, so he does not shift this vowel. However, his TRAP vowel is retracted well under the F2<1825 Hz benchmark, thus suggesting that AV1 shifts TRAP. His TRAP vowel, with a mean F1 of 819.4 Hz, is also lowered based on the F1>800 Hz benchmark and his DRESS vowel is retracted below the F2<1825 Hz threshold. Similarly, his KIT vowel is retracted below the F2<1825 Hz benchmark, but with a mean F1 of 482.8 Hz, it is not lowered based on the F1<540 Hz reference point.

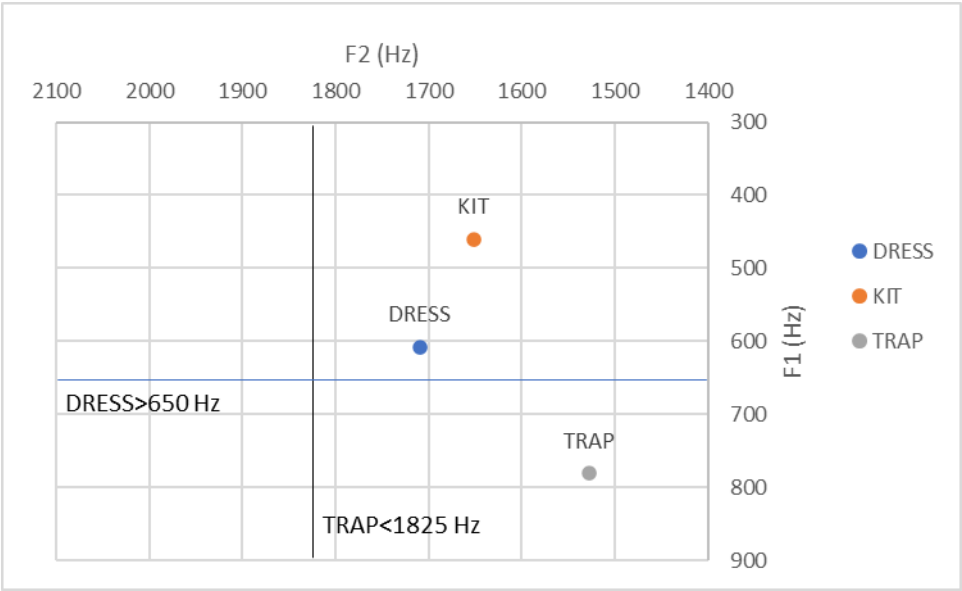

Figure 9.17**:** Raw F1 and F2 means by vowel by SH1, an older male speaker aged 67, HII score of 1 (group 1).

Figure 9.17 shows that, with a mean F1 of 607.4 Hz, SH1 does not realise DRESS over the F1>650 Hz lowering threshold, and therefore does not shift the DRESS vowel. However, he shifts the TRAP vowel since the vowel is well below the F2<1825 Hz benchmark. Likewise, both KIT and DRESS are retracted by SH1 in relation to this benchmark, and his KIT vowel is even more retracted than the DRESS vowel. Furthermore, his KIT vowel, with a mean F1 of 460.3 Hz, is not lowered on the F1 dimension in relation to the F1>540 Hz benchmark.

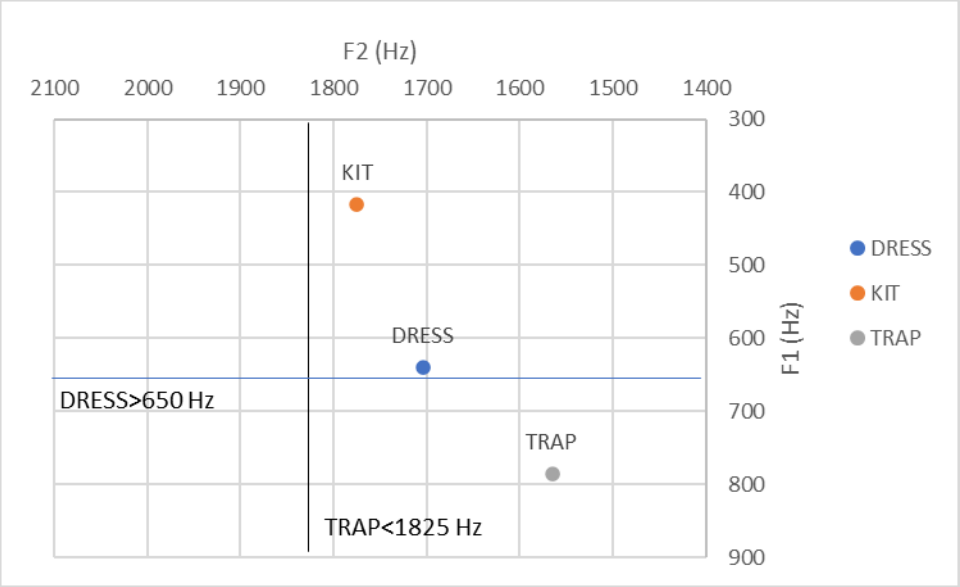

Figure 9.18**:** Raw F1 and F2 means by vowel by WG1, an older male speaker aged 61, HII score of 3 (group 1).

As can be seen in Figure 9.18, WG1's DRESS vowel, with a mean F1 of 640.2 Hz, does not meet the F1>650 Hz lowering benchmark, so this speaker does not shift the DRESS vowel. However, there is considerable retraction of TRAP, showing that this vowel is shifted in terms of the F2<1825 Hz benchmark. Both KIT and DRESS vowels also exhibit retraction in relation to this same reference point. WFG's KIT vowel, with a mean F1 of 417.4 Hz, is well below the F1>540 Hz minimum for lowering, so KIT is not shifted on this vertical dimension.

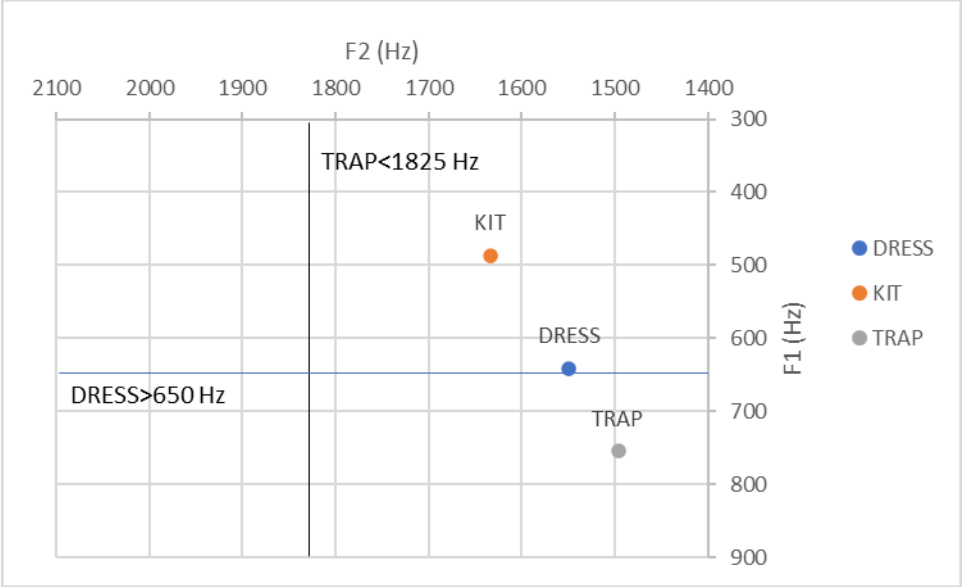

Figure 9.19**:** Raw F1 and F2 means by vowel by TM1, an older male speaker aged 64, HII score of 7 (group 2).

Figure 9.19 shows that for TM1 the DRESS vowel, with a mean F1 of 640.7 Hz does not meet the F1<650 Hz benchmark for lowering. However, he exhibits a TRAP vowel which is very retracted (F2=1496 Hz) and therefore is shifted under the F2<1825 Hz benchmark, thus showing shifting on this dimension. KIT and DRESS are also retracted by TM1 (F2<1825 Hz). His KIT vowel, with a mean F1 of F1=486.5 Hz, is not lowered to the F1>540 Hz reference point for shifting.

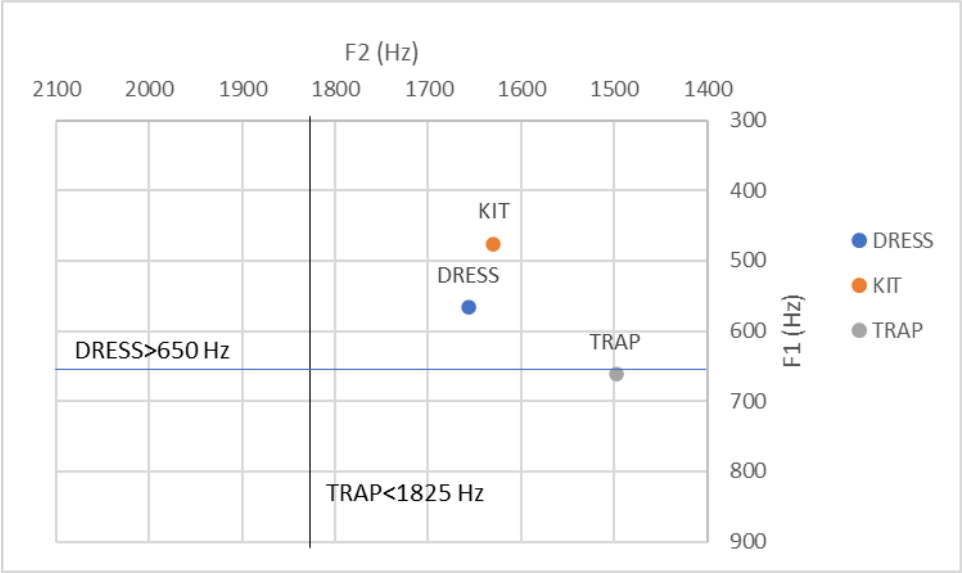

Figure 9.20**:** Raw F1 and F2 means by vowel by KE1, an older male speaker aged 68, HII score of 10 (group 2).

The data in Figure 9.20 show that KE1's realisation of the DRESS vowel, with a mean F1 of 566.8 Hz is not shifted in terms of the F1>650 Hz benchmark for lowering, but this vowel is retracted below the F2<1825 Hz threshold. The TRAP vowel is considerably shifted in

relation to the 1825 Hz benchmark on the F2 dimension, but it is not lowered in terms of the F1<800 Hz threshold. The KIT vowel is more retracted than the DRESS vowel but, with a mean F1 of 476 Hz, it is not lowered to the F1>540 Hz benchmark.

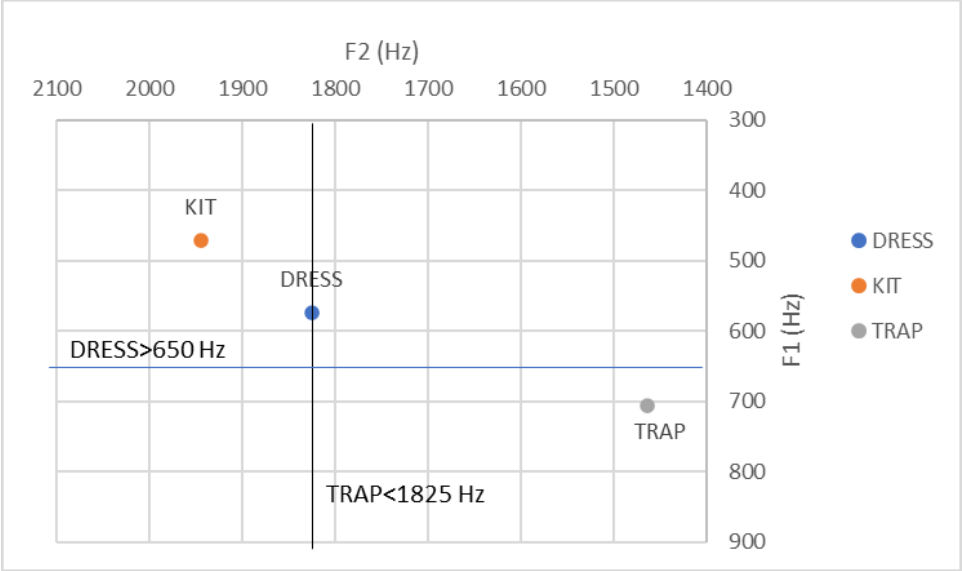

Figure 9.21**:** Raw F1 and F2 means by vowel by MC1, an older male speaker aged 46, HII score of 14 (group 3).

Figure 9.21 shows that MC1's DRESS vowel, with a mean F1 of 573.5 Hertz, is not lowered in terms of the F1>650 Hz benchmark, but with a mean F2 of 1824.2 Hz, just below the F2<1825 Hz retraction benchmark, it shows shifting on the front-back dimension. However, MC1 realises a shifted TRAP vowel which is considerably retracted on the F2 dimension (F2=1463.5 Hz). His KIT vowel is not noticeably lowered in relation to the F1>540Hz benchmark (F1=471.3 Hz) or retracted with respect to the F2<1825 Hz threshold (F2=1944 Hz).

Observation of the above scatterplots provides some preliminary evidence of trends in shifted vowels for individual speakers based on the acoustic benchmarks (Labov et al. 2006) for determining presence of the CVS. The KIT vowel is retracted by nine speakers and it is lowered by five speakers, so this vowel exhibits some movement. DRESS is lowered by 10 speakers out of 19, so there is considerable variation in shifting on the F1 dimension for this vowel. Moreover, the DRESS vowel exhibits some movement on the F2 dimension as well. TRAP is shifted by all speakers but there is individual variation on the F1 dimension, with lowering of the vowel for some speakers but not others. To take closer look at these data, I summarize the unnormalised mean F1 and F2 values of the DRESS, TRAP and KIT vowels for each speaker in Tables 9.2, 9.3 and 9.4.

Speaker	Gender	Mean raw F1	Mean raw F2
WW1	Male	563	1693,8
KE1	Male	566,8	1657
MC1	Male	573,5	1824,3
SH1	Male	607,4	1709,4
CG1	Male	612	1659,8
KG1	Female	635,2	1718,5
AV1	Male	635,5	1693,8
WG1	Male	640,2	1703,8
TM1	Male	640,7	1549
HS1	Female	**652**	1702,6
JL1	Male	**653,7**	1742,5
AS1	Male	**664,7**	1644,2
NR1	Female	**679**	1831,2
AF1	Female	**684,7**	1886
SP1	Female	**696,5**	1925
LS1	Female	**708,7**	1802
RS1	Female	**709,7**	2011
KB1	Female	**724,2**	1953,3
LS2	Female	**755**	1982,2

Table 9.2**:** Unnormalised mean of F1 and F2 of the DRESS vowel by speaker. F1 values in bold meet the benchmark (F1>650 Hz) (Labov et al. 2006), underlined F2 values meet the retraction benchmark (F2<1825 Hz).

As can be observed in Table 9.2, 10 speakers shift the DRESS vowel according to the F1>650 Hz benchmark. Among these, all female speakers except KG1, and two younger male speakers shift. In contrast, eight male speakers do not participate in the shift of DRESS. Regarding movement on the F2 dimension of the DRESS vowel, as was seen in the analysis of the individual scatterplots, 13 speakers exhibit some retraction of the DRESS vowel (F2<1825 Hz). This sample includes all the male speakers (N=10) and three female speakers.

Speaker	Gender	Mean raw F1	Mean raw F2
LS2	Female	899,7	**1751,5**
KB1	Female	887,6	**1642,6**
LS1	Female	836,9	**1595,8**
AS1	Male	823,8	**1603,9**
RS1	Female	822,7	**1649,6**
AV1	Male	819,4	**1493,4**
AF1	Female	808,3	**1614,2**
NR1	Female	803,2	**1569,7**
JL1	Male	787,6	**1576,3**
WG1	Male	786,2	**1565,0**
SP1	Female	784,5	**1688,5**
SH1	Male	780,8	**1527,1**
HS1	Female	768,4	**1511,2**
TM1	Male	753,9	**1496,0**
CG1	Male	743,9	**1396,4**
KG1	Female	743,0	**1617,3**
MC1	Male	706,1	**1463,5**
KE1	Male	661,2	**1498,2**
WW1	Male	651,9	**1613,4**

Table 9.3: Unnormalised mean of F1 and F2 of the TRAP vowel by speaker. F2 values in bold meet the benchmark (F2<1825 Hz) (Labov et al. 2006). Values of F1>800 Hz are underlined.

Table 9.3 shows that all speakers meet the established benchmark and exhibit a shifted TRAP vowel (F2<1825 Hz). Furthermore, eight speakers including six female speakers produce lowered TRAP vowels (F1>800 Hz).

Speaker	Gender	Mean raw F1	Mean raw F2
CG1	Male	**541,3**	1570,8
TM1	Male	486,5	1633,8
KE1	Male	476,0	1629,6
SH1	Male	460,3	1651,5
AV1	Male	482,8	1737,0
WW1	Male	418,3	1703,8
HS1	Female	452,3	1778,3
WG1	Male	417,4	1774,8
JL1	Male	484,6	1818,6
KG1	Female	516,2	1897,0
NR1	Female	**548,3**	1904,7
LS1	Female	**594,4**	1913,0
AS1	Male	496,2	1925,4
MC1	Male	471,3	1944,0
SP1	Female	520,4	1962,2
AF1	Female	**550,8**	1977,0
LS2	Female	**545,0**	2015,6
KB1	Female	484,4	2025,4
RS1	Female	530,8	2091,6

Table 9.4: Unnormalised mean of F1 and F2 of the KIT vowel by speaker. F1 values in bold are higher than 540 Hz. F2 values lower than 1825 Hz are underlined.

For the KIT vowel, some retraction and lowering trends can be observed in Table 9.4. The KIT vowel is retracted by nine speakers (F2<1825 Hz), all male speakers except one female speaker (HS1). Additionally, five speakers produce a lowered KIT vowel (F1>540 Hz), four female speakers and CG1, a younger male speaker.

Leaders of the shift in terms of retraction and lowering

Observation of unnormalised data provides evidence that the DRESS vowel is most retracted by TM1, an older male speaker (F2=1549 Hz), and that the TRAP vowel is most retracted by CG1, a younger male speaker (F2=1396 Hz) who also shows the most retraction in the KIT vowel (F2=1570 Hz). Furthermore, three male speakers (KE1, SH1 and CG1) have more retracted KIT vowels than DRESS vowels, respectively (KIT (F2): 1629 Hz, 1651 Hz and 1570 Hz) and (DRESS (F2): 1657 Hz, 1709 Hz and 1659 Hz). These observations show that the leaders of retraction are male speakers. The DRESS vowel is most lowered by LS2, an older female speaker (F1=755 Hz) and she also realises the most lowered TRAP vowel (F1=899 Hz). The KIT vowel is most lowered by LS1, a younger female speaker (F1=550 Hz). The leaders of lowering are female speakers. One might ask whether the leaders of retraction and lowering are the same speakers as those identified through observation of the unnormalised data for individual speakers. In order to address this question, Figure 9.22 provides a visualisation of the normalised mean F1 and F2 values for each speaker.

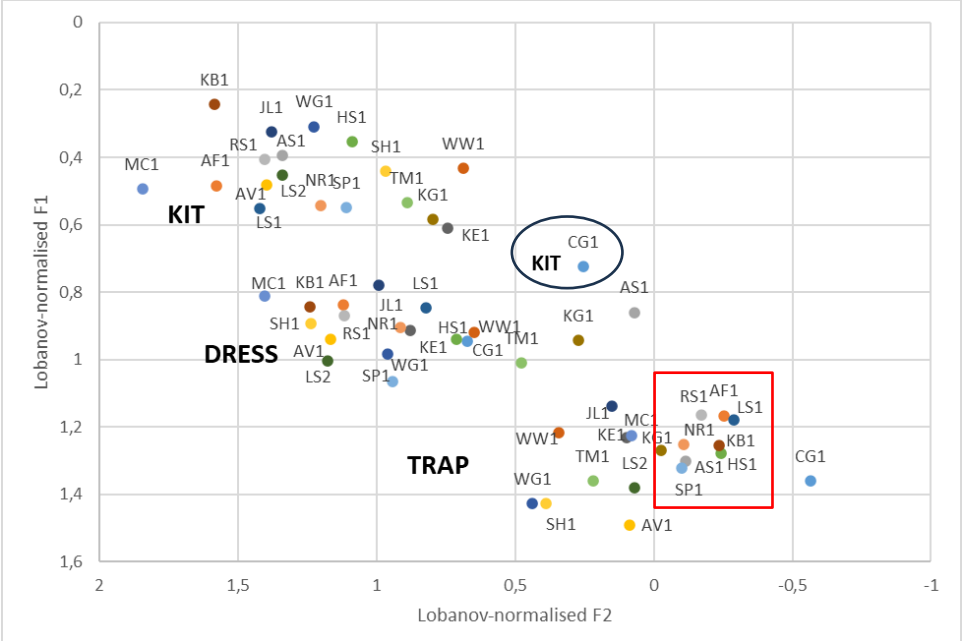

Figure 9.22**:** Lobanov-normalised F1/F2 means by vowel and by speaker. Hyper-retraction of KIT is circled in black. A red box is drawn around the TRAP retraction of female speakers.

Figure 9.22 indicates that the leader of the shift in TRAP retraction (CG1) is confirmed with normalised data, as are the leaders in the retraction of the KIT vowel further than the DRESS vowel for two male speakers (KE1 and CG1). CG1 also produces the most lowered KIT vowel. However, the TRAP vowel is lowered the most by AV1 (an older male speaker). Regarding the DRESS vowel, it is lowered the most by SP1 (an older female speaker) and

retracted the most by AS1, the youngest male speaker. It can be observed that most female speakers retract the TRAP vowel.

In conclusion, the unnormalised data indicate that the CVS is clearly present in the data set, but the DRESS vowel is predominantly shifted by female speakers (8 out 9) and the two youngest male speakers. Conversely, 10 speakers do not exhibit DRESS shifting. The TRAP vowel is retracted under the 1825 Hz benchmark by all speakers and therefore the shift of the TRAP vowel is confirmed.

The KIT vowel is mostly retracted by male speakers and predominantly lowered by female speakers. These preliminary results based on unnormalised data show that male speakers tend to retract the short front vowels while female speakers are more likely to lower them. Normalised data provide nuanced results, as female speakers tend to retract the TRAP vowel the most and some shift leaders turned out to be different speakers for different vowels (TRAP F1, DRESS F1/F2). It is likely that shifting of vowels is conditioned by gender, but more investigation is needed in order to draw robust conclusions about these preliminary findings, as unnormalised data do not allow for the inter-speaker comparisons that are necessary to study the effects of the social factors on the CVS.

9.3 Normalised data: the CVS in descriptive terms

I first present the normalised data in purely descriptive terms, based on 95% confidence ellipses drawn for male and female speakers (Figure 9.23), for the two age groups (Figure 9.25). The orientation and the dimensions of the ellipses give evidence of the direction of the shift, and of variability within the groups.

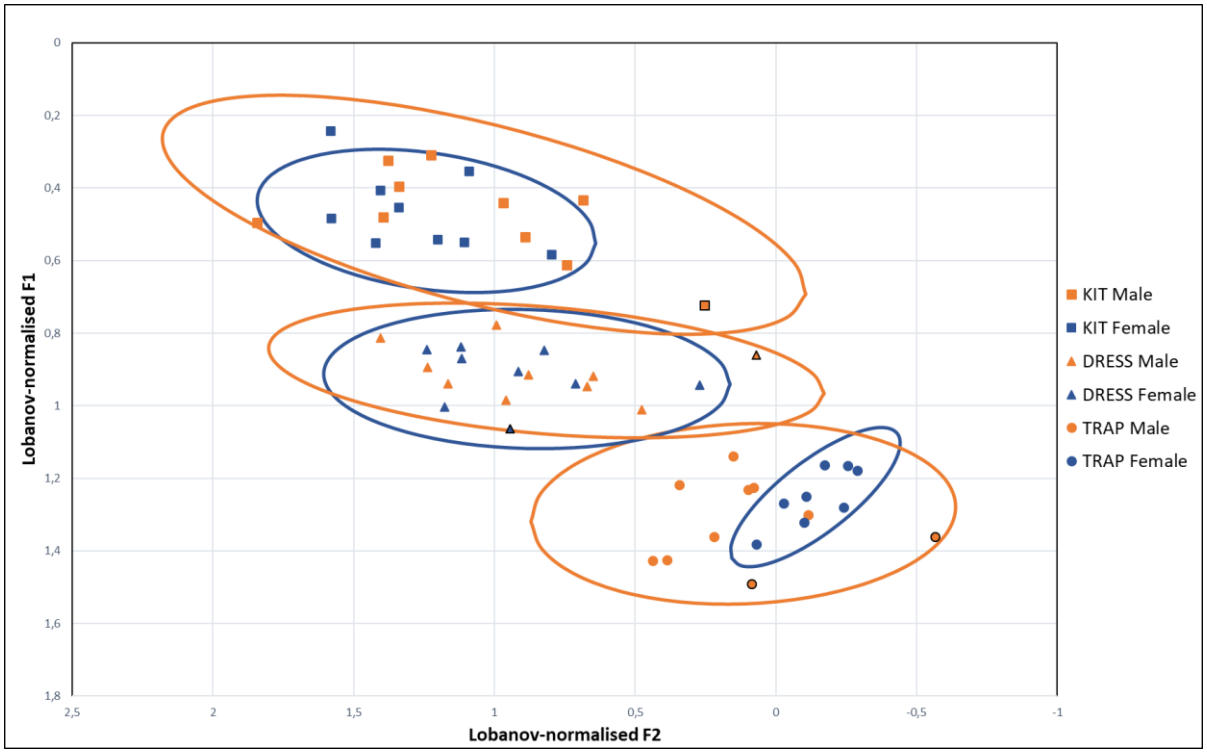

Figure 9.23: Lobanov-normalised F1/F2 speaker means with 95% confidence ellipses for the two gender groups: male speakers (orange) and female speakers (blue). The data points circled in black are the shift leaders selected in the analyses.

Figure 9.23 shows gender differences and illustrates the atypical patterns of retraction of the shift leaders, which changes the orientation of the ellipse for the male speakers. Even though the KIT and DRESS vowels seem to be realised similarly by the female and male speakers, the TRAP vowel is more retracted by female speakers. The DRESS and KIT vowels do not vary remarkably on the F1 dimension of lowering, as shown by the almost horizontal orientation of the ellipses, with the exception of the shift leaders (LS1 and LS2).

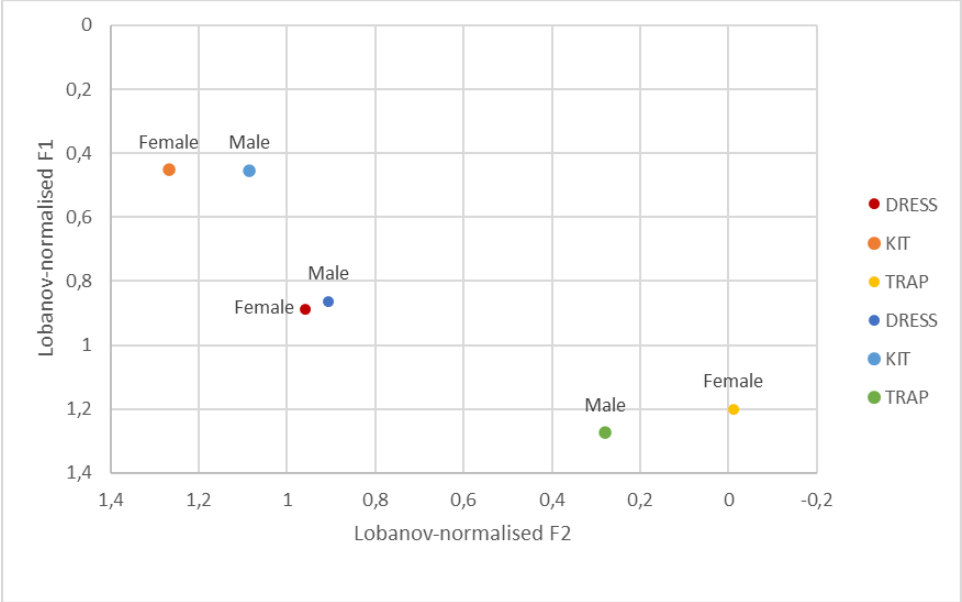

Figure 9.24**:** Lobanov-normalised F1/F2 group means by vowel and by gender.

To explore this further, normalised group means of F1 and F2 by gender are represented in Figure 9.24. It can be observed in this plot that male speakers have a more retracted KIT vowel, but both gender groups realise KIT with the same height. Likewise, male and female speakers have very close realisations of the DRESS vowel, even though female speakers do not retract as much as male speakers, and they also lower the vowel a bit more. The pattern is quite different for the TRAP vowel, for which female speakers are observed to have considerably retracted realisations, whereas male speakers do not retract the TRAP vowel as much and produce a slightly lowered TRAP vowel.

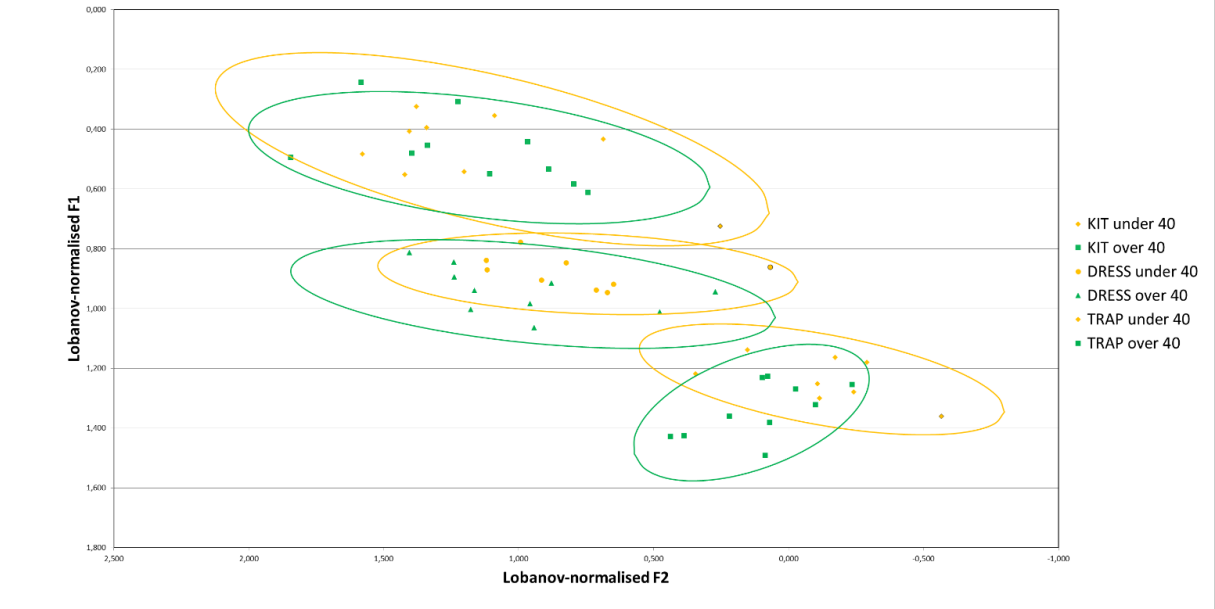

Figure 9.25: Lobanov-normalised F1/F2 speaker means with 95% confidence ellipses for the two age groups: speakers under 40 (yellow) and speakers over 40 (green). The data points circled in black are the shift leaders selected in the analyses.

I next represented normalised F1 and F2 means according to age groups in Figure 9.25. Observation of the confidence ellipses in this plot shows that the two age groups differ in their participation in the shift. Age differences are more pronounced for the TRAP and DRESS vowels than for the KIT vowel. The two age groups realise different TRAP vowels, which suggests an apparent-time change. Younger speakers (under 40) retract the TRAP vowel the most, while older speakers lower the vowel on the F1 dimension. The almost horizontal orientation of the ellipse of TRAP for younger speakers suggests that the apparent-time change is primarily on the F2 dimension; there is not much variability on the F1 dimension for the younger group, thus suggesting that the change has stabilized (with the possible exception of the shift leader). For DRESS and KIT vowels, both groups seem to behave in the same way, with more retraction of the DRESS vowel for younger speakers, a retraction for which AS1is a clear shift leader, but with rather close realisations of F2. Some older speakers exhibit a slightly lowered DRESS vowel.

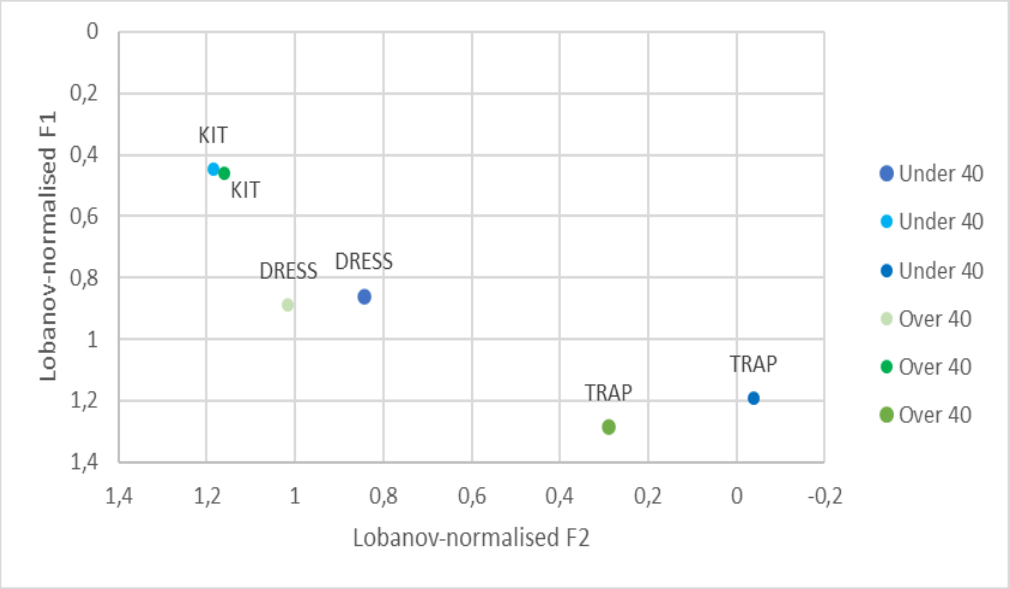

Figure 9.26**:** Lobanov-normalised F1/F2 means by vowel and by age (speakers under and over 40).

Figure 9.26 plots normalised F1 and F2 means with a single point for each age group by vowel. The KIT vowel is realised very closely by both age groups, while the DRESS vowel is realised as more retracted among younger speakers and slightly lower by older speakers. Similarly, the TRAP vowel is retracted the most by younger speakers in the corpus, whereas older speakers tend to lower the TRAP vowel.

In purely descriptive terms, the same patterns can be observed in the 95% confidence ellipses and in the Figures displaying the F1/F2 means of the speakers (Figures 9.23 and 9.25). The TRAP vowel is more retracted by female speakers than male speakers, and younger speakers retract the TRAP vowel more than older speakers. KIT is slightly more retracted by male speakers than female speakers and there are no noticeable differences between age groups, neither on the F1 nor on the F2 dimension. The DRESS vowel appears to be more retracted by speakers under 40 than by speakers over 40.

9.4 The Canadian Vowel Shift and social variables

To assess the effects of traditional social factors, age group, gender, age*gender (gender groups considered within age groups) and SES group on F1 and F2 of the three lax front vowels, I performed several multivariate analyses of variance (MANOVA), with F1 and F2 (for KIT, DRESS, TRAP separately) run as the dependent variables and age group, gender and SES run as the independent social variables[61]. An interaction between a social factor and a vowel formant value would indicate that a formant would be realised differently according to this

[61] The statistical analyses can be found in Appendix D.

social variable; in other words, the realisation of the vowel is influenced by this sociolinguistic factor. In order to identify a change in progress under the apparent-time hypothesis, correlations between age and vowel quality need to be demonstrated.

According to these analyses, age group has a statistically significant conditioning effect on F1 (p=0.014) and F2 (p=0.025) of TRAP, while the effect of gender is statistically significant on the F2 dimension (p=0.032), but the same is not true for the F1 dimension (p= 0.228). There is no significant effect of age*gender on F1 and F2 of TRAP (respectively p=0.934 and p=0.534). Similarly, the MANOVA shows no significant effect of the SES group on the F1 or F2 dimension of the TRAP vowel (F1 p= 0.867; F2 p=0.466). These significant effects of age are further investigated using Pearson correlation coefficients to determine patterns according to age. The analysis reveals a statistically significant correlation between F1 and age (p=0.009) and yields a strong negative correlation (r=-0.579) which means that when the birthyear of the speaker decreases, the value of F1 increases, indicating that older speakers lower the TRAP vowel the most. The analysis conducted on the F2 of TRAP is also statistically significant (p=0.011) and in addition to yielding a strong negative correlation (r=-0.571) suggesting that when birthyear of the speaker increases, the F2 value of TRAP decreases, indicating retraction of the TRAP vowel by younger speakers in the corpus.

The MANOVA also confirms a statistically significant correlation between formant values of DRESS and age, but this correlation emanates from the combination of both F1 and F2 values of DRESS (p=0.021). When investigated separately, neither of the tested social factors appears to condition the formant values of DRESS independently (age (F1) p=0.072, (F2) p=0.238; gender (F1) p=0.520, (F2) p= 0.507; age*gender (F1) p=0.613, (F2) p=0.168; SES group (F1) p= 0.906, (F2) p=0.614)). Additionally, Pearson correlation coefficients were calculated on the F1 and F2 of DRESS separately with birthyear of the speakers. While the correlation coefficient is not statistically significant for the F2 of DRESS (p=0.451, r=-0.184), F1 and age are statistically correlated (p=0.039) and the test yields a strong negative correlation coefficient (r=-0.477), suggesting that when the F1 of DRESS increases (the vowel is lowered) the birthyear of the speakers diminishes (the speakers are older). This finding was illustrated on Figure 9.25, and a slight lowering by speakers over 40 was indeed observed. Similarly, Figure 9.25 indicates that speakers under 40 retract the DRESS vowel on the F2 dimension.

Moreover, the MANOVA reveals that neither age, gender, age*gender, nor SES group are found to be correlated with the F1 and F2 of the KIT vowel (age (F1) p=0.978, (F2) p=0.828; gender (F1) p=0.850, (F2) p=0.236, age*gender (F1) p=0.870, (F2) p=0.282; SES group (F1)

p= 0.960, (F2) p= 0.836). These results suggest the diachronic stability of the KIT vowel in the CVS.

Summing up the findings thus far, it can be noted that 95% confidence ellipses have revealed that TRAP is more retracted by younger speakers than older speakers and that older speakers lower TRAP the most. In addition, female speakers retract the TRAP vowel more than male speakers. These preliminary findings are confirmed statistically in the analyses that were performed. The analyses have shown that both age group and sex are significantly correlated with F1 and F2 of TRAP, on both formant dimensions for age groups, and particularly on the F2 dimension for gender. The analyses evidence TRAP retraction by younger and female speakers, and some lowering by older speakers. 95% confidence ellipsis plots have shown that the DRESS vowel is realised similarly by female and male speakers, and the statistical analysis confirms this finding, yielding a statistically significant effect of gender on F1 and F2 of DRESS. The 95% confidence ellipsis plots have also shown that DRESS is slightly more lowered by older speakers than by younger speakers, and this observation is confirmed by the Pearson correlation coefficient which indicates that the older the speakers are, the lower the DRESS vowel is realised. On the other hand, age was shown to condition both formants of DRESS simultaneously, suggesting a diagonal movement of the vowel in apparent time. Observations made on Figure 9.25 are confirmed with statistical analyses; older speakers tend to lower DRESS while younger speakers are more likely to retract the DRESS vowel. In addition, Figure 9.24 shows that age differences are not so pronounced for the KIT vowel in comparison with variation of DRESS and TRAP. Both age groups exhibit the same realisation of KIT, and this result is well represented in the MANOVA which does not show statistical significance with age. Similarly, Figure 9.24 shows that the KIT vowel does not vary considerably according to gender, even if Figure 9.25 seems to suggest that male speakers retract KIT more than female speakers do. The MANOVA analysis does not reveal any statistically significant correlation between gender and the F1 and F2 of the KIT vowel. My results align with those of previous studies, suggesting the diachronic stability of the KIT vowel. Furthermore, this series of MANOVA shows no conditioning effect of the level of SES of the speakers on any of the acoustic measures of the vowels (KIT, DRESS, and TRAP).

9.5 The Canadian Vowel Shift and the Hockey Involvement Index (HII)

Another multivariate analysis of variance (MANOVA) was performed on the level of hockey engagement with F1 and F2 for (KIT, DRESS, TRAP) as the dependent variables and HII group as the independent social variable. The results of the MANOVA reveal no statistically significant correlations between the F1 and F2 of the vowels and the HII group to which speakers belong (KIT (F1) p=0.136, (F2) p= 0.622; DRESS (F1) p=0.529, (F2) p=0.105; TRAP (F1) p= 0.112, (F2) p=0.259). Additionally, Pearson correlation coefficients were performed with the HII score of the speakers and the F1 and F2 of the three short vowels. None of the correlations tested were significant (KIT (F1) p=0.413, r=0.078, (F2) p=-0.151, r=0.537; DRESS (F1) p=-0.243, r=0.316, (F2) p=-0.382, r=0.106; TRAP (F2) p=-0.389, r=0.100), with the exception of the correlation between F1 TRAP and HII score (p=0.039, r=-0.576), which suggests a lowering of the TRAP vowel by speakers with a lower HII score, speakers less engaged in hockey. However, because of the interaction between age and the HII score, this correlation only appears to suggest that older speakers, less engaged in hockey, lower the TRAP vowel on the F1 dimension, a result already identified.

9.6 Correlated movement of the short front vowels

The term "Canadian Vowel Shift" implies that the three vowels implicated in the shift move together to lower and/or farther back positions. In order to confirm whether or not this is the case for the data in this study, Pearson correlation coefficients were calculated on the mean F1 and F2 values of the three short vowels. A correlation is statistically significant if the p-value is less than 0.05 and the correlation is robust when the correlation coefficient (r) is greater than 0.250 (the larger the r correlation coefficient is, the stronger the tendency).

		Mean F1 DRESS	Mean F1 TRAP
Mean F1 KIT	r-value	0.309	0.071
	p-value	0.198	0.773
Mean F1 DRESS	r-value	-	0.637
	p-value	-	(0.003)

Table 9.5: Pearson correlation coefficient for mean F1 and F2 for all speakers: F1 correlation measures. R-value is underlined when the correlation is robust, and p-value is in parentheses when statistical significance is reached.

Table 9.5 indicates that the correlated movement of KIT and DRESS, and KIT and TRAP is not statistically confirmed on the F1 dimension. The statistical tests do not yield any significant results (p=0.198 and p=0.773) for the correlated movement of these vowels. However, there is strong evidence of the correlated movement of DRESS and TRAP ($p \leq .005$) on the F1 dimension, suggesting the vowels shift together towards a lower position. Although some degree of F1 correlation is due to mouth posture (Boberg 2019: 99), my results confirm those reported in Boberg (2019: 98).

		Mean F2 DRESS	Mean F2 TRAP
Mean F2 KIT	r-value	0.519	0.005
	p-value	(0.023)	0.983
Mean F2 DRESS	r-value	-	0.123
	p-value	-	0.617

Table 9.6: Pearson correlation coefficient for mean F1 and F2 for all speakers: F2 correlation measures. R-value is underlined when the correlation is robust, and p-value is in parentheses when statistical significance is reached.

Unlike Boberg's findings (2019: 99), which demonstrate significance for all tested correlations, in my data the only statistical evidence of correlated movement on the F2 dimension is confirmed for the KIT and DRESS vowels. Correlations between the other two other pairs are not statistically significant at the $p<0.05$ level (see Table 9.6). The KIT and DRESS vowels shift together towards a back position.

Regression lines are displayed in Figures 9.27 and 9.28 to show these correlations. The value of r^2 indicates the proportion of the variation that is accounted for by the other variable. Figure 9.27 shows that 40% of the variation in the height of TRAP is predicted by the height of

DRESS. When the F1 of the TRAP vowel is raised, the F1 of the DRESS vowel also rises. Thus, the vowels' movements on the F1 dimension are correlated and they are moving towards a lower position.

Figure 9.28 shows that 27% of the variation in the advancement of DRESS is predicted by the advancement of KIT. When the F2 of the DRESS vowel increases the F2 of the KIT vowel also increases. Thus, the vowels' movements on the F2 dimension are correlated and they are moving together towards a more fronted position.

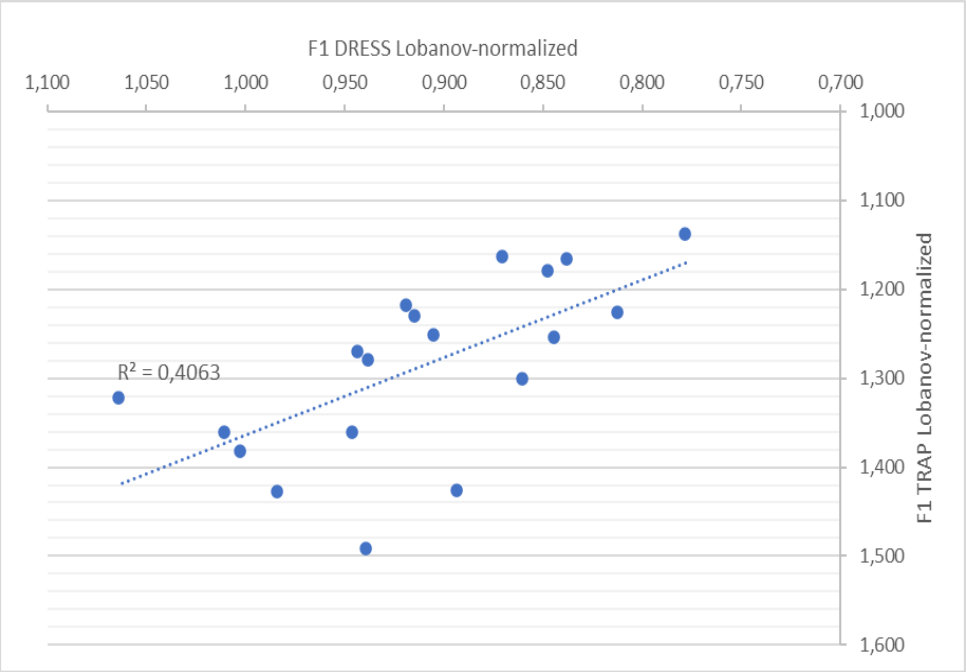

Figure 9.27**:** Correlation between F1 of DRESS and TRAP for all speakers (r =0.637; p < .005).

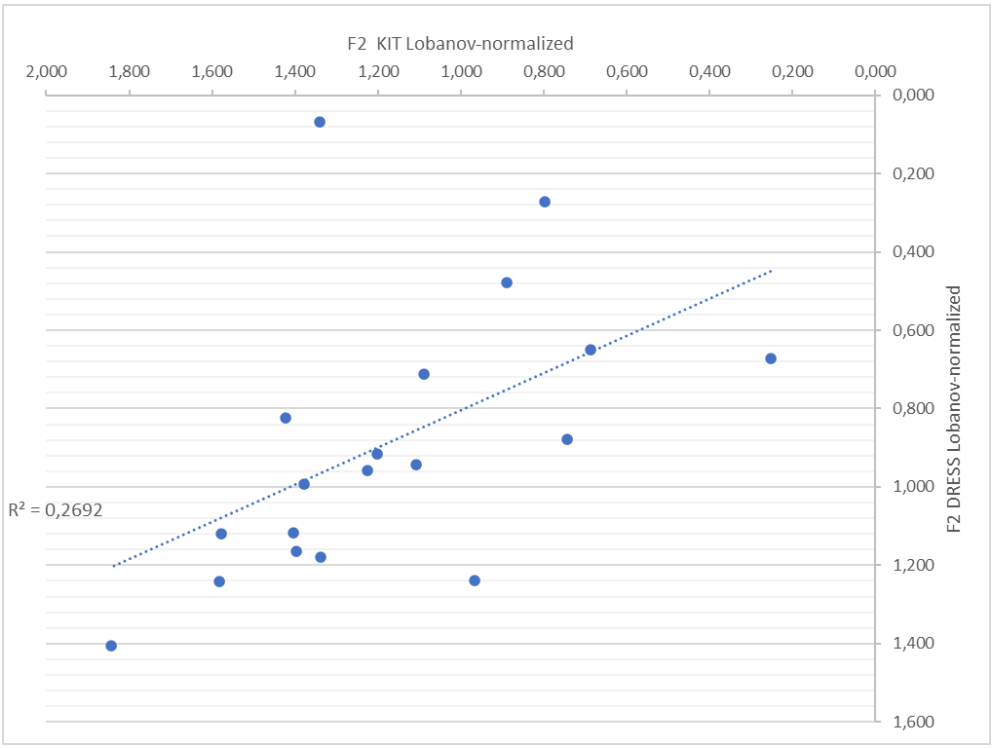

Figure 9.28**:** Correlation between F2 of DRESS and KIT for all speakers (r =0.519; p < .005)

My results do not reveal the same degree of uniformity in the shift as shown in Boberg's (2019: 110) study, which demonstrates coordinated movement of the front lax vowels (2019: 98). However, some correlations were identified on the F1 dimension in my results (DRESS/TRAP), including the downward trajectory of the shift, and an inward coordinated trajectory was observed but only for the KIT and DRESS vowels (F2).

9.7 Euclidian distance from shift leader

To provide quantitative evidence of the movement of the vowels together, I calculated the Euclidian distance[62] of speakers' realisations from those of the shift leader. These calculations were performed for each speaker and each vowel separately, using a methodology applied by Kettig and Winter (2017: 85) This analysis allows me to determine, for instance, to what extent the position of a speaker's KIT vowel corresponds to the position of a speaker's DRESS vowel. It was observed above that CG1 realises the most retracted TRAP vowel and the most retracted and most lowered KIT, while LS2 realises the most lowered DRESS vowel.

[62] The Euclidian distance corresponds to the length of a line segment between two points, meaning the distance between two vowels in this study.

		Euclidian distance KIT	Euclidian distance DRESS	Euclidian distance TRAP
Euclidian distance KIT	r-value	-		
	p-value	-		
Euclidian distance DRESS	r-value	0.682	-	
	p-value	0.003	-	
Euclidian distance TRAP	r-value	-0.249	-0.079	-
	p-value	0.336	0.764	-

Table 9.7: Correlation between Euclidian Distance to the shift leaders in the three front lax vowels.

Table 9.7 shows that the Euclidian distance in DRESS is correlated with the Euclidian distance in KIT, (p= 0.003, r=0.682), with a rather high correlation coefficient between the two distances. This finding suggests that speakers who are closer to the shift leader in DRESS are also closer to the shift leader in KIT (see Figure 9.29). On the other hand, no correlation is found between the Euclidian distance of TRAP and DRESS (r= -0,079, p=0.764), and between the Euclidian distance of TRAP and KIT (r=-0.249, p=0.336).

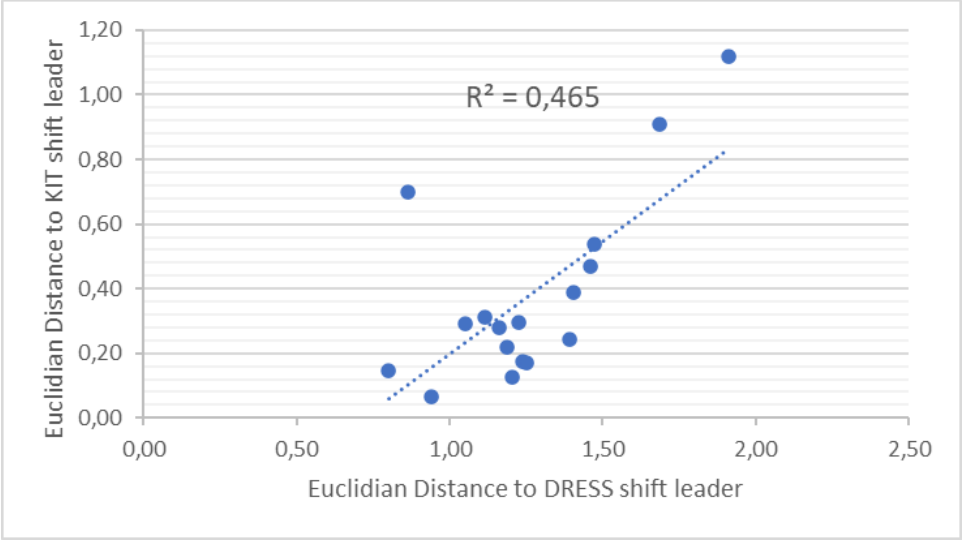

Figure 9.29: Correlation between KIT and DRESS and the shift leader with each data point representing a single speaker.

Figure 9.29 indicates that the Euclidian distance to the shift leader in KIT is correlated with the Euclidian distance to the shift leader in DRESS, and that 46.5% of the KIT variation is accounted for by the values of DRESS.

In sum, the results show that speakers who are closer to the shift leader in DRESS are also closer to the shift leader in KIT but that is the only significant correlation. This finding seems to be related to the results of the analysis of the correlated movement of the vowels; the correlation between KIT and DRESS is found to be statistically significant on the F1 dimension,

with both vowels moving towards a back position, while DRESS and TRAP are found to be statistically correlated on the F1 dimension, moving towards a lower position.

To conclude, in the introduction to this chapter, I outlined the following four research questions about the CVS that I aimed to answer in this study:

1. To what extent is the shift present in the data?
2. Is the CVS socially embedded?
3. Is the CVS more advanced in speakers with a higher degree of engagement with hockey (HII)?
4. Do all the three short vowels participate in the shift and what is the main direction of the shift?

The first research question was motivated by the assumption that speakers of HE use variants that are recognised as typically Canadian (e.g., vowels shifted according to the CVS). The shift was indeed identified in the speech of the hockey players in my London, Ontario corpus. Using the acoustic definitions of shifted vowels (Labov et al. 2006), the investigation of unnormalised data reveals that the shift of TRAP is uncontested. All speakers are evidenced to retract the TRAP vowel under the benchmark established by Labov et al. (2006). The DRESS vowel is also shifted by some speakers in the corpus, but this shift occurs less consistently in the data, being subject to individual variation. DRESS is shifted by 10 speakers, and this includes eight female speakers and only two male speakers under 40. For the KIT vowel, Labov et al. (2006) did not establish a shifting benchmark since they find in their study that the KIT vowel is not actively participating in the shift; they evidence a diachronic stability of KIT. This inconsistency in the degree of participation of the KIT vowel in the shift is documented (see section 2.1.2). In my investigation of the data, I examined KIT lowering and retraction in the production of the speakers, using two benchmarks. In this study, a KIT is shifted on the F1 dimension when the F1 value is greater than 540 Hz, or when the F2 value is under 1825 Hz. Following these benchmarks, nine speakers retract the KIT vowel. These speakers are mostly male speakers except for one female speaker (HS1). On the F1 dimension, the KIT vowel is shifted by five speakers who lower the vowel under the 540 Hz benchmark. This sample includes four female and one male speakers. These results are a clear indication of the presence of the CVS in the speech of the hockey players participating in this study, even though this investigation has evidenced interspeaker variation (for example, the case of CG1, a shift leader with exceptional realisations of retraction) and intraspeaker variation, as the formants of speakers' vowels vary, with some tokens in their production showing more participation in the

shift than others. The first research question can be answered affirmatively: the CVS is indeed present in the data. This finding is consistent with Boberg (2008), who concludes that the shift is present uniformly throughout Canada. However, the presence of shifted vowels in the speech of the speakers is not sufficient to talk about an ongoing linguistic change. Exploration of the conditioning of social factors is indeed needed.

The second research question arose from the literature and focuses on the social conditioning of the shift. Using Lobanov-normalised data, results of the statistical analyses show that the TRAP vowel is undergoing change. Robust correlations between formant values (F1 and F2) and age were found. On the F1 dimension, TRAP is mostly lowered by speakers over 40, while on the F2 dimension, it is speakers under 40 who show the most retracted TRAP vowel. Similarly, the analyses indicate that gender conditions the F2 dimension of the TRAP vowel. Female speakers are more likely to retract the TRAP vowel than male speakers. These findings are in keeping with the description formulated by Boberg (2005) who found lowering of TRAP between his middle and oldest age groups, and retraction by his youngest group. The fact that younger speakers lead the retraction of shifted vowels has been demonstrated in previous studies (Kettig and Winter 2017, Hoffman 2010, Boberg 2005). Furthermore, the retraction of the TRAP vowel by female speakers is consistent with previous literature on the CVS, with young female speakers leading change from below in sociolinguistic research (Labov 1990). Indeed, Boberg (2019: 113), highlights that the CVS is more than a regional feature; rather, it is a change in progress led by women, who realise greater TRAP retraction than men (Boberg 2005, Roeder 2012).

Several tendencies have been reported in this study regarding the DRESS vowel. First, on the F1 dimension, DRESS is conditioned by age, as the vowel tends to be lowered by speakers over 40. Similar findings are observed by Boberg (2005) in Montreal, with lowering of the DRESS vowel between his middle and youngest groups. On the F2 dimension, younger speakers appear to retract the DRESS vowel significantly. Robust movements of retraction of the DRESS vowel were found to be statistically significant in previous studies (Boberg 2005; Kettig and Winter 2017) and that trend is confirmed in the findings of the current study. Furthermore, statistical investigation has shown that both the first and second formants of DRESS are correlated with age. This finding suggests a diagonal movement of the DRESS vowel, down and inward.

On the other hand, the statistical analyses reveal no correlations with age or gender for the KIT vowel. These results do not confirm the active participation of the KIT vowel in a shift in apparent time. They indicate that the KIT vowel is the least active vowel in the shift. These

results are in agreement with Roeder and Jarmasz (2010: 391) and Boberg (2005) who note the stability of the KIT vowel. Similarly, Sadlier-Brown and Tamminga (2008: 9-10) argue that the KIT vowel lags behind the other front lax vowels and represents an earlier stage in the shift.

Additionally, no correlation was found between the SES of the speakers and formant measurements of the three front lax vowels, thus suggesting that the SES level of the speakers does not condition this sound change. This result corroborates what Boberg finds in Montreal: there is an absence of correlation between education and shifted vowels (2005: 146). As a result, the CVS seems to be well implemented socially in CE and to occur uniformly regardless of the social profile of speakers. Nevertheless, a few researchers consider that additional research on the conditioning effects of social factors on the CVS should be pursued (Roeder 2012, Boberg 2005).

To conclude, the CVS is indeed socially embedded, and traditional factors of age and gender condition the variation of the vowels. A change in progress observable in apparent time, involving the TRAP vowel and the DRESS vowel, is confirmed in the speech of the hockey players participating in the study. On the other hand, the KIT vowel is not involved in this change and appears to be stable in apparent time.

The third research question is central to this study on HE, as it seeks to determine whether the CVS is conditioned by the level of hockey engagement of the speakers as indicated by their HII score. The analysis did not find any correlations between HII group and formant values of the three front lax vowels. In the same vein, the HII score as a continuous numerical independent variable was only correlated with the F1 of TRAP, and the analysis did not yield any other correlations. This unique correlation was considered to be related to the significant correlation between age and variation in TRAP. Based on this finding, it can be stated that the level of hockey engagement of the speakers does not condition the CVS.

The fourth research question allows me to investigate eventual connections between the movements of the three vowels implicated in the shift. Although the data show that KIT is not participating in the apparent-time shift, further investigation shows that the movements of KIT and DRESS are significantly correlated in the inward trajectory (F2). My findings also indicate that TRAP and DRESS are correlated on the F1 dimension, with both vowels having a downward trajectory. Moreover, the results show that speakers who have realisations closer to the shift leader's realisation of KIT are also closer to the shift leader's realisation of DRESS (considering both F1 and F2), which suggests a coordinated movement of the realisations of the speakers. Additionally, a diagonal movement of the DRESS vowel was determined based on a correlation showing simultaneous movements on the F1 (downward) and on the F2 (inward)

dimensions. Regarding the main direction of the CVS, the findings tend to indicate that the shift is occurring in two stages with lowering and retraction, and then only retraction (Roeder and Jarmasz 2010: 396) but the main trajectory appears to be retraction. While the DRESS and TRAP vowels still show some lowering, younger speakers retract the TRAP vowel on the front/back axis (F2) and they do not exhibit further lowering.

My results can be interpreted as showing a change in progress in two different stages, the first stage is lowering, as demonstrated by older speakers who lower the DRESS and TRAP vowels, and the second stage is the retraction led by younger speakers. KIT is in the first stage of the shift as can be seen in the incipient downward movement of the vowel. The results do not entirely correspond to those of Boberg (2019: 98) who observes the coordinated movement of the three front lax vowels, supporting the hypothesis of a chain shift (a series of interrelated changes). In his study, Canadians who shift one front lax vowel tend to shift the others, in downward and inward dimensions (2019: 110). However, in my study, the movements of the three vowels are not correlated, so my results do not categorically confirm a chain shift.

Chapter 10 Ontarians' awareness of a distinct Canadian English variety

This chapter presents the results of the survey section focusing on CE and addresses the third research question: are Ontarians aware of the existence of a Canadian variety of English (i.e., CE) and if yes, is CE only perceived according to known stereotypes?

In this chapter and in Chapters 11 and 12, I only mention an item when it is cited by at least two survey participants. The answers of the respondents are presented in parentheses and written in italics throughout these chapters. Since respondents could refer to several features of CE in their answer, the total number of responses does not always equal 100%. In the same way, when examining the demographic profile of respondents for a particular answer, I observe the number of respondents out of the number of respondents in this category and not out of the total number of respondents who answer the question, to reduce the bias due to the sample (e.g., Q17 age of respondents).

10.1 Acknowledgement of being familiar with the term "Canadian English"

Previous studies have been concerned with the question of representation of the CE variety by non-linguists. In Dollinger's study (2019: 233-235) in the metropolitan area of Vancouver, 429 participants replied to the question "is there a Canadian way of speaking?" using a Likert scale (from "strongly agree" to "strongly disagree"). He finds evidence that 64% of the informants who hold a university education or a postsecondary education either "strongly agree" (28%) or "agree" (36%) with this statement. When he combines the answers: "strongly agree" and "agree", he finds that 47% of informants without a university education express agreement with the affirmation that CE exists (2019: 234). He also investigates correlations with age: 80% of respondents across all age groups, either "strongly agree", "agree" or "somewhat agree", that there is a Canadian way of speaking (2019: 235). He is careful about the results of his study, and notes that they may be under-reported because Vancouver is very influenced by the U.S. Dallinges (2015) administered an online survey to investigate the legitimacy and recognition of CE. Out of 60 respondents, 66.8% said there was a Canadian variety of English. Another 28.5% did not reply to the question, and nearly 5% considered CE to be a British variety of English, as they underlined its British features, thus leading the author to assume that participants might not agree with the statement.

In my study, in response to the question *Are you familiar with the term Canadian English?* (Q17), most respondents answer in the affirmative (83.5%, N=208). Thus, only a small percentage of participants (16.5%, N=41) say that they are not familiar with the term *Canadian English*, and these respondents are balanced in terms of gender (21 female respondents, 19 males and one respondent who prefers not to disclose their gender). The distribution of the respondents who say they are familiar with the term *Canadian English* is equivalent to the general distribution of the sample. In terms of gender, it is 85.3% of female respondents and 81% of male respondents. In addition 3 out of 3 third gender/non-binary respondents and 2 out of 3 respondents preferred not to disclose their gender. Similarly, age does not seem to correlate with reporting familiarity with the term *Canadian English*. Respondents who answer this question affirmatively are balanced in terms of age group (83.8% of the respondents under 40 (N=83) and 83.3% of the respondents over 40 (N=125)). As seen earlier in Chapter 1, CE is the product of a long history of colonisation and immigration, as well as the result of a slow process of codification. If I further add the fact that the linguistic characteristics of the variety are not taught in schools or at university outside of linguistics courses, the current study still reveals that 83.5% (N=208) of respondents answer yes to this question, thus suggesting that they are familiar with the term *Canadian English*. Nevertheless, due to the wording of the question, there is no evidence that these respondents are familiar with the term without believing that there is such a thing designated by the term. Section 10.2 below provides elements to answer this concern.

In his study, Dollinger (2019) shows that lower social classes are less convinced that CE exists. This does not seem to be corroborated in my study as the level of education of the respondents does not seem to impact their choice. In terms of education the results are balanced: college degree holders (N=31, 91.2%), respondents with no higher education (high school diploma, some high school no diploma) (N=16, 84.2%), and respondents with higher university education (e.g., bachelor's and master's degree) (N=161, 82.1%). The same observation can be made regarding occupation, with percentages between 75% and 93% (see Appendix E.1-E.2).

To pursue this investigation of the representation of non-linguists in Ontario, it is legitimate to examine what criteria or features Ontarian respondents use to describe their English variety. The next section presents the definition and references respondents attach to the variety.

10.2 Linguistic and social markers of Canadian English

Question 19 seeks to elicit a wide range of answers from respondents, (*Can you name something specific to Canadian English? Using your own words, list some features of Canadian English.*). As described in Chapter 7 (section 7.3.4), the aim of the question is to collect linguistic features that respondents may associate with the Canadian variety, as well as social characteristics they may use in their evaluation of this variety. The collected answers vary in length and level of specificity. Some respondents give very precise responses with several characteristics cited and some of them provide examples of features they mention, while others remain vague in their descriptions.

Out of the 208 participants who are familiar with the term *Canadian English* (Q17), eight did not reply or did not provide further explanation for their answer (e.g., *I can't name something specific*). Figure 10.1 presents the main linguistic categories under which the answers of the respondents are classified, and Figures 10.2, 10.3, 10.4 present the specific elements given by respondents in their answers. These figures appear throughout this section when I comment on the corresponding linguistic category. The same colour code applied in Figure 10.1 is reused in these figures. There is no additional figure for the categories of accent and grammatical features because respondents did not provide further explanations about the accent and the only grammatical feature that was cited is the structure *I am done* (N=2).

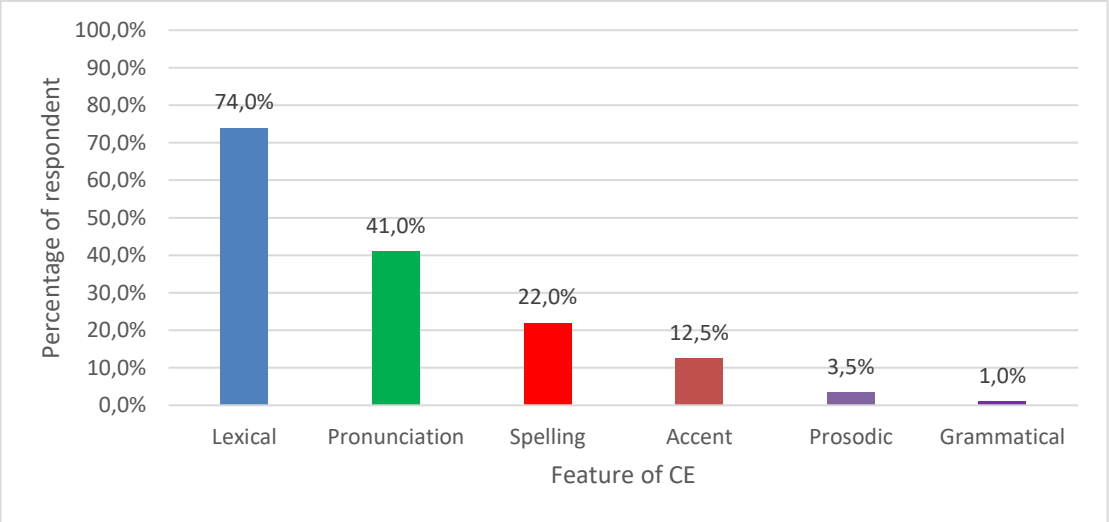

Figure 10.1: Colour coded linguistic categories which enable a classification of linguistic elements cited by respondents when answering the question: *Can you name something specific to Canadian English? Using your own words, list some features of Canadian English.*

Figure 10.1 indicates that the most frequently mentioned features are lexical (74%), an observation that is unsurprising if I consider what is noted by Walker (2015: 62): "words are the most noticeable part of language." However, some of the respondents' remarks remain vague and only point to general notions, without referring to precise items so these answers are not featured in Figure 10.2. For instance, 12.5% of the respondents refer to lexical expressions, terms and specific vocabulary (e.g., *Some specific vocabulary; national colloquialisms)* (N=25), there are also 11% of the respondents who answered "*slang*" in their answers but without giving much explanation (N=22). These two examples tend to suggest that, even though lexical features are the most frequently mentioned, some respondents lack precise lexical features to describe CE.

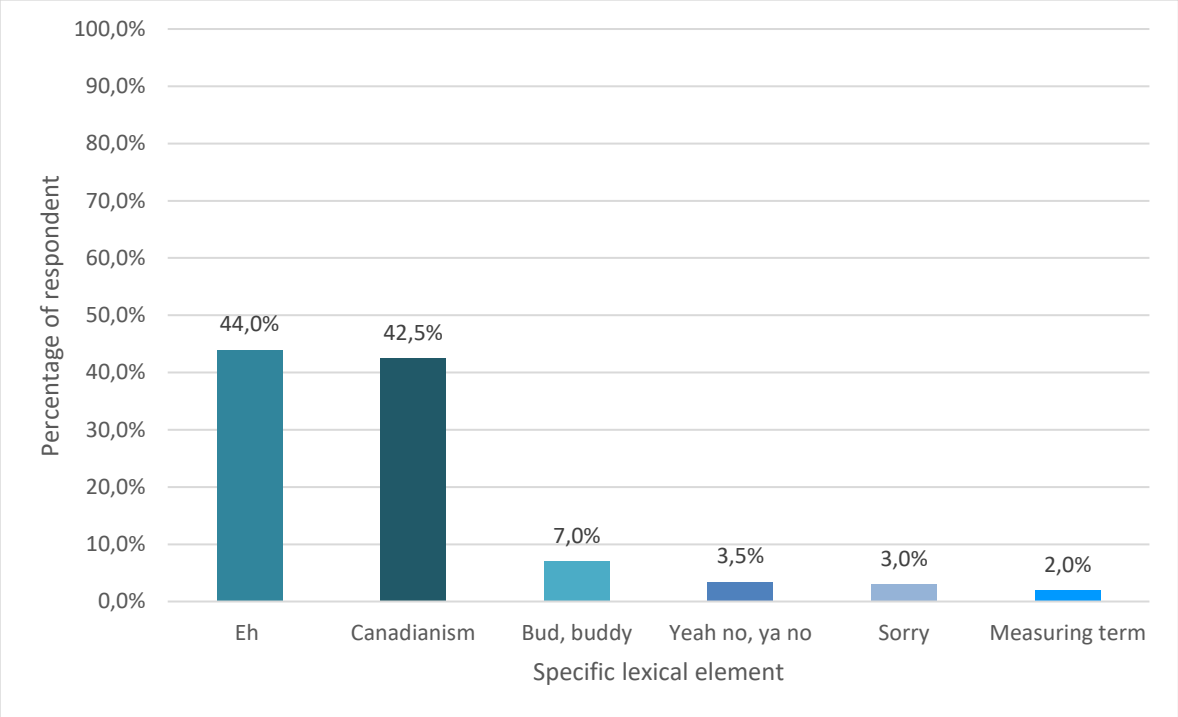

Figure 10.2: Specific lexical elements when answering the question: Can you name something specific to Canadian English? Using your own words, list some features of Canadian English.

Figure 10.2 indicates the different elements cited by respondents to describe CE lexically. The first observation to make is the fact that these responses include very precise lexical items which appear in the Canadian lexicon, such as: *eh, bud, buddy, yeah no, ya no, sorry* and terms of measurement (e.g., *meter*).

Eh is the specific item cited the most (N=88, 44%) in answers such as in the examples: *certain words people attach to Canadian speakers (eh), Ending a sentence with 'eh?' As in 'sure is hot today, eh? and frequent use of eh as a question/confirmation signifier*. *Eh* is mentioned more often by younger participants in the survey, and the reference to it disappears as age increases. It is cited by more than half of the younger respondents (50.8%, N=60) who

comment on how it is used whereas only 34.1% of respondents over 40 (N=28) mention it. The usage of *eh* has been explored by sociolinguists interested in CE, showing that this discourse marker can be used in a variety of contexts, to express politeness for example (Gold 2005, Chambers 2014). Gold and Tremblay (2006: 259) have shown that *eh* is considered to be an "identity marker" in Canada, a feature emphasised by Canadians to diminish the American influence. In Canadian popular culture, *eh* is a stereotype used to define Canadians. In the same vein, Denis (2013) notes that *eh* is the "quintessential Canadian English stereotype" (2013: 1). He explains that it first conveyed an American-Canadian contrast and then it conveyed an urban/hoser (rural Canadian) divergence;. According to Denis (2020), *eh* is now associated with Canadianness and Canadian identity (2013: 4-9). Denis' research demonstrates that *eh* has been enregistered in Southern Ontario. Because of its stereotypical status, the variable is now automatically recognised and associated with Canadian speakers, and specifically with Southern Ontarians. In this study, Ontarians seem well aware of this characteristic; as demonstrated in the results, it is the most frequently cited lexical feature. Although *eh* is mentioned by a majority of younger respondents in the survey, its usage is not limited to any age group, and it is shown not to be associated with any age group in particular compared to other utterance final tags (Denis and Tagliamonte 2016: 98).

Under the second category, that I labelled "Canadianism", I include all the references respondents made about specific Canadian vocabulary. This category represents 42.5% of the answers (N=85). The following list presents examples of Canadianisms mentioned in the answers: *chesterfield*, *browner*[63], *two-four*[64], *cobra chicken*[65], *double double*, *toonie*[66], *hydro*[67], *runners*[68], *mickey*[69], *molson muscle*[70], *loonie*, *KD*[71], *Canuck*[72], *Pogie*[73], *hoser*[74], *timmies*[75], *May*

[63] Ontario, informal, a person who behaves obsequiously in the hope of advancement, a brown noser (Barber 2008: 215).
[64] A case of twenty-four bottles of beer.
[65] A Canadian goose, this term comes from a tweet (June 2018).
[66] Informal, the Canadian two-dollar coin.
[67] 1. Electricity 2.an electric utility company (Barber 2008: 91).
[68] Running shoes, sneakers, trainers.
[69] A small bottle of liquor, usually 375 ml.
[70] Slang, a beer belly. It comes from Molson, a popular brand of beer (Barber 2008:134).
[71] It stands for Kraft Dinner which is dry macaroni and cheese powder.
[72] A Canadian (Barber 2008:70).
[73] Informal, 1 .unemployment insurance benefits, 2. welfare benefits (Barber 2008: 205).
[74] Slang, 1.an idiot; a goof, 2. an uncultivated person, especially an unintelligent, inarticulate, beer-drinking lout (Barber 2008: 8).
[75] Diminutive of Tim Hortons.

24[76], *gongshow*[77], *mountie*[78], *klicks*[79], *snow birds*[80], [a] *keener*[81], *pop*[82], *washroom*[83], *pencil crayons*[84], *giv'er*[85].

Canadianisms have been documented in CE (Boberg 2010) (See Chapter 2, section 2.3.2), but); while respondents note a considerable number of Canadianisms, none of them indicate that there is regional variation in Canada and that it can be expressed through specific regional terms (Walker 2015: 68-69).

Figure 10.2 also shows that 7% of the respondents note the use of *bud* and *buddy* (N=14, 7%) such as in the following examples: referring to people as *buddy* frequently in either a friendly and hostile manner, *out fer a rip bud*[86] and *including a pronoun such as buddy after a sentence*. *Bud* and *buddy* are elements of Canadian slang that are well known in popular culture, being used to acknowledge an acquaintance, either a very good friend or a stranger. This feature is cited by 11.2% of respondents under 40 (N=13) and by one respondent in the age group over 40 (1.2%). There appears to be an effect of age on the use of this lexical item.

Smaller groups of respondents refer to additional lexical features. Indeed, seven participants indicate the use of *yeah no* and *ya no* as being typically Canadian (3.5%). These items are cited by three respondents in the 40-49 age group, by three respondents in the 30-39 age group of 30-39 and by one participant in the 20-29 age group. This feature does not seem to be influenced by age. It is mentioned by three female and three male respondents and one non-binary/third gender respondent, which may suggest there is no gender effect. To the best of my knowledge, there have been no studies on these lexical items yet.

Finally, six participants report the high-frequency use of the word *sorry* in Canada (N=6, 3%), which does not seem to be understood as a Canadianism by respondents who are sensitive to its frequency (e.g., *saying sorry a lot are stereotypes but I have experienced that, Saying sorry all too often*). The word *sorry* is understood as a stereotype in Canada because of its high-frequency use among Canadians who are known to be polite and to overly apologise, resulting

[76] Informal term which refers to Victoria Day.
[77] It is the name of the hockey apparel brand and also comes from Junior hockey, the unofficial definition is an "out-of-control young man" (Lafrance and MacDonald 2018: 1-2).
[78] Informal, a member of the Royal Canadian Mounted Police.
[79] Informal, a kilometer.
[80] A person who migrates from the colder to the warmer regions.
[81] Informal noun which refers to a person, especially a student, who is extremely eager, zealous, or enthusiastic (Barber 2008: 216).
[82] A fizzy drink.
[83] A bathroom.
[84] A coloured pencil.
[85] To go above and beyond what was expected.
[86] Having a smoke or two and a few beers (Urban dictionary).

in Americans' association of *sorry* with Canadians (Boberg 2010:133). In addition, four respondents note the different measuring terms used by Canadian speakers (2%) (e.g., *like measuring weight in pounds but height in feet* and *Distance and weight is usually described in metric*).

As shown in Figure 10.1, the second most cited feature of CE is its pronunciation (N=82, 41%). Figure 10.3 presents the different answers of the respondents. Similarly, as the lexical category, 9% of the respondents referred to pronunciation in general terms but did not specify further and therefore those answers do not feature in this figure (N=17) (e.g., *some slight variations in pronunciation, some different word pronunciations*).

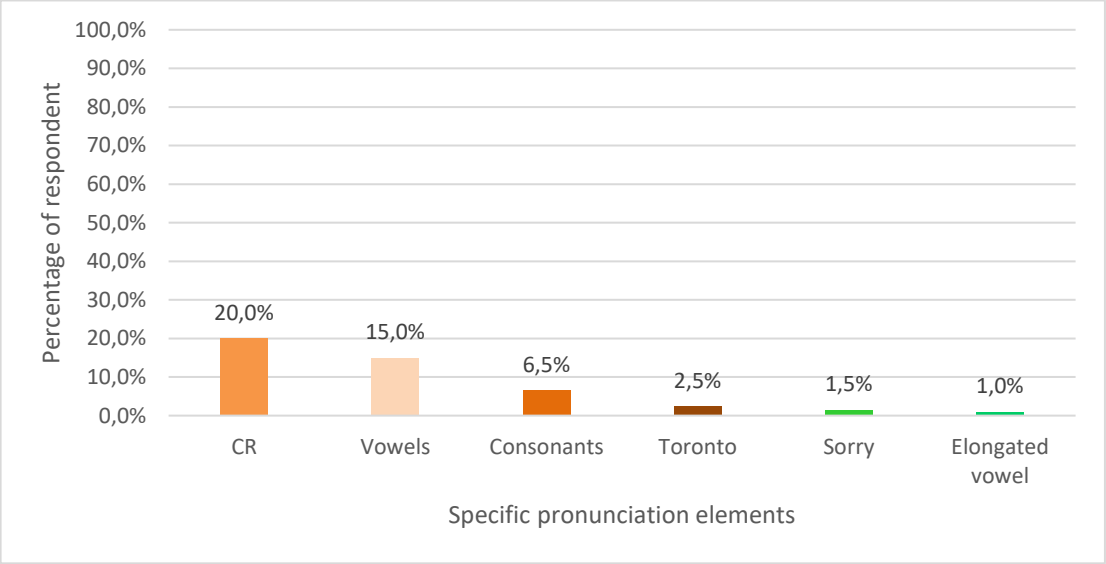

Figure 10.3: Specific pronunciation elements cited when answering the question: Can you name something specific to Canadian English? Using your own words, list some features of Canadian English.

Figure 10.3 indicates that CR is the most cited item among specific pronunciation elements. I labelled this first element using "CR" to highlight that respondents are aware of this particular linguistic variable, even if they do not use the linguistic term to describe this phenomenon. 20% of the respondents refer to the particular Canadian pronunciation of vowel sounds in words in which CR is expected to occur (e.g., *The vowels in "should" and "write", How I pronounce the words house, mouse, crayon; Certain vowel sounds like pronouncing "about" as "a boat" and I typically pronounce "about" like "a-boot)* (N=40). They are aware of a difference in pronunciation as suggested by their examples, and this aligns with Nycz (2016) who suggests that her Canadian informants are aware of the presence of CR and they are conscious it is a feature of CE, but they do not judge the variable favourably or unfavourably (Chapter 6, section 6.3).

The second most cited pronunciation element is the pronunciation of vowels in more general terms (15%, N=30) (e.g., *Canadian English tends to shorten vowels, different vowel sounds than "normal [E]nglish"*, different ways of pronouncing a and specific pronunciations (e.g., *'fer' instead of 'for'*). Ontarians' perception follows studies in phonetic variation in CE, as CE differs from other varieties of English primarily because of its vowel sounds (Walker 2015: 94).

The other specific elements presented in Figure 10.3, are under 10%. 13 respondents note the pronunciation of consonants in Canadian speech (6.5%) such as the examples: *dropping T, dropping H* and *sharp R*. This description given by respondents of the pronunciation of consonants of CE is also confirmed in Walker's monograph (2015: 78) in which he describes the phonetic variation in the realisation of Canadian consonants, for instance the pronunciation of "t", "r" and "h".

Five participants note the particular pronunciation of the city name *Toronto* (N=5, 2.5%) (e.g., *soft consonants* (*i.e., Toronto*) and *Saying Toronto and not pronouncing the second t*), but none of them was born in Toronto or lived there when they participated in the study. The pronunciation of the name of the biggest Canadian city, *Toronto*, has been heavily commented on lately in the news (articles and interviews) and has been the subject of numerous debates on the internet (e.g., *Toronto Sun* May 2022[87]). In a 2021 study, Ph.D. candidate Caitlin Bergin investigates whether the pronunciation of *Toronto* indexes membership as a resident of Toronto[88]. 2740 participants completed her online survey. Her results show that the pronunciation of the name of the city indexes an in-group or an out-group membership for people who live in Toronto. Thus, [tʃɹanːo] (62%) and [təɹanːo] (49%) are most likely to be used by Torontonians. Likewise, she notices that some participants report using the following variants: [təɹanːo] (58%) and [tʃɹanːo] (59%). In addition, she notes that [toɹanto] (89%) or [təɹanto] (84%) are associated with speakers who live outside of Canada; she suggests that these variants index an out-group membership.

Finally, three respondents mention the pronunciation of the word *sorry* (N=3, 1.5%) (e.g., *A particular way of pronouncing vowel sounds in words like "boat" or "about" and "sorry"*), and this specific pronunciation is an example of the merger of /or/ and /owr/ in CE (Boberg 2010: 133). Two respondents note that vowel sounds are long in CE (1%) *(e.g., long vowel sounds*).

[87] https://torontosun.com/news/local-news/are-you-pronouncing-toronto-properly
[88] https://www.blogto.com/city/2021/09/how-people-pronounce-toronto/

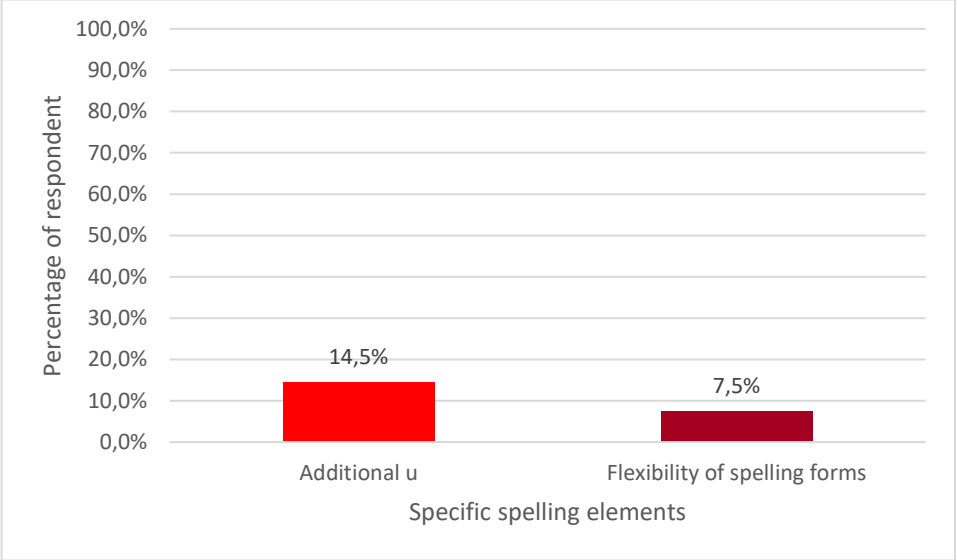

Figure 10.4: Spelling elements cited when answering the question: Can you name something specific to Canadian English? Using your own words, list some features of Canadian English.

The third most cited feature is spelling (Figure 10.1). In fact, 44 respondents (22%) attribute particular spelling forms to CE. Figure 10.4 shows that 14.5% of the respondents (N=29) refer to the particular convention which consists of writing "our" in words illustrated with examples such as: *using 'u' in words such as 'colour'* and *'neighbour'*. However, 7.5% of the respondents acknowledge the adaptability or flexibility of Canadian spelling forms (N=15, 7.5%) (e.g., *Flexible spelling of words like colour/color, favourite/favorite*). Even though the "u" spelling form is attested in CE, descriptions are less categorical than the non-linguists' point of view in this survey. It is not described in Walker's textbook, and it is barely explained in Boberg's monograph (2010: 40), in which the author describes Canadian spelling first as being "in a transitional zone", then to "reflect a national uncertainty" and finally he affirms that CE spelling is characterised by both British (e.g., *centre, colour*) and American forms (e.g., *tire, curb*). Boberg refers the reader to "a recent discussion" on spelling in Canada in Pratt's work (1993) and gives references to spelling guides and dictionaries. It is interesting to note that Boberg qualifies that discussion as recent, and perhaps the insufficient attention scholars have devoted to the topic in recent years reflects a stark contrast between their views and those of non-specialists. Recent dictionaries and spelling guides offer suggestions on CE spelling conventions (see Chapter 1, section 1.3.2).

The section below presents the responses of less than 15% of the respondents (Figure 10.1). Thus, 13.5% of the respondents spontaneously refer to the Canadian accent (N=28), since section 10.3 especially focuses on the Canadian accent. The comments of these respondents are further detailed in that section.

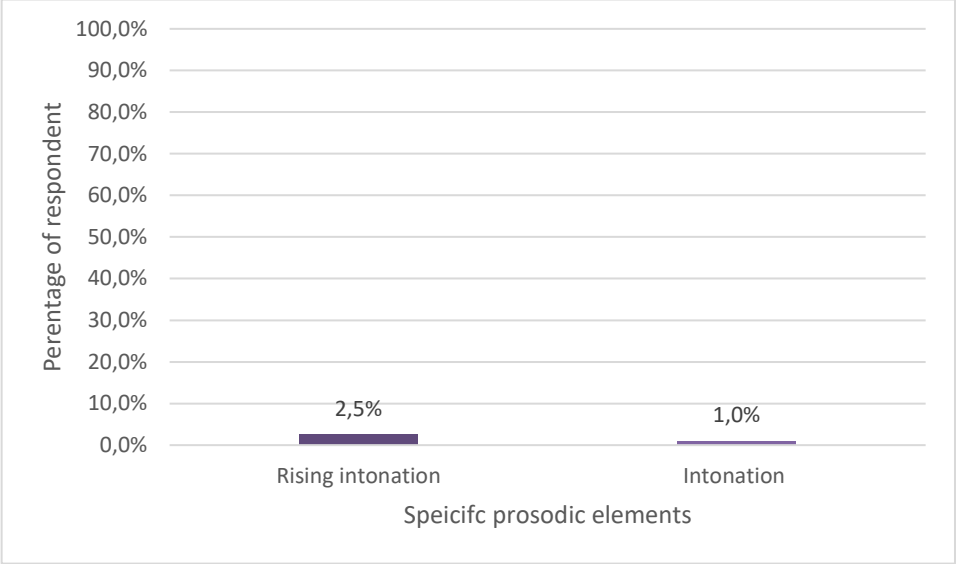

Figure 10.5: Prosodic elements cited when answering the question: Can you name something specific to Canadian English? Using your own words, list some features of Canadian English.

Only seven participants mention prosodic features; among them five identify a *rising [intonation] at the end of the sentence* as a typical Canadian feature (2.5%) and two note a particular intonation in CE (1%) (Figure 10.5). The identification of rising intonation at the end of a declarative sentence is probably a reference to the phenomenon known as "uptalk", "upspeak" or "high rising terminals", that has been identified in a number of English varieties. It was first reported in the second half of the 20th century in Australian English and in New Zealand English (Guy and Vowiller 1984, Britain 1992, Britain and Newman 1992) and in the U.S. (Ching 1982, Ritchart and Arvaniti 2014). As regards research on CE, Shokeir (2008) documents uptalk in Southern Ontario English and Sando (2009) provides results on different Canadian regional varieties. Shokeir's study is two-fold; it is based on a corpus of 12 native speakers for the production part, and on the responses of six respondents for the perception part. She studies the phonetic nature, semantic interpretation, and evaluation of the different rising contours in Southern Ontario English. Her study reveals that women use uptalk more than men, but the phenomenon is stable according to age (2008: 19). When participants are asked to interpret uptalk, men believe that uptalk is used to express certainty and finality, which are traditional functions of uptalk, more than women do (2008: 21). Shokeir concludes that uptalk is a feature of CE, but that further research is needed (2008: 23). Although her corpora are rather small, her study provides a good basis for a first investigation of uptalk in CE. Similar findings to Shokeir's (2008) are found in Sando's (2009) study which investigates uptalk in a corpus of 25 speakers. She demonstrates that upspeak is favoured by women, but contrary to Shokeir's findings, Sando's analyses reveal that younger speakers favour upspeak more than older speakers do (2009: 11). Sando also found that upspeak occurs more frequently in spontaneous

speech, as spontaneous speech has more room for pauses. In brief, uptalk is a documented characteristic of CE, and particularly of Southern Ontario English, so it is not surprising that survey respondents notice it, but it is attested in other varieties of English, which explains why it has not been presented in the literature review as a defining feature of CE.

Finally, two respondents mentioned the phrase *done my homework* (1%) (see Figure 10.1), they may be referring to the CE construction of "done" associated with the auxiliary "be" and a direct object to express a resultative interpretation (e.g., I am finished my homework) (Hinnel 2012, Yerastov 2016) (see Chapter 2, section 2.2). No other grammatical features are mentioned by respondents, which aligns the view of non-linguists with the descriptions evidenced in Chapter 2: CE shares most its grammatical features with other varieties of English ("universal vernacular", Chambers 2004b) and does not stand out as having particular features of its own. This confirms Walker's observation that "unlike lexical and phonetic features, which speakers of English are generally aware of to some degree and serve to mark people as coming from different regional backgrounds, grammatical features are less salient in identifying regional or social differences" (2015: 95). Grammatical features are below the level of consciousness, a fact which may explain why only two respondents noted a grammatical feature.

Furthermore, some participants describe specific features of CE but in comparison with other varieties of English either referring to pronunciation, lexical or spelling features. For instance, they pinpoint a different pronunciation from American speakers (e.g., *different pronunciations compared to American English*) but the same spelling as the one used in BrE (e.g., *spelling is closer to British English (colour vs. color)).* Additionally, some respondents say that CE shares some features with both AmE and BrE in terms of spelling or vocabulary (e.g., *Some words used like British English, some like American English; It's probably more noticeable in spelling where we jump from some American spellings (tire) to British ones (colour))*. These comments open up the discussion of CE in comparison with other varieties of English, which is further developed using the answers to questions 20 and 21 in section 10.5.

In conclusion, respondents are aware of CE features. The features they cite are predominantly lexical, including the discourse marker *eh* which is associated with Canadian identity. They also make precise comments on pronunciation and specifically CR, which highlights the prominence of the stereotyped feature. Although spelling is presented as a mix of BrE and AmE forms in the literature, it is seen as a uniquely Canada feature by respondents who particularly insist on the presence of "u" in words such as *colour and favourite*. The next section focuses on the extent to which survey respondents say they themselves sound Canadian.

In response to question 18: *Do you sound Canadian?* 79.5% of the respondents affirmed they do sound Canadian (N=165), while 20.5% of the respondents (N=43) affirm that they do not sound Canadian. Results are balanced in terms of gender. 80.3% of women say they sound Canadian, and 79% of men. One out of three non-binary respondents, and two respondents who did not disclose their gender, respond in the affirmative to this item. Regarding age, respondents over 40 seem to be slightly more convinced that they sound Canadian (N=96, 83.1%) than respondents under 40 (N=69, 76.8%).

The investigation of the profile of these respondents regarding hockey is as follows. Out of 165 respondents who said they sound Canadian, 80 have already played hockey (79.2%) and 85 have never played hockey (79.4%), so their experience with the sport does not seem to influence whether or not they think they sound Canadian. Similarly, respondents who report not sounding Canadian (N=43, 20.7%) do not diverge from the rest of the sample in their responses to other survey items. For instance, they rank the Canadian accent the same way as other respondents who say they sound Canadian do (see section 10.3).

Although most respondents affirm they sound Canadian, this result still shows that about 20% of the respondents may feel linguistically insecure, and may show Labovian insecurity[89] (Labov 2006b), which means they are aware of linguistic differences between the forms Canadians use and those present in what are considered more standard English varieties (e.g., BrE), causing an insecurity because of the stigmatisation of the linguistic features they use (Meyerhoff 2011). As a result, these speakers may prefer to distance themselves from their own language variety, and to affirm they do not sound Canadian.

The interview of MC1 is an example of this detachment. MC1 said he did not believe he sounded Canadian, and insisted on saying that he did not have an accent, but that American speakers did have one (e.g., *they have an accent*). He also described his own variety by referring to what Americans say about CE.

Americans say, that we say 'aboot'

I don't think I say 'aboot'

We say 'about'

That sounds pretty close actually, doesn't it? "about"

It did, actually. It did, holy shit I just contradict myself there.

[89] For further discussions on linguistic insecurity refer to Chapter 6, section 6.5.

As demonstrated in the results of the production study (see Chapters 8 and 9), MC1 has Canadian realisations of vowels. In the light of those production findings, the fact that he distances himself from sounding Canadian may be explained by linguistic insecurity. Similar findings were evidenced during the 2015 pilot study I carried out, demonstrating that some Canadians did not acknowledge that they spoke CE, and reported speaking another variety of English (e.g., When Americans say I have an accent, I say "*you have an accent, I'm speaking the Queen's English*), or made statements which seemed to suggest that they were not comfortable with their variety (e.g., *our use of English is weak*).

10.3 Perception of the Canadian English accent

Accent judgement is a widespread phenomenon in perception studies, entailing a categorisation of the accented speaker by listeners (see Chapter 6, sections 6.3 and 6.6). Regarding CE, 13.5% of the respondents spontaneously indicate accent when invited to identify features of the Canadian variety (N=28) (Question 19, section 10.2). Among these respondents, 13 provide rather vague descriptions (e.g., *I believe it's the accent we have).*

Previous studies have shown that there is accent-based stereotyping such as the myth of no accent (Lippi-Green 2012) which is connected to the notion of standard language. Indeed, an accent is understood as a means of comparison between two languages (Lippi-Green 2012: 45), the more standard one being the one perceived as accentless. In this sample, seven respondents consider the Canadian accent to be *plain, light, less strong* when reporting CE features, which may imply they consider their accent to be standard.

Five respondents put a name on the accent they try to describe such as in these examples: *it sounds vaguely like a Newfoundland accent, the "Letterkenny accent"* and *Having a Midwest or 'minnesota' type accent).* Moreover, four respondents note the different regional accents *(e.g., different accents in different regions, such as the Ottawa valley accent*) or compare the Canadian accent to other English accents (e.g., *similar to a Minnesota accent)* (N=4). Finally, two respondents describe the Canadian accent as sounding rural (e.g., *You can also recognize a rural Canadian accent*). Some of these answers reflect the options given to respondents in question 22 of the survey.

Description	Percentage
Is different according to the region	31.9%
Is easy to understand	21.6%
Is found in small towns/country	16.3%
Is funny/amusing-sounding	9.1%
Sounds proper	7.9%
Is found in cities	6.2%
Sounds improper	3.4%
Is the same everywhere	2.8%
Is hard to understand	0.6%
Is harsh/aggressive-sounding	0.2%

Table 10.1: Description of the Canadian accent when respondents are invited to choose one to three definitions out of the 10 suggested.

When respondents are specifically asked to define the Canadian accent, using 10 descriptions from the list (Table 10.1), the results reveal three major characteristics, all of which have a response rate higher than 15%. Most respondents consider the Canadian accent to vary according to the region (31.9%), a fact which has been demonstrated: informants are aware of regional variation, and they are even more sensitive to this variation when it is closer to their speech (Preston 2010). In this study, respondents' answers show awareness of the regional variation which has been evidenced in research studies on CE (Boberg's NARVS 2005, the CVS or CR regional variation (see Chapter 2)). The two other qualifications chosen by respondents to characterise the Canadian accent seem somewhat contradictory as they qualify the accent as sounding both intelligible and rural. In this study, Ontarians judge CE so they are asked to judge their own variety. It is the accent they are the most familiar with, as they hear it on a daily basis, on TV or on the radio. Consequently, they report it to be intelligible (21.6%). However, since intelligibility is based on listeners' experience, it is often used by non-linguists to refer to varieties or foreign accent differences which would not be intelligible to speakers who do not speak the variety. Therefore, intelligibility was not expected to be the second most cited definition to refer to the Canadian accent.

The Canadian accent is also qualified by respondents as sounding rural (16.3%), which seems incompatible with the intelligibility just emphasised. Generally rural accents are expected to be judged as less intelligible, since the notion of accent is stigmatised and often associated with rural areas, where speakers are known to have stronger accents because they live in conservative tight-knit communities, where ways of speaking reinforce a local identity. I have two explanations for this result. First, while respondents may believe Canadians usually do not have an accent, they could still believe that Canadian speakers living in rural areas are more likely to have an accent, and that would be what they wanted to highlight in their answer. Secondly, these responses may come from a stereotypical representation of Canadian speakers

as sounding rural. For instance, such the rural accent depicted in the Letterkenny TV series since episodes illustrate small town Canadian life, exaggerating Canadian features for comic effect (see footnote 20).

In addition, 9.1% of the respondents believe the Canadian accent to be *funny/amusing sounding.* This definition implies that the Canadian accent is not socially correct or adequate according to the respondents. As shown in Gasquet-Cyrus's research (2012), non-serious accents are often stigmatised. Gasquet-Cyrus studies the perception of a regional accent in the South of France and observes that the accent is often judged as laughable and that could be an obstacle to employing someone for instance. Moreover, only 7.9% of the respondents describe the accent as sounding *proper*, and the last five characteristics are only selected by 6.2% to 0.2% of respondents and these definitions either refer to opposite definitions than the one chosen by the most respondents (e.g., *is found in cities* and *is the same everywhere*) or to negative characteristics (e.g., *is hard/aggressive sounding*).

When observing the demographic information of respondents, there is an apparent age difference in classifications used to describe the Canadian accent. While the first two definitions are chosen in the same order regardless of the age of the respondents, beginning with the third definition they chose to characterise the Canadian accent, there are noticeable age differences. Respondents over 40 describe the Canadian accent as *sounding proper* (N=24, 28.9%) while it is only chosen by 16 respondents under 40 (12.8%). Only 27.7% of older respondents (N=23) describe the Canadian accent as *to be found in small towns*, but this percentage is much higher among respondents under 40 (N=59, 47.2%). In the same way, respondents under 40 (N=32, 25.6%) answered that the Canadian accent is *funny/amusing sounding* whereas only 14.5% of older respondents (N=12) selected that response. Only 2.4% of older respondents (N=2) report the Canadian accent as sounding *improper,* whereas this percentage is much higher among younger participants (N=13, 10.4%). In conclusion, older respondents are more likely to report that the Canadian accent sounds proper, and younger respondents are more inclined to report that the Canadian accent sounds rural and to consider that it does not sound serious. Moreover, about 10% of younger respondents note that the accent sounds *improper*.

There are apparent gender differences regarding the descriptions attributed by respondents to the Canadian accent. While women respondents rank *sounds proper* in fourth position (N=24, 20%), male respondents rank the Canadian accent to be *funny/amusing sounding* in fourth position (N=23, 28%) and they rank *sounds proper* in fifth position (N=15, 19%). The other major difference is in the fact that male respondents qualify the Canadian

accent as sounding *improper* (N=10, 12%) while only four female respondents chose this qualification (3%).

As regards education, survey respondents with university education propose the same ranking as most other respondents. Respondents with a college degree likewise do not stand out from the general trend, but a slight difference can be found in their classifying the accent equally in fourth position as sounding *rural* and *proper* (N=7, 22.6%). The only major difference is found in the group of respondents with no university education, who describe the Canadian accent as sounding urban (N=5, 31.1%) before classifying it as the option of sounding *rural* and *proper* which are both ranked in fourth position (N=4, 25%). However, in this group there are not many respondents (N=16). Student respondents appear not to be sensitive to the formality of the Canadian accent, as they rank both *proper* and *improper* last (N=2 out of 30, 6.7%).

To conclude, the results suggest that the age and gender of the respondents might condition their perception of the Canadian accent. This can perhaps be attributed to younger respondents being more influenced by stereotypes (Giles 1970). Older and female respondents seem to have a more positive perception of the Canadian accent, an accent which sounds proper according to them. In the results of the general sample the qualification *proper* is only selected by 7.9% of respondents, but it is chosen by 20% of the female respondents and nearly 30% of speakers over 40, while younger and male respondents tend to qualify the accent as sounding rural and funny.

10.4 Representation of Canadian English speakers

Description	Percentage
Friendly	36.0%
Relaxed	31.4%
Trustworthy	13.3%
Articulate	7.2%
Educated	6.0%
Uneducated	4.2%
Inarticulate	1.6%
Uptight	0.2%
Unfriendly	0.0%
Untrustworthy	0.0%

Table 10.2: Description of a CE speaker selected when respondents are invited to choose one to three adjectives out of the 10 proposed (Question 23, *Please choose one to three words that best describes someone speaking Canadian English sounds from the list below*)

Relationships are often observed between accent and attribution of qualities to speakers (Campbell-Kibler 2007: 56). Respondents are asked to rate a speaker of CE, using a list of 10 predetermined adjectives. The results presented in Table 10.2 show that CE speakers are mostly perceived as having positive human qualities: *friendly* (36%), *relaxed* (31.4%) and *trustworthy* (13.3%). CE speakers are then qualified as *articulate* (7.2%) and *educated* (6%). The negative adjectives presented in the list are chosen by fewer than 5% of respondents (e.g., *uneducated* 4.2%). In brief, Ontarians paint a very positive picture of CE speakers.

In perceptual studies, it has been demonstrated that speakers of non-standard or stigmatised varieties rate highly the social qualities of their variety and therefore of speakers of this variety, but that they underreport status-related qualities, such as education, intelligence or prestige (Preston 1999). Even though respondents paint a very positive picture of CE speakers and fewer than 5% of the respondents chose negative adjectives to represent a Canadian speaker, it should be underlined that these Ontarian respondents do not rank CE speakers high on education (*educated* 6%) or enunciation (*articulate* 7.2%). This may reflect a lack of prestige of the Canadian variety in comparison to other English varieties (e.g., BrE), and should be investigated further in future research.

In this survey, the perception of CE speakers seems to be influenced by gender and age, with female respondents and respondents over 40 associating CE speakers with higher levels of competency while younger and male respondents do not. Thus, male respondents perceive CE speakers to be less educated than women do. Male respondents have a slightly different perception. The adjective *uneducated* is chosen more often than *educated,* and these adjectives are respectively ranked in fifth and sixth positions, while this is not the case for women respondents who follow the general pattern given in Table 10.2. Older speakers (over 40) perceive CE speakers as sounding more competent: *articulate* and *educated* ranked in fourth and fifth positions (and *uneducated* and *inarticulate* only reach the sixth and seventh positions), whereas respondents in the under 40 group rank *uneducated* in fourth position before *articulate* and *educated.* This pattern is reinforced among students.

10.5 The place of Canadian English compared to other varieties

It should be noted at the outset of this section that, when invited to name CE features (question 19, section 10.2), 10 participants refer to CE in comparison with other varieties of English without any prompts in that direction. T. The he following questions, 20 and 21, allow for a deeper investigation of this tendency.

10.5.1 British English

When asked whether CE differs from BrE (Question 21), all respondents but one report differences between the two varieties (99.5%, N=206). Out of the 206 respondents who say BrE and CE are different, 24 either do not give explanations or they say they are not able to define the differences (e.g., *I can just hear the difference*).

Respondents' comment	N	Percentage
Pronunciation features	95	46,1%
Vowel sounds	40	19,4%
Consonant sounds	39	18,9%
Accent	37	18,0%
Lexical features	27	13,1%
Status	24	11,7%
Intonation	24	11,7%
BrE sounds more appropriate	19	9,2%
Articulation	16	7,8%
BrE is closer to AmE	13	6,3%
CE sounds more relaxed	6	2,9%
Quality of vowels	6	2,9%
Depends on the regions	6	2,9%
CE accent is flat	6	2,9%

Table 10.3: Linguistic features and social characteristics noted on the differences between CE and BrE by at least two participants.

As indicated in Table 10.3, in response to Question 21 (*Do you think the Canadian accent is different from the British accent? If yes, why? Using your own words can you describe the differences?*) the difference between BrE and CE that is the most often cited by participants is pronunciation (N=95, 46.1%). More precisely, they comment on the way vowels (e.g., *we say many vowels differently*) (N=40, 19.4%) and consonants (N=39, 18.9%) are pronounced. Fewer respondents comment on the quality[90] of vowels (N=6, 2.9%) but there is no agreement in the answers which diverge; some respondents say vowels are rounder in BrE than in CE (e.g., *their vowels sound rounder and fuller*), while others state the opposite (e.g., *British have vowels less rounded*).When describing the consonantal differences, participants refer to two phenomena well described in the literature, the phenomena of rhoticity and t-flapping. Boberg (2010: 132) presents the "r-fulness" of AmE and CE, which contrasts with the Southern British variety that is "r-less". He explains that American and Canadian speakers retain non-prevocalic /r/, with the exceptions of NYC, New England, and parts of the South (2010: 245). Additionally, the

[90] A term in phonetics which refers to the position of the tongue and lips when pronouncing a vowel.

phenomenon of t-flapping, which is the merger of /t/ and /d/ in post tonic and intervocalic position in CE is described by Boberg (2010: 246). Respondents for instance note: *Brit people don't pronounce their "r"s" hard but Canadians do* and, *consonants such as R or T*.

Comments on the vowels are less precise than those made by respondents about consonants. I can hypothesise that Ontarians are less precise in their descriptions of the vowels because the differences in the pronunciation of the vowels are more subtle, and they more easily identify pronunciation differences in consonants (rhoticity and flapping). Ontarians may have less exposure to BrE which may explain these differences in their description. I can also hypothesise that for people with no training in phonetics vowels are more difficult to describe than consonants.

The second group of answers, after pronunciation features, includes all the comments about the accent which consist of evaluative responses that identify a difference in terms of accent between BrE and CE (N=37, 18%). Out of these 37 respondents, 24 point out status differences (11.7%, a proportion balanced in terms of gender: 12 women and 12 men). Thus, BrE is perceived as a more appropriate way of speaking by 19 respondents (9.2%) who describe this variety as being: *more traditional*, *more formal*, *more elegant and often more posh*, while CE is thought to be less sophisticated (N=6, 2.9%) since it is described with descriptors such as *less fancy*, *less proper*, *lazier* and *like peasants*. Participants under 40 make more references to the prestigious status of BrE (N=14, 11.3%) compared to those over 40 (N=5, 6.1%). According to the respondents' comments, it seems that the accent of British speakers is still an accent some Ontarian respondents strive for, as they judge it to sound superior and to be more prestigious than the Canadian accent. These attitudes can be related to the role BrE held in the Victorian era, when BrE was respected and carried values of prestige and education in Canada. It was a marker of the elite at that time, spoken by Canadians of the upper class who were considered to be the most highly educated (Chambers 2004a) (see Chapter 1, section 1.2).

Moreover, six respondents suggest that Canadians have a less pronounced accent, as indicated by qualifiers such as *neutral*, *flatter*, *softer* and *not as thick* (2.9%). Such an assessment exemplifies well the notion that accents are associated with subjective representations in the minds of non-specialists who judge others to have an accent, as they are judging accents in relation to their own (Lippi-Green 2012). Another six respondents note that it depends on which accents are compared, referring either to BrE or to CE (N=6, 2.9%) (e.g., *Depends where in Britain, though*, and *I'm not sure that there is a specific 'Canadian' accent, it's more regional than that)*. Several respondents report lexical differences (N=27, 13.1%). By way of example, they mention *use of words* and *Canadians would say 'I think this is a good*

idea' Britain's would say 'I reckon this is a good idea'. While this perception is based on documented linguistic facts, surprisingly, vocabulary is not the first feature mentioned, although it is easily noticed. Vocabulary is "the most obvious and easily comprehended level of analysis" according to Boberg (2010: 107). For him, "the most readily accessible example of the divergence between BrE and AmE concerns daily vocabulary: the existence of different words for the same things, or different meanings or use of the same words, in Britain and the United States" (2010: 108).

In addition, 11.7% of the participants note that the differences with BrE come from a difference of intonation and stress pattern (N=24) (e.g., *We sound less sophisticated and don't inflect the same way* and *We pronounce words differently and put emphasis on different letters*). Clarity of articulation is also seen as a way to distinguish British from Canadian speakers (N=16, 7.8%). However, the respondents' answers vary from identifying a clear enunciation to a lack of enunciation as illustrated in these examples: *Brits sound like they always have a mouthful [sic] porridge in their yap as they speak, the "BBC English" tends to be clearly enunciated* and *we speak further back in the mouth. Brits speak from just behind the teeth*. Finally, 13 participants suggest that CE is closer to AmE (6.3%): *more American-ish but not all the way there* and *the Canadian accent has evolved away from the British accent, towards something closer to an American accent*. These comments noted by respondents about the similarities with AmE introduce the next section which presents the participants' thoughts about the differences between AmE and CE.

10.5.2 American English

Regarding the potential differences between AmE and CE, 94.7% of the respondents say the two varieties differ (N=197) whereas 5.3% of the respondents indicate they are similar (N=11) (Question 20: *Do you think the Canadian accent is different from the American accent?*). There are no noteworthy observations to make on the profile of the respondents who report that CE and AmE are not different (see Appendix E.12).

Because of a possible Americanisation of the speech of younger Canadians, it is interesting to examine the effect of age on the features mentioned by respondents. The investigation reveals that the distribution of respondents seems to be balanced in terms of age groups (e.g., CR is noted by 9 respondents over 40, and 8 under 40) (see Appendix E.11).

Respondents' comment	N	Percentage
Pronunciation features	98	49,7%
Accent	50	25,4%
Depends on the regions	46	23,4%
Vowel sounds	37	18,8%
AmE Southern variety	21	10,7%
Lexical features	21	10,7%
Diversity of accents	20	10,2%
"o" and "a" sounds	18	9,1%
CR	17	8,6%
Sounds similar closer to the border	14	7,1%
Intonation	11	5,6%
Enunciation	2	1,0%

Table 10.4: Linguistic features and social characteristics noted on the differences between CE and AmE by at least two participants.

As can be seen in Table 10.4, in response to Question 20 (*Do you think the Canadian accent is different from the American accent? If yes, why? Using your own words can you describe the differences?*), at least 20% of the respondents report the following differences: the pronunciation (49.7%, N=98), the accent (25.4%) and the fact that the distinction between CE and AmE heavily depends on which regional varieties are compared (23.4%). As for the pronunciation features, 18.8% of respondents report a difference in the pronunciation of vowels (N=37) and especially the /o/ and /a/ sounds (e.g., *our o sounds are pronounced more "aw" and American is pronounced "ah"*) (N=18, 9.1%). In addition, some respondents also declare that CR, without using this linguistic term, distinguishes CE from AmE (e.g., *the ou's are definitely pronounced more than we like to admit*) (N=17, 8.6%). This result is balanced in terms of gender, as it is noted by eight female and nine male respondents. According to 25.4% of the respondents (N=50, 29 male and 19 female respondents and 2 third gender/non-binary participants), accent is a feature which differentiates CE from AmE (e.g., *The classic Canadian accent is thick, I think there are many Canadian accents and many American accents and there are differences between each* and *Accent is different*). The term *accent* seems to be employed by non-specialists when they do not know how to describe linguistic differences precisely.

Unlike BrE which is perceived as being regionally diverse by only 3% of the sample, AmE is described by Ontarians as exhibiting a great diversity of accents (N=20, 10.2%). According to 46 participants, these regional differences depend heavily on which regional accents are compared, some of them sounding more or less the same or different to CE. (e.g., *Actually, it depends where in America or Canada you are referring to*) (23.4%). The Southern U.S. variety is described as distinctive because of a *drawl* (10.7% N=21) The distinctiveness of

the Southern variety is attested linguistically (Boberg 2010: 124). 14 participants suggest that varieties spoken closer to the border sound similar (e.g., *The accents definitely blend closer to the border, Not so different from states close to the border, but very different from southern states*) (7.1%).

Moreover, 21 participants indicate lexical differences as they report different use of words among these varieties (10.7%). Fewer respondents report a difference in intonation (N=11, 5.6%) and enunciation (N=2, 1%).

While Gold and Tremblay (2006: 257) show that Canadians tend to define their variety with respect to AmE and not with respect to BrE, this study reveals that Canadians seem to perceive that CE has evolved away from both varieties of English. Participants consider CE to be different from both BrE and AmE and are aware of many linguistic differences. Thus, this section has shown that "pronunciation" is the most frequently cited contrastive feature when Ontarians compare their variety to other varieties of English, whether it is in comparison with BrE or AmE. Due to the proximity of CE and AmE, the sharing of a national border, respondents may be more frequently exposed to American speech. As a result, they are much more precise, and provide rigorous examples (e.g., the description of vowel sounds and CR) when describing CE in comparison to AmE. When CE is compared to BrE, the main differences can be found in the perceptions of consonants and vowels; with the distinction remains in the vowel sounds when Ontarians compare CE to AmE. Respondents seem to have less exposure to BrE to draw on in their comparisons, and consequently they are not as specific in their descriptions.

Another difference that can be noted in the perception of the comparison between CE and BrE and AmE is that the CR variable is only mentioned when commenting on differences with AmE, as it is not mentioned at all in comparisons with BrE. This can be explained by the fact that the stereotype based on CR comes from the U.S.

Lexical features are shown not to be the most perceived distinctive characteristics by the respondents, no matter which variety is compared to CE. This may be confirmed by Llamas' study (1999: 103-104) who showed that respondents are not fully aware of the lexical features they use, and often note the use of a different lexical item when they have just heard it. On the other hand, many participants refer to social traits when comparing CE to BrE, especially the status and the latent prestige of the British variety. In fact, BrE is still perceived as a prestigious variety whereas CE is seen as a less formal way of speaking by some respondents. Yet, Ontarians do not note this difference when comparing CE and AmE. These varieties are not found to be different according to their status, but they are described as differing in linguistic

features instead. Even though these two English varieties are geographically close, these Ontarian respondents are aware of their linguistic differences. The analysis of the answers has shown that CE is in no way indistinguishable from other varieties for Ontarians.

To conclude, this chapter has demonstrated that Ontarians are familiar with CE and they mainly refer to its specific linguistic features, principally its lexicon, its pronunciation and its spelling. The Canadian accent is perceived as being heterogenous and intelligible while also sounding rural to many respondents. In parallel, respondents show positive attitudes towards speakers of CE, with desirable personality traits emphasised in their descriptions: *friendly, relaxed* and *trustworthy*. As regards differences between the Canadian variety and AmE and BrE, respondents comment principally on pronunciation differences. Additionally, according to some respondents the British accent still carries prestige compared to CE, while the status of AmE is not commented on by any respondents in this study. Instead, informants focus on linguistic features which distinguish their variety from AmE, for instance using the pronunciation of vowels, and particularly CR.

To further examine the degree of consciousness of the respondents, I apply Preston's (1996) criteria[91] to the answers of the respondents of this study which demonstrates that respondents are highly aware of the Canadian variety. First, in terms of "availability" and "accuracy", respondents comment on the stereotyped variants, but they also report common features of CE, even if some variables remain unavailable to them, such as the low back merger and the CVS, two variables that are known to occur below the level of consciousness. Overall, respondents can refer to variables present in their variety. The descriptions of the Canadian features are accurate for most of the respondents. As for the degree of "detail" of their answers, it really depends on the respondent. Some of them are very precise and others quite vague, and it also depends to a certain extent on the time they dedicate to responding to the survey. Preston's last criterion, "control", is not easy to rely on while studying the results of a survey as Preston expects informants to perform some aspects of the variety they describe, i.e., to imitate them. In this survey study, some respondents quoted some speech with quotation marks as if it was spoken, but this criterion cannot be taken into consideration.

[91] These criteria are presented in section 6.4.

Chapter 11 Ontarians' awareness of a distinct Hockey English variety

This chapter presents the responses to the survey items pertaining to HE, and addresses the following research question: Do Ontarians think there is a distinct variety of Canadian English that is spoken by hockey players? If yes, is Hockey English (HE) perceived as sounding typically Canadian? I analyse the effects of age, gender, level of education and hockey background on respondents' answers on these items but, given the insufficient number of respondents in each occupation group, I do not analyse eventual effects of this social factor.

11.1 Ontarians' awareness of a distinct Hockey English

In response to question 24 (*Do you think hockey players have a specific way of talking. In other words, is there such a thing as "Hockey English" in Canada?*), 167 respondents (67.1%) acknowledge there is a way of speaking English in Canada that is associated with playing hockey, whereas 32.9% do not agree with this statement (N=82) (Question 24). Further questions about HE are presented only to participants who responded in the affirmative to this item. As a result, the questions of this section are answered by 167 participants. I first present these participants in terms of gender, age, education, occupation and hockey background.

Although women have a higher response rate in the survey (57.4%), among respondents acknowledging HE, there is a slight majority of men (51.5%). Thus, 86% of the male respondents of the corpus report a variety spoken by hockey players, and 53% of female speakers. The number of respondents who acknowledge HE decreases as the age of respondents increases: 76.7% of respondents under 40 but only 52.5% over 40. There is no apparent effect of the level of education over the respondents' answer; the same percentage is found for respondents either with or without university education (68.4%) and slightly fewer respondents among college degree holders (58.8%) affirm that hockey players have their own variety.

Since I am interested in the hockey community, the hockey background of respondents who affirm that hockey players speak their own variety of Canadian English is relevant to this study. In order to distinguish in-group and out-group views of HE. The results show that, among those who have already played hockey, 80.5% claim that there is a HE, while among the participants who have never played, only 54% of the respondents give this response. This affirmation is even stronger among respondents who are currently playing hockey (88.2%).

In conclusion, while the majority of respondents report that hockey players speak their own variety, the existence of a Canadian hockey English appears to be acknowledged more by male and younger respondents. This observation is consistent with the view that hockey is still a male-dominated sport. This view increases among respondents with some experience playing hockey, those who have already played hockey once in their life and those who are currently hockey players.

While HE has not received much attention in linguistic research, many participants appear to be convinced that HE exists. As stated in Chapter 2, section 2.3.4, there is a gap in the literature, and research has exclusively focused on lexical features (Barber 2008, Bray 2015 and Bednarek 2009). Only a few studies examine HE, for instance, MacDonald and Lafrance's research (2018: 5) focuses on the stereotype of hockey players and only make one comment on language, the use of "beauties" and the addition of "y" to the end of surnames. However, both Barber (2008) and Bednarek agree that hockey terminology has entered the everyday vocabulary of Canadians.

In my study, this is well illustrated by the interview with KB1 who affirms that there is no longer a HE while suggesting, however, that there used to be such a variety. She argues that hockey players are more educated and articulate than they used to be, and that their speech has evolved so HE is not different from CE anymore. She suggests that HE, when it was spoken in the past, was a form of low-educated and inarticulate speech used by hockey players:

> *I think, no, because hockey players are more, diverse maybe, than you might expect. I think the group of people that I play hockey with, are businessmen and, and, several women are teachers so er, we're not the hockey players from you know back in the day, you know. When, when they had no education and they, they got a tele, they priced for winning the Stanley Cup with a television set, that's. (laughing) they all had extra jobs because you know, hockey didn't keep them kinda thing and it stayed like that until the 90's before there was serious money made in hockey so. Now players, Harvard have a really excellent hockey team. So I think hockey players have more education than they used to. And even if you listen to them being, when they're interviewed. I've noticed that, when they're interviewing hockey players on the television, that they're sounding more and more mh what's, articulate all the time, their, ya, their vocabulary and their speeches have improved tremendously over the years so the level of education has raised.*

The second question of this part of the survey asks participants whether they themselves speak HE (Question 26, *Do you speak "Hockey English*"?). Only 34.1% of the sample give an affirmative answer (N=57), while most of the respondents deny speaking HE (65.9%, N=110).

In this section, I offer a discussion on the profile of the respondents who affirm that they speak HE. Out of the female respondents who confirm the existence of HE, 22.4% admit to speaking HE. This percentage is doubled among male respondents (44.2%). Among

respondents under 40, nearly 40% report speaking HE, but only 25% of respondents over 40 do so. There is no apparent effect of the level of education. Furthermore, 89.7% participants who say that they do not speak HE also say they have never played hockey (N=61). However, among respondents who report that they have played hockey at some point in their life, the results are more balanced, with almost equal chances of someone claiming that they do (N=50, 50.5%) or do not speak HE (N=49, 49.5%). This percentage increases with current players (66.7%), which may suggest speaking HE is linked to the level of engagement in the sport. In fact, the proportion of participants who report speaking HE decreases with increased distance from a hockey player identity. Among the respondents who report speaking HE (N=50), 66% respond in the affirmative to the question: *Do you identify yourself as a hockey player?* (N=33). Additionally, a similar pattern can be observed in the importance attributed to hockey among participants who report speaking HE. The vast majority consider the sport to be either "*important*" (50%) or "*very important*" (46%) while only 4% select the option "*not that important"*. However, the length of time they have been playing hockey does not seem to be correlated with their answer in asserting they speak HE (respondents who have played 11-20 years (50%), more than 30 years (14%)). In brief, these observations show that when respondents have played hockey, they are more likely to affirm that there is such a thing as HE and to recognise that they speak this variety of English. HE seems to be a means of recognition as a member of this CoP. To further illustrate these observations, I can take into consideration RS1's answers throughout her interview when she talks about hockey players' talk:

Fieldworker: Do you think there is a hockey players' way of speaking?

RS1: When together ya

Fieldworker: With other friends outside of hockey?

RS1:It's like, hard to explain, but I feel like, when I hang out with my teammates, we almost sound like comedically Canadian, so like, we almost like, drawl more of an accent with each other like, it's like, I don't know, it's really weird, cause it's like there, but it's not like something that I exercise in my daily life, so when I'm hanging out with my teammates like we call each other 'hosers' and like stuff like that like like, oh like, 'buddy your hands are dust[92]'. We just say like different things to each other that like I wouldn't say to my friends who don't play hockey and we very much like feed off of each other, so like, if one person is talking like that like then we're all starting, doing it.

Fieldworker: Is it the same in your football team?

[92] A duster is a player who does not get a lot of ice time because they are not as skilled as other players.

RS1: The only one who I talk like that is a girl who I play hockey with, we're almost like an act, but like we're not doing it on purpose this is just, we just, ya we just like feed off at each other's it's really weird but it's natural so.

While RS1 says that there is a way of speaking associated with hockey players, she highlights that it only occurs when hockey players are together. She uses her own experience to illustrate her point, explaining how her speech changes when she is around other hockey players, even going so far as to say that it almost sounds "like an act". Interestingly, in the course of her answer, she points to several features of HE that I also found in the answers of the respondents in the survey[93], such as the fact that it sounds *comedically Canadian*, that they *drawl more of an accent*, that they use specific hockey terms, and that they accommodate to each other. Unlike RS1, the participants in this perception study judge a variety that they do not speak themselves. In light of this, it is all the more interesting to discover what features and representations they associate with HE, which is the focus of the next section.

11.2 Linguistic and social markers of Hockey English

Even though the question (Question 27, *What does a hockey player sound like?*) encourages respondents to identify features of spoken HE, the participants (N=153) refer to a range of linguistic features and a few provide social characteristics. I first discuss the linguistic features of HE noted by respondents (see Table 11.1).

Linguistic comment	N	Percentage
Lexical features	89	58,2%
Hockey slang	33	21,6%
Overly Canadian sounding	9	5,9%
Intonation	9	5,9%
Lack of articulation	7	4,6%
Structure of sentence	4	2,6%
Fast speech cadence	2	1,3%

Table 11.1**:** Linguistic features of HE noted by at least two participants in response to the question *What does a hockey player sound like?*

The most cited linguistic features are lexical (words and expressions) (N=89, 58.2%) (e.g., *While I think it is more that they have their own way of speaking with sport specific terms and phrases and abbreviations, They have fancy words for hockey things and I am so confused when they use them, They have their own colloquialisms and It's not what they sound like, it's the phrases they use).* The most frequently mentioned description of hockey players is that they

[93] I must clarify that these comments cannot be from RS1 because she is a speaker of the corpus. She was identified by an anonymous code (see Chapter 7, section 7.3.2).

use an excessive amount of hockey slang (N=33, 21.6%) (e.g., *Frat boy goofy type with a lot of slang, lot of words that is with '- ey', frequent use of slang and Uses specific hockey lingo*). A higher proportion of female respondents (N=44, 62%) refer to HE using lexical features compared to male respondents (N=40, 51.3%). Respondents give lists of words and use specific examples of players they know, either personally or through the media to exemplify their answers such as in the following examples: *clappers*[94], *top shelf*[95], *tarps off*[96], *celly*[97], *snipes*[98], *getting pucks deep*[99], *wheel*[100], *5-hole*[101], *dangles*[102], *ferda boys*[103], *rocket*[104], *twig*[105], *stay out of the box*[106]. While the question aimed to look at phonetic features, the answers support the fact that lexical features are the principal elements identified by non-linguistics (Walker 2015: 62); for most of the respondents HE is represented through its terminology (more than 45%). While hockey players can be expected to be familiar with this slang, it is not unexpected, considering the prominence of hockey in Canadian popular culture, that respondents outside of the hockey community also note such lexical characteristics, particularly if they do not fully understand hockey players. The fact that non-players can refer to hockey slang also raises the question as to whether HE is limited to the sportsground (see section 12.4, question 29). Moreover, researchers have shown that hockey vocabulary is included in the stereotype of hockey players (MacDonald 2012). Robidoux (2001: 129) suggests that this vocabulary is

[94] https://thehockeywriters.com/how-to-talk-like-a-hockey-player/ a slapshot, in reference to someone with a powerful slapshot or a slapshot that results in a goal.
[95] when an offensive player shoots high in an attempt to beat the goaltender by putting the puck in the top part of the net. https://livelearn.ca/article/about-canada/hockey-terms-and-lingo/
[96] Taking one's shirt off
[97] A celebration after a goal that is more than just raising your arms. Fist pumps, jumping against the boards, riding the stick and down-on-one-knee are popular cellys. When overdone, a celly can become a target for trash talk. (benderdictionary bleachereport)
[98] a powerful or well-placed shot that results in a pretty goal. Every bar down shot is a snipe, but not every snipe goes bar down.
[99] "Deep" refers to behind the net, below the goal line, and in the corners. Some of the dirty areas, if you will. https://www.vice.com/en/article/7x3qvg/a-guide-to-understanding-all-the-cliches-youll-hear-this-nhl-season
[100] To wheel is a term often used in the phrase "turn and wheel", meaning turn and go—either skating full force or to turn and fire a clapper. (benderdictionary bleachereport)
[101] The space between the goalie's legs. Frequently used to refer to where a player attempts to shoot the puck past the goalie. https://www.sportsfeelgoodstories.com/hockey-slang-canadian-style/
[102] A dangler is a player who can just dangle the opposition. A dangle is much like a deke but more than just a head fake, the player must embarrass the opposing player by moving the puck in and around the opposing player with his stick—almost "dangling" the puck in front of him. (benderdictionary bleachereport)
[103] Commonly used among hockey players. It means "For the" for short. Like ferda boys and for the boys. Also used to describe someone as a good friend or something that sounds cool (Urban dictionary). Urban Dictionary is an online dictionary which was founded in 1999. While it cannot be attributed the same authority as an established Dictionary, it is crowdsourced and entries are accepted by its users (Wortham 2014).
[104] In hockey, a male player whose physical appearance and on-ice skills combined cause men and women alike to become aroused. Urban dictionary
[105] hockey stick, even though none are made from wood anymore. https://thehockeywriters.com/how-to-talk-like-a-hockey-player/
[106] There are all cliché phrases which could be heard in hockey interviews: a way to say the other team was more willing to win the game, a way to say players must get offensive, and a way to refer to the penalty box.

oriented towards violence and is used to affirm masculinity. Using Gong[107] catalogues, MacDonald and Lafrance (2018: 13) have demonstrated that hockey vocabulary represents 63% of the entries and that it plays an important role in the representation of hockey players. However, some respondents' answers describe characteristics of spoken language, even if they are indeed less numerous. Nine respondents note that hockey players sound overly Canadian (5.9%), (e.g., [an] *exaggerated Canadian Accent that can sound almost a cartoonish stereotype of a Canadian from a small rural town, The stereotypical Canadian accent in my opinion, a slightly more exaggerated version of a typical Canadian accent and Some features of Canadian English get heightened, sometimes to the point of exaggeration*). Intonation is mentioned by nine other respondents (5.9%), but they do not agree in their description of this feature they associate with HE (e.g., *tone is up and down and Musical inflection*) or (e.g., *monotone*). The same reference was made by respondents to describe features of CE (section 13.1.2). In addition, seven respondents describe a lack of articulation as being a characteristic of hockey players' speech (4.6%) (e.g., *Inarticulate, Not terribly articulate, and A lot more mumbling*) and four respondents note a particular structure of sentences (e.g., *different phrasing of sentences and maybe the sentences are shorter and more direct*) and two respondents note a faster speech cadence than other Canadians (e.g., *Out of breath and fast*).

These linguistic features may have been noticed in post-game interviews with professional hockey players. These professional players are being mocked since they are not seen as being good at conveying a clear message. They tend to sound artificial and internet users regularly spoof these interviews[108].

Linguistically, HE evokes a range of linguistic variables for the respondents, suggesting that these variables are markers of this sociolect (Crystal 1971). On the other hand, Table 11.2 illustrates the answers provided by several respondents that include social characteristics intended to define hockey players themselves.

[108] https://nationalpost.com/sports/hockey/nhl/why-nhl-players-speak-in-cliches-during-interviews-and-how-hockeyspeak-developed-over-generations.
https://www.google.com/search?q=spoofed+hockey+interviews+canada&sxsrf=AB5stBhxkcyoI01vDafUlsCxKS7MLI4Mag:1688976922433&source=lnms&tbm=vid&sa=X&ved=2ahUKEwiR6_qr2YOAAxWTTaQEHaytBV8Q_AUoAXoECAIQAw&biw=1280&bih=577&dpr=1.5#fpstate=ive&vld=cid:9dd75a3c,vid:PJduSRcJRRo

Metalinguistic comment	N	Percentage
Sound uneducated	27	17,6%
Sound rural	17	11,1%
A bro/ frat language	15	9,8%
Positive references	10	6,5%
Letterkenny	10	6,5%
Sound aggressive	6	3,9%
Sound young	6	3,9%
Sound relaxed	5	3,3%

Table 11.2: Social characteristics of HE noted by at least two participants in response to the question *What does a hockey player sound like?*

Respondents define hockey players as sounding uneducated (N= 27, 17.6%) (e.g., *An idiot for the most part*, *Someone who has been hit in the head with a puck too many times*, *Less intelligent than an average Canadian* and *Less educated*) (14.1% women (N=10) and 21.8% men (N=17) and sounding rural (N=17, 11.1%) (e.g., *Exaggerated rural Canadian accent*, *They just sound like they've grown up somewhere rural* and *Like a rural farmer*). Such comments are given by 12.7% of women and 10.3% of men responding to the survey. This reference to hockey players being uneducated is also underlined by Macdonald and Lafrance in their study as they describe hockey players as being "indifferent to intellectual achievement" (2018: 5). Moreover, they point out that a hockey player "speaks and acts as though he is mentally and physically tough and is seen by others as simple and superficial" (2018: 5). This echoes KB1's interview cited above; she believes that there is no HE because hockey players are educated nowadays. However, her view does not seem to be unanimously accepted. In fact, MacDonald shows that hockey players are perceived as lacking intellectual depth, a stereotype which circulates among players themselves (2012: 97-100). In order to better investigate the stereotype of hockey players, MacDonald and Lafrance analyse the only two Gongshow magazines which were published in hard copy (2018: 12-13). They seek to determine whether these magazines spread ideas which match the stereotypical representation of junior hockey players. The authors found that these magazines are saturated with stereotypical representation of hockey players. Among the main themes they note: alcohol consumption, indifference to education, lack of intelligence, partying, mental and physical toughness, and hockey players' vocabulary (2018:12-13), which definitely match the description of the player stereotype made earlier by MacDonald (2012). In the same vein, to live the "Gongshow" life means to be an "out-of-control young man" (Lafrance and MacDonald 2018: 1-2). However, these stereotypes are not all accepted by hockey players themselves (2018: 19) and the stereotype of hockey players is less rigid than the general public may think. While Gongshow seems to be a reference in terms of hockey players

in Canada, it was not cited by respondents while being asked questions about HE, but one respondent refers to it when reporting CE features (section 10.2).

Both respondents and the media share the image of hockey as a small-town sport (Walton and Maki 2006). Although Kaida and Kitchen (2020: 224-225) demonstrate that since 2010 the number of players from urban centres has increased, players from suburban areas and smaller towns still have an advantage for making it to the NHL. The authors suggest it is due to the emotional support players can receive in small communities. This view is supported by Côté et al. (2006) who show that a closer-knit community and the accessibility of arenas in rural communities produce better players.

Furthermore, 15 respondents describe HE as *being just like a frat language*[109] and refer to hockey as exemplifying a "bro culture" (9.8%) (e.g., *A stereotypical hockey player sounds like a jock, I'm picturing a Canadian accent with a "bro" jock accent added in*, *The Canadian version of a "surfer bro" and Frat-ish?* and *A Canadian valley-girl equivalent, perhaps*). This image probably comes from the association of hockey with younger Canadians, and once again confirms the stereotype of hockey players (MacDonald and Lafrance 2018). The Urban Dictionary defines "a bro" as a male friend and behind this term there is the idea of a close-knit community. A group of 10 respondents highlight positive perceptions of HE (N=10, 6.5%) (e.g., *Friendly, funny*, *Like you're talking to a buddy*, *Sarcastic, confident, outgoing, light* and *Enthusiastic*) and five respondents underline that HE is more relaxed (e.g., *usually the accent seems somewhat relaxed but might be considered to sound unintelligent* and *more relaxed*). It is interesting to observe the profile of the respondents who make these positive statements about HE. Out of these 10 respondents, seven have played hockey at some time in their life and are still playing, which may account for their positive representation of members of this community as they are themselves members. Even so, the stereotype of the typical hockey player conveys a rather positive image for members of this community; hockey players are described as being outgoing. Ten respondents make direct references to the Letterkenny TV series (6.5%) (e.g., *The boys from Letterkenney*, *Example of characters from Letterkenny* and *Like the guys from Letterkenny*). In their research Macdonald and Lafrance (2018: 1) present TV representations of hockey players such as in Letterkenny (Tierney 2016) or the Québécois film *Les Boys* (Gaudreau and Tinell 1997).

Two groups of six respondents note the aggressivity and profanity of hockey players' speech (e.g., *somewhat aggressive* and *more profanity- hockey terms*) and others note that

[109] "Frat" is the shorten informal form to fraternity, a social organisation of male university students in Canada and the U.S, and therefore refers to the language used by members of these fraternity communities.

hockey players speak like youngsters (e.g., *More childish* and *Teenish, like people who haven't grown up much*). Historically, while the physical toughness of hockey, with its role in asserting Canada's autonomy, may have been a factor in the fact it was chosen as the national winter sport for Canadians, (see section 3.2), the violence of hockey has now come to be seen as one of its greatest shortcomings (Robidoux 2001). Also, the association with young people mentioned by respondents is probably linked to some extent to the media coverage of youth hockey and the fact that hockey is popular among youngsters.

A closer examination of the results shows that features noted by respondents appear to be conditioned by age. Indeed, to sound overly Canadian is exclusively quoted by younger respondents (8.7%). In addition, a considerable proportion of respondents under 40 mention hockey slang (26.9%) while only 10.2% of respondents over 40 mention it. Younger respondents are more likely to be in contact with such slang as they frequent younger hockey players in schools. In the same vein, they tend to characterise HE as a "bro/frat language" (11.5%), a proportion which is smaller among respondents over 40 (6.1%). This response could be explained with reference to the same reasons, as younger Canadians are probably more sensitive to the "bro culture" represented in hockey. On the contrary, for example, older respondents are more likely to describe hockey players as lacking articulation (8.2%).

While this section has shown that without access to actual speech samples, participants are more likely to draw features from stereotypes or representations they hold about the speakers of this variety or the variety itself, Section 12.3 gives a more complete picture of the description of HE and shows how respondents can be very precise when describing HE features when they have just heard some speech samples.

11.3 Perception of gender conditioning of Hockey English

This section presents the gender associations respondents make regarding HE in response to question 28: *Do you think there are differences between men and women hockey players' way of speaking?* 52.1% of respondents (N=87) gave a negative answer, 65.5% (N=57) of them being male respondents, implying they do not think gender conditions HE. This result may suggest that men perceive HE differently from women. Hockey is known to be a male-dominated sport, and that may explain the divergent perceptions of men and women. Conversely, 47.9% of participants (N=80) responded in the affirmative, indicating they think there are differences between women's and men's HE. Among these respondents, 60% are female (N=48 out of 80), and 36.3% are male. Investigation of the age of the respondents shows that there is no apparent correlation with age: the number of respondents who report gender

differences in HE is similar to the group which does not report gender differences. As regards education, the responses from participants with higher education are balanced between either believing there exist gender differences or denying there are any gender differences in HE. However, for respondents with no university education, 85% think there are no gender differences in HE. It should be noted that there is a potential interaction between this social factor and gender, as out of these 13 respondents, 10 are male speakers.

Respondents' comment	N	Percentage
Women's HE has less slang	16	23,9%
Women's HE is more standard and educated	16	23,9%
Men's HE is more aggressive and derogatory	16	23,9%
Men speak HE exclusively	12	17,9%
Women speak HE to some extent	10	14,9%
Men's HE is more salient	8	11,9%
Women's HE is less exaggerated	7	10,4%
Men's HE expresses identity and masculinity	7	10,4%
Men's HE is more stereotypical	6	9,0%
Men's HE is more rural and less intelligent	4	6,0%
HE is young way of speaking	2	3,0%

Table 11.3: Gender differences noted by at least two respondents who believe HE is spoken differently by male and female hockey players (Do you think there are differences between men and women hockey players' way of speaking?).

The data in Table 11.3 show gender differences identified by respondents who give an affirmative answer to the question on gender differences in HE. Among the answers, the most equally cited answers are that women use less hockey slang than men (e.g., *Women will casually use slang if it's comfortable for them but will tend towards communicating in a way that's understandable by their whole audience)* (23.9%, N=16), that women use more standard language and sound more educated than men speaking HE (e.g., *I think female hockey players speak more standardly, in general*) (23.9%, N=16). Finally, respondents present men as using more aggressive and more derogatory HE than women (e.g., *Males are more harsh*) (23.9%, N=16). In addition to these answers, some respondents (N=12) consider HE to be spoken exclusively by men (e.g., *it's a predominantly male way of speaking*) (17.9%). These responses suggest that there exist gender differences in the use of HE by speakers because HE is not spoken by women. For other respondents, HE is spoken to a different extent by gender groups. Some say that men speak HE with more salient characteristics (N=8, 11.9%), and that women speak a subtler form of HE that is less salient (e.g., *I find female "hockey [E]nglish" has the same patterns/sound but is more subtle)* than that spoken by men (N=10, 14.9%). Following these assumptions, 13 respondents consider that women speak a less exaggerated HE (10.4%) and men a more stereotypical HE (e.g., [*women*] *tend to sound less robotic and stereotypical*

than the male players) (9%). For seven respondents these differences are related to a male hockey identity and masculinity *(*e.g., *women players use 'hockey [E]nglish' when talking about hockey but men players seem to have made it more of an identity and talk like that all the time/in more contexts beyond hockey*) (10.4%). It was also noted by fewer participants that men speaking HE sound more rural and less intelligent than women who do (N=4, 6%).

The perception of HE in terms of gender provides evidence that HE may be slowly moving away from its exclusive hegemonic masculinity, as the majority of the respondents report no gender differences in HE. However, some gender representations persist, and can be explained by the fact that hockey has been a male-dominated sport with gender differences that are well established in hockey culture (Theberge 1997, Gilenstam et al. 2008). This echoes the respondents' answers that men are described as being more hockey-centric, with a higher engagement in the sport compared to women. By presenting themselves as "hockey players" men are projecting masculinity. Indeed, Allain (2008) illustrates how the hegemonic masculinity of hockey is manifested through the physicality of the game and the dominant notions of gender in the CHL (Canadian Hockey League) for instance. Furthermore, Robidoux (2001) demonstrates that HE is often misogynistic, a fact supported by Messner (2002) who describes how gender is performed in the locker room.

A recent scandal has led do great upheaval in Hockey Canada, the national organisation that oversees minor hockey in Canada and controls the majority of organised ice hockey leagues. In 2018, allegations came to light of a group sexual assault that took place in a hotel in London Ontario, involving players who were competing in the 2018 Canada World Juniors players. Reports that Hockey Canada used the national equity fund (from minor hockey fees) to pay out sexual assault settlements led to outrage across the country and to governments and prominent companies withdrawing their sponsorship. A criminal investigation is ongoing at the time of writing of this dissertation. Up until now, the alleged perpetrators of the assault have not been publicly identified, but it is speculated that some of them might currently be playing in the NHL. If criminal charges end up being laid against the alleged aggressors, their identity will be made public[110]. One can expect that Canadian society will continue to focus on diversity and inclusion in its national sport, not only in terms of gender but also ethnic diversity and diversity in terms of gender identity and sexual orientation.

[110]https://www.theglobeandmail.com/canada/article-london-police-given-access-to-hockey-canada-evidence-of-alleged-sexual/
https://www.cbc.ca/news/canada/hockey-canada-audited-financial-statements-released-1.6695731]

There seems to be covert prestige associated with the speech of male hockey players. HE is used as a means to fit in with or belong to the hockey community and to earn respect from the members of this community. On the other hand, female hockey players' speech tends to be associated with the norm. This would confirm previous sociolinguistic research which has demonstrated that women are more likely to use standard variants over non-standard variants (Trudgill 1972, Labov 1990). Respondents perceive women as conforming to a more common CE and being less representative of the hockey community.

The differences present in the game of women's and men's hockey, with a focus on the gendered construction of hockey, have been studied by Theberge (2000). Theberge (2000) interviews 24 girls aged 14 to 18, who play hockey and consider it to be their "main sport". Her study reveals that girls playing hockey face some challenges because of the gendered differences which persist in the hockey community. These girls describe men's hockey as "aggressive" (2000: 504) and insist on the fact that there is no fighting in women's hockey and that body contact is not part of the sport when women play it (Theberge 2000: 512). It seems that girls playing hockey think that the hockey they are asked to play is not "real hockey" (2000: 509). Theberge's participants mention language once in their descriptions of hockey, when they describe women's hockey as "rough" because of the use of "vulgar" language (2000: 506). Theberge specifically shows that men's hockey is centred around the physicality of the sport, a demonstration of masculinity through power and strength. These thoughts seem to be shared by respondents in this perception study.

11.4 Hockey English on and off the ice

According to a small percentage of respondents (N=13, 7.8%) HE is a context-based variety that is limited to locations where hockey is played: *in the locker room*, *on the ice* and *after the game*. However, 92.2% of the sample (N=153) respond negatively to Question 29, *Do you think "Hockey English" is only used on the ice/while playing hockey?* These respondents are balanced in terms of gender (88.2% of female respondents, and 89.5% of male respondents) and relatively balanced in terms of age: 92.2% of respondents under 40 and 82.7% of respondents over 40.

Respondents' comment	N	Percentage
Everywhere	61	40,9%
Among hockey players	56	37,6%
Bar, parties, alcohol	29	19,5%
Players on interviews TV, social media	26	17,4%
Social event	23	15,4%
School institutions	17	11,4%
Casual setting	9	6,0%
Hockey topic of conversation	8	5,4%
Rural areas	7	4,7%
Only lexical part in everyday speech	6	4,0%
Among relatives of players	5	3,4%
Depends on age	3	2,0%

Table 11.4: Places or contexts in which at least two respondents believe HE is spoken (*Do you think "Hockey English" is only used on the ice/while playing hockey?*).

Respondents who answered "no" to Question 29 are then asked where HE is spoken. Table 11.4 presents the answers and indicates a contrast between two most cited contexts. On the one hand, respondents consider HE as a variety which is spoken everywhere (N=61, 40.9%) (e.g., *in public and private when not playing hockey*, *literally everywhere*, *everyday conversations*). Some respondents add that it is only the lexical part of HE which carries over to daily speech (N=6, 4%) (e.g., *I think that regardless of whether or not one is on the ice that the phrases and terms will carry over into everyday life*). On the other hand, the second most frequent response is that HE is spoken among players themselves (N=56, 37.6%) (e.g., *between friends who play hockey*, *Usually in the presence of others who speak hockey English* and *Hanging out with teammates).* A smaller group of respondents identify HE as being spoken in environments where alcohol is present, such as: *in bars*, *at parties* and *in pubs* (N=29, 19.5%). Another group of participants highlights the fact that HE can be heard when listening to player interviews on TV and on social media (N=26, 17.4%) (e.g., *Off-ice interviews, on tv and in movies* and *I hear it in interviews all the time*). Moreover, 23 respondents report that HE is heard at social events more generally (15.4%) (e.g., *In social situations when other "speakers" are present*) and 17 participants indicate that HE is spoken in schools (11.4%) (e.g., *My kids have described that they can pick out the hockey boys out of every class).* Fewer groups of respondents report HE to be spoken in casual settings (N=9, 6%) (e.g., *Informal contexts like casual conversation*) and eight participants point out the fact that the topic of conversation must be hockey for a person to speak HE (5.4%) (e.g., *when speaking about hockey*). Seven respondents give geographical references, saying HE is spoken in smaller towns and rural areas (e.g., *I think it's pretty synonymous with rural Canada speech* and *typical small-town Canada*)

(4.7%). Five participants consider HE to be also spoken by hockey players' relatives who follow their hockey activities (3.4%) (e.g., *the families of players*).

It is interesting to note the potential effects of the demographic characteristics of respondents upon their answers to this survey item. A higher number of female respondents note that HE is spoken in bars, at parties, while people consume alcohol (N=17, 25.4%) than male respondents (N=12, 15.5%) and only female respondents mention that HE is spoken among relatives of hockey players (7.4%). Moreover, considering the gender distribution of the two most frequent answers, it can be observed that the respondents' age does not seem to condition their answer that HE is spoken among hockey players (37.3% women and 37.7% men) and similarly "everywhere" is answered by slightly more male respondents (41.5%) compared to 38.8% for female respondents. The data reveal that younger respondents are more likely to say that HE is spoken "everywhere" (nearly 50%) while most older respondents (41.9%) associate HE with members of the hockey community. Furthermore, the data show that respondents who say that HE is spoken everywhere are those with a college degree or with no university education (more than 60%), whereas only 35% of respondents with university education give that response. Respondents with university education tend to be evenly distributed in their responses, with the highest number saying that HE is spoken among hockey players (42%).

In brief, the survey responses described in this section suggest that HE is a variety that belongs to a particular CoP ("among hockey players", 37%), but that use of the variety has expanded beyond the context of the CoP itself ("everywhere" 40.9%). In this way, language is a means of identifying the group a speaker belongs to and reinforces the mutual engagement of the members within their group. As shown by Eckert and McConnell-Ginet (1992: 9-10), "speakers develop linguistic patterns as they engage in activity in various communities in which they participate". However, as argued by the authors, speakers cannot turn off completely a variety they speak ("a way of speaking in a community does not simply constitute a turning on of a community-specific switch" (1992: 9-10)). This may help situate the answers of the majority of the respondents in this study who report that HE can be heard "everywhere". Two interpretations can be given. First hockey players carry over their HE into their everyday speech as it becomes habitual for them. Secondly, HE could be a response from hockey players to project their hockey identity beyond the sphere of the sport itself. Due to the symbolism hockey carries in Canada, hockey players may want to be identified as such. Macdonald and Lafrance (2018: 5) discuss the "role models of young men playing hockey", in the 15 to 21 age group. The speech of these hockey players is broadcast in the media, a fact noticed by 13.6% of the

respondents who associate HE with TV or social media platforms. Moreover, 11% of the respondents say HE is related to drinking alcohol and 6.5% suggest it is linked to participating in social events. Macdonald and Lafrance's research shows that the hockey player stereotype "consumes more alcohol and attends more parties than most of his teammates" (2018: 5). There is clear evidence of the influence of this hockey player stereotype in the respondents' answers.

11.5 Hockey English in relation to Canadian English generally

In order to investigate the research question concerning the overlap of the two varieties, respondents are invited to think about the difference between HE and CE (Question 24, *Do you think "Hockey English" is distinct from Canadian English?*). This question addresses the connections between CE and HE. The results show that 67.7% (N=113) of participants respond affirmatively to the question, whereas 32.3% (N=54) give a negative response. The great majority of those whose response indicates that they think there are differences between CE and HE do not report speaking HE (N=71, 62.8%). Similarly, among the 57 respondents who report speaking HE, 42 (73.7%) say they think there are differences between HE and CE. This result suggests that a respondent's affirmation that they speak HE does not seem to influence their answer to this question.

On the other hand, those participants who think HE is not distinct from CE (N=54) are somewhat less representative of the hockey community. Only 26.3% (N=26) of respondents who have played hockey at least once report that there are no differences between CE and HE. This percentage is much higher among respondents who have never played hockey (N=28, 41.2%). Among current hockey players, only 17.8% (N=8) of respondents report no differences between CE and HE, compared to 33.3% among other hockey players. When I look at their identification as hockey players and the importance they grant to hockey, I obtain similar results, with only 11 respondents who identify as hockey players (22%) reporting no difference between CE and HE. The percentage of respondents who give a negative response to this survey item is higher among respondents who do not consider hockey to be very important (36.8%), whereas only 13.5% of participants who report that hockey is "very important" for them state that they do not think there is a difference between CE and HE (N=5). I suggest that these participants do not have enough exposure to HE to be able to observe and describe how it might differ from general CE.

Respondents' comment	N	Percentage
Lexical difference	85	86,7%
HE is an exaggerated CE	9	9,2%
HE is not understood by non-players	8	8,2%
HE sounds more aggressive	8	8,2%
Difference in intonation	7	7,1%
HE is spoken in the hockey community	7	7,1%
HE sounds more rural	6	6,1%
Pronunciation of HE	4	4,1%
Articulation deficit of hockey players	3	3,1%
HE sounds less formal	3	3,1%

Table 11.5: Linguistic features and social characteristics cited by at least two respondents when they report differences between the varieties of HE and CE (Question 25, *Do you think "Hockey English" is distinct from Canadian English?).*

Table 11.5 presents the answers given by respondents who indicate a difference exists between HE and CE. They situate these differences at the lexical level specifically (e.g., *hockey slang, specific slang associated with hockey ("sauce that*[111]*", "tune him up*[112]*", "celly", etc)* and *Hockey boy slang has always been a thing, they tend to introduce slang into mainstream language. Every slang word that was new/introduced in high school started with the hockey boys (i.e. lit*[113]*, celly, wheeling, etc.)* (N=85, 86.7%). Since every sport has its own terminology which can be incomprehensible for those outside the group that plays it, it is not surprising to read in the answers that lexical features are the linguistic features that most distinguish HE from general CE. Moreover, lexical features are easily identified, and speakers need exposure to understand and be familiar with this hockey vocabulary and the specific expressions associated with the sport.

Fifteen respondents note that these varieties differ because HE is the variety of a specific community. Seven respondents underline that HE is only spoken within the hockey community (7.1%), and HE is perceived as being somewhat exclusive to this community, as it is not comprehensible to those outside of it (N=8, 8.2%) (e.g., *Unless you play hockey or understand hockey, the common Canadian would not understand Hockey English*). This belief is particularly true for women respondents (N=7, 15.6%). For instance, a younger female respondent points out how quickly her cousin adopts new hockey terms that she has to learn in order to communicate with him. She shows that she understands him but some of her friends do not, because of this lexical barrier.

[111] When you give a puck some sauce, you are making it leave the ice, which can make it harder to intercept. https://www.sportsfeelgoodstories.com/hockey-slang-canadian-style/
[112] To give someone an attitude adjustment by beating their ass. Urban dictionary.
[113] A term used to describe something that is cool or exciting. Urban dictionary.

I do not speak hockey English, but cousin [sic] does. He grew up playing hockey and I always attended his games. Every time I see him, he says a new term/ word that I have to learn. It can be a lot to keep up with. The newest thing that he says is "what's sayin" which basically means "what's up" or "what are we doing." For example, he said this sentence to me the other day: "what's sayin? Is marble slab a send?" This basically translates to "what's going on X? Do you want to go to marble slab and get ice cream?" I understand him because I grew up around him speaking like this, however my friends sometimes don't know what he's talking about at all.

Furthermore, despite the lexical differences, some participants support the idea that HE is an exaggerated version of CE (9.2%, N=9) as in the following examples: *A lot of them, including myself, also overdo it with the stereotypical Canadian accent, but then it just becomes how they talk!,* and *Almost a caricature of Canadian English,* and *They sound rehearsed and canned, must follow a certain pattern when talking to the press.*

Once again, respondents elaborate on the representation which circulates from post-game interviews of professional hockey players (e.g., *Every hockey player interviewed post-game could be from the same script. I often joked that they must have to learn the "script" before they get signed).* Table 11.5, indicates that eight respondents, most of them male (N=5, 9.6%) report that HE sounds more aggressive than CE (8.2%). Informants also comment that the intonation of HE is different from that of CE, with examples such as: *raising as a question*, and *upward inflection* (N=7, 7.1%).

In response to this question, smaller groups of respondents also refer to HE as sounding more rural (N=6, 6.1%) (8.9% of female respondents note that HE sounds more rural compared to 3.8% of male respondents). Some respondents describe the differences as being at the level of pronunciation (N=4, 4.1%), and to be due to an articulation deficit (N=3, 3.1%). Some respondents also highlight that HE sounds less formal (N=3, 3.1%). These features may all evoke the idea of rurality that respondents associate with hockey players but which they express on several occasions using different markers.

Observation of the sociodemographic profile of respondents shows that the lexical features which differentiate CE and HE are noted equally by all the respondents regardless of their age. The fact that respondents report that HE sounds overly Canadian is also quite balanced in age, with slightly more respondents over 40 noting this difference (N=3, 10.7%), while 8.6% of the respondents under 40 do so (N=6). Some apparent age-related patterns can be found in the responses to this question. A higher proportion of respondents over 40 say that HE sounds aggressive and rural (N=3, 10.7%) than respondents under 40. Younger respondents, on the other hand, indicate they think HE is spoken within the hockey community (N=6, 8.6%) and is not understood by out-group members of the community (N=6, 8.6%). However, the number

of respondents in these categories is too low to draw definitive conclusions about age effects. Nevertheless, these results point to interesting tendencies that could be explored further in future research. No noticeable effect of education on the features given to differentiate CE and HE could be discerned from an examination of the data.

In conclusion, this chapter has shown that in the linguistic imagination of Ontarians, there exists a particular form of CE which respondents associate with hockey players, a variety termed HE in this study. Indeed, 67.1% of the respondents acknowledge the existence of a variety spoken by hockey players, and they are able to attribute features and discuss the variety in terms of gender as well as to determine the places where HE is spoken. Findings also reveal that respondents who affirm that they speak HE are more likely to be men and younger, to have a certain engagement with hockey, and to be members of the hockey community.

Although respondents were invited to describe the features of spoken HE in terms of how it sounds, they mostly associate lexical features with this variety, pointing out specific vocabulary and expressions used by hockey players. I notice that there are differences in the responses when participants are asked to answer a question based on their own representation or based on actual speech samples. To use Preston's (1996) classification, there are differences in "availability" and "detail" in the respondents' answers. Indeed, when asked to report on the features of HE, respondents refer to lexical features and offer social characteristics (e.g., sounding uneducated and rural) while the respondents note relevant pronunciation differences when they have just heard recordings.

More than half of the respondents believe there are no gender differences in how HE is spoken. However when they do report gender differences, the most frequently cited ones related to women using less hockey slang than men and conforming to a more standard CE, while men use a more aggressive and derogatory form of HE. These perceptions that respondents hold seem to come from the differences to be between men's and women's hockey. The investigation of this variety allows me to observe that HE is believed to be spoken off the ice by 92.2% of the respondents. The two most cited contexts or places where respondents say HE can be heard are: everywhere for 41% and among hockey players for 38% of the participants.

Chapter 12 Non-linguists' identification of Hockey English

In this chapter, I present the results of the series of listening tasks (Verbal Matched Guise Technique) that constitute the last part of the online survey. Responses to these tasks provide information on whether respondents can identify a hockey player using recordings, the features on which they base their identification, and how they evaluate the speakers in the stimuli based on four criteria: education, friendliness, Canadianness and accent. As was shown in Chapter 7, section 7.3.5, the stimuli used in this task were produced by four speakers (two of whom are hockey players and two who are not). To distinguish these speakers from one another, I designed a code to easily refer to each of the stimuli. The code consists of two letters, an underscore and a digit and CR. The first letter indicates whether the sentence was pronounced by a male or a female speaker (F stands for female, M stands for male) and the second letter indicates whether the speaker is a hockey player or not (P stands for hockey player and N stands for non-player). The digit corresponds to the number of occurrences of CR (either 0, 1 or 2 tokens) and CR refers to Canadian Raising (see Chapter 7, section 7.3.5).

12.1 Inaccuracy in identification of hockey players from recorded speech samples

When asked in the Verbal Matched Guise Technique of the survey to listen to 10 short samples of recorded speech and to identify which speakers[114] are hockey players, respondents vary in the degree of accuracy of their answers. The first observation to make is that the respondents have carefully considered whether the speaker is a hockey player or not as none of the respondents have automatically ticked all the boxes in order to identify all speakers as hockey players.

The second observation is that respondents were asked to select one of four options in their response to this item (see section 7.3.5). The most favoured choice was: "I have no idea" (36.01%, N=896), suggesting that participants did not know how to identify a hockey player based on the recorded speech sample. The second most cited answer is "there is no way of telling" (27.90%, N=694), which suggests that respondents did not believe the required information was available in the recording to identify the speaker. Smaller proportions of respondents chose the answers "No, I don't think so", indicating they did not think the speaker

[114] Respondents do not know these 10 recordings belong to the same four speakers.

was a hockey player (18.85%; N=469), and "Yes, definitely" to identify a speaker with certainty as being a hockey player (17.24%, N=429).

Observation of the data shows that the female hockey player in the stimulus with no occurrence of CR (FP_ ØCR) is identified as a hockey player by 47.7% of the respondents (N=119). This surprisingly high number can be explained by the comments provided by the respondents. Indeed, they point to the lexical content of the stimulus which leads them to this identification. In her recording, FP explains what she does during her free time: *mostly just sports*. A number of respondents comment on her use of the word *sports* in the excerpt (e.g., *She said she liked sports*, *talking about sports*) which quite likely primed respondents to say she is a hockey player. As a result, this stimulus is deemed to be biased, and is considered exceptional, since more respondents seem to have considered FP to be a hockey player because of the content of the stimulus, even if they mention other criteria. These other linguistic clues highlighted in the answers are further discussed in the following section.

On the one hand, hockey players are correctly identified by 32.1% for the male hockey player (MP) and 5.2% for the female hockey player. On the other hand, the male non-player (MN) is inaccurately identified as a hockey player by 78.3% of the respondents and he is the speaker who is the most often identified in the sample; similarly the female non-player (FN) is inaccurately identified as a hockey player by 8.8% of the respondents. Both the non-players are identified more often as a hockey player than the actual hockey players in the stimuli.

These results suggest that the participants in the perception study cannot accurately identify hockey players based only on recorded stimuli. Moreover, the data suggest that hockey is still predominantly associated with male speakers in non-linguists' minds, as the male speakers are more often identified as hockey players, whether accurately or not.

12.2 Profile of respondents

Observation of the results shows that respondents identify 429 stimuli as belonging to hockey players and for 333 of these they give an explanation for their choice. It should be noted that raw counts represent a number of answers, since each participant listens to 10 stimuli and may consider each of them to be pronounced by a hockey player. These answers are given by 213 female and 200 male respondents, 10 non-binary and six respondents who chose not to disclose their gender, which represents 15% of female respondents (N=213), 20% of male respondents (N=200) and respectively 34% (N=10) and 20% (N=6) of non-binary and respondents who did not disclose their gender. 19.5% of the respondents are under 40 (N=292) and 14% of respondents are over 40 (N=137). As regards their hockey experience, 19.3% of

these respondents have played hockey (N=237), compared to 15.3% of respondents who have never played hockey (N=192). Therefore, 21.4% of respondents who are currently hockey players (N=128) and 17.8% of respondents who have played hockey but who are not currently playing hockey identified the speakers as hockey players (tables with this social information are presented in Appendices E.48-E.51).

The proportion of respondents who identified hockey players in the recorded stimuli is higher among men than women, higher among younger than older respondents, and slightly higher among respondents who are currently playing hockey. However, there is no noticeable difference in terms of other social factors in the profile of the respondents.

The profile of respondents who are accurate in their identification of hockey players (N=212), i.e., those who only identify the stimuli of the players (MP and FP) as being players, is very similar to the overall profile of respondents who identify hockey players either accurately or not. This sample includes 14.3% of women (N=101), 21% of men (N=103), 40% of non-binary respondents (N=6), and 14.3% of respondents who prefer not to disclose their gender (N=2). As for age, 13% of respondents are over 40 (N=63), 19.9% of respondents are under 40 (N=149). These respondents have played hockey (20%, N=122) or have never played hockey (N=90, 14.5%). Among them, 20.4% are currently hockey players (N=52) and 19.7% are not (N=70). Likewise, there is not much difference between respondents who grant importance to hockey (*important* (N=17, 12.3%), *very important* (N=41, 19.5%) and *not important* (N=64, 24.3%) (Appendix E.52-E.57)

12.3 HE linguistic markers

In this section, I report on the number of participants who identify the speaker as a hockey player, whether their identifications are accurate or not[115]. I then state the number of respondents who explain their choice, as some answers are considered "irrelevant" because they cannot be analysed (e.g., *anyone can play hockey, not really sure why, she just sounds like it and reminds me of hockey friends).* There are also some respondents who did not provide any reason to justify their identification of the speaker.

Broadly speaking, the reasons given by respondents are more precise compared to the answers they give to question 27. These justifications are linguistically oriented. The assumption here is that, as respondents have just heard some speech segments, they will be

[115] Each respondent can comment on several features.

inclined to base their comments upon these excerpts of speech, while in responding to question 27, they are forced to imagine what the variety would be.

As shown in section 13.1, the female speakers are not frequently identified as hockey players, so fewer respondents respond to the open-ended question (*Why do you think so?*). With the exception of the one stimulus mentioned above (FP_ ØCR) which is considered to be exceptional, the comments are made by fewer than 10 respondents, which makes classification of the wide range of answers challenging.

In the sections below, the features respondents noted as triggers of their choice are summarised for each speaker and each stimulus is presented separately. I begin by presenting the female hockey player and then the male hockey player, and I follow the same outline for the non-players.

Speakers who are hockey players (FP and MP)

In her stimulus with no occurrence of CR (FP_ ØCR), FP is correctly identified as a hockey player by 119 respondents[116], which is the highest score by far in the data. Of the 97 respondents who explain their choice, 48 (49.5%) refer to the content of the stimulus, as explained in section 12.1). Nevertheless, there are also 49 other times when her stimulus (FP_ ØCR) is identified as belonging to a hockey player. Among the items that are quoted, 29 respondents comment on her pronunciation of vowels, in broad terms for four of them, and most specifically, respondents note the way she pronounces the words: *mostly* (N=13), *sports* (N=10) and *just* (N=2) (e.g., *the drawl in mostly and not pronouncing the t, o pronunciation in sports* and *just was j-ist, the o in mostly was long and pronounced which is common with hockey vowels. Think 'Baar doown'*). Her intonation is noted by 13 respondents (e.g., *the intonation at the end (where "sports" rises) seems similar to a lot of hockey interviews I've heard as well as her accent*) (N=7) (e.g., *Inflection at the end*). She is also described as sounding Canadian (e.g., *Sounded Canadian, Probably hockey since I think she sounds Canadianish*) (N=6) and five respondents associate her tone of voice with HE (e.g., *had monotonous voice)*. Moreover, her speech is associated with hockey players in interviews (N=4). In addition, RS1 is described as sounding *athletic* (N=4), *rural* (N=3), and unintelligent (e.g., *hoser)* (N=3). A few respondents note the cadence of her speech (N=2) and the fact that she sounds *masculine* (N=2). Other respondents note that she sounds *confident* (N=1), *relaxed* (N=1) and that the pauses in her speech sound like HE (N=1).

[116] 119 respondents composed of 58 women (40.6%), 57 men (57%), 3 non-binary and one respondent who preferred not to disclose their gender. 81 respondents aged under 40 (54%), and 38 aged over 40 (38.4%).

In her stimulus with one occurrence of CR (FP_1CR), FP is correctly identified as a hockey player by 13[117] respondents and seven give explanations. Her accent is noted by two respondents, as well as her tone of voice which is characterised as *assertive* and *harsh*. She is perceived as *confident sounding* (N=1) and the occurrence of CR is noticed by one respondent: *the pronunciation of 'writing'*. Moreover, one respondent says this speaker sounds *Canadian* so she must be a hockey player.

Of the 45 respondents[118] who correctly identified MP's stimulus with no occurrence of CR (MP_ ØCR), as belonging to a hockey player, 38 explain their choice. 21 react to his pronunciation, for instance, the pronunciation of *concerts (e.g., the word "concert" and its pronunciation) (*N=13), the pronunciation of *couple* (N=3), and of *been to* (N=1). Nine respondents perceive an upward inflection at the end of the sentence (e.g., *The upspeak on con-CERTS, he raises his voice at the end of the declarative sentence*). Other features acknowledged include: his *tone* (N=3) and his *accent* (N=4). He is also considered as sounding typically *Canadian* by two respondents (e.g., *Dialect is very Canadian*), and young (e.g., *Sounds like a young guy*) (N=2). Two respondents note the sentence structure and the use of *been to* in the sentence is noted to be curious by two respondents. The speaker is also described as sounding masculine (N=1), unintelligent (N=1), and as sounding like hockey players in interviews (N=1). One respondent comments on his voice (e.g., *The drawling lilt in the voice*).

MP_1CR is correctly recognised to be a hockey player by 13 respondents[119], of whom eight justify their choice. Two respondents mention pronunciation and one respondent specifically points to *the pronunciation of R in 'work'*. The other explanations remain very general. Two respondents note the *accent* (*I think maybe this is a hockey player because of the strong accent*)., and then individual respondents point out his tone (*Just the tone makes it sound very hockey man*), his cadence (*cadence reminds me of interviews with hockey players*), his intonation and his voice (*just the voice*).

The stimulus of MP with two occurrences of CR (MP_2CR), is correctly identified as being from a hockey player by 22 respondents[120]. Out of the 22 respondents, 13 explain their choice. MP is designated as a hockey player because of the way he articulates. He is described as mumbling (N=5) (e.g., *slurring words into each other, not pronouncing words fully, deleting*

[117] 13 respondents: seven women (4.9%), five men (5%), one non-binary. In terms of age 11 of these participants are younger than 40 (7.3%) and 2 older than 40 years (2%).
[118] 45 respondents: 19 women (13%), 24 men (24%), one non-binary and one respondent who preferred not to disclose their gender. 15 respondents over 40 (15.2%) and 30 under 40 (20%).
[119] 13 respondents: six women (4.2%), six men (6%) and one non-binary respondent; 11 respondents under 40 (7.3%) and two over 40 (2%).
[120] 22 respondents: 11 women (7.7%) and 11 men (11%); 16 respondents under 40 (10.7%) and six over 40 (6.1%).

syllables and *Mumbled*). Two respondents refer to his pronunciation, and more specifically CR is quoted by three respondents for his pronunciation of *wife* (N=2) and *South* (N=1). Moreover, his accent is perceived to be that of a hockey player (N=3). Furthermore, two participants refer to his intonation as what led them to identify him as a player, one respondent says that he sounds typically Canadian, and another one highlights that masculinity is what hockey players want to express (N=1). Other features mentioned are sentence structure (N=1), sounding like a hockey player being interviewed (N=1), his tone (N=1) and his voice (N=1).

Speakers who are not hockey players (FN and MN)

Among the 13 respondents[121] who say the speaker is a hockey player, based on her stimulus with no occurrence of CR (FN_ ØCR), nine explain their choice. Their responses include the pronunciation of *pharmacy* (N=2) and the pronunciation of *little bit* (N=2). Additionally, three respondents mention her intonation as a feature of HE. Similarly, the *cadence* of her speech (N=1) and her *voice* were pointed out (N=1). One respondent also acknowledges the *hesitation* in her speech. One says she sounds *sporty* and another respondent reports she sounds like a hockey player in an interview.

Out of the nine respondents[122] who identify her stimulus with an occurrence of CR (FN_1CR) as being pronounced by a hockey player, six explain their choice, and they all have very different opinions as illustrated by the variety of answers. The accent and the content of the utterance are mentioned once, as well as her pronunciation of *to*. The *hesitation*, the *cadence* of her speech, and *the pauses* she makes while speaking are also mentioned. In addition, one respondent says that she sounds athletic. She is also reported to sound relaxed and to have the speech of hockey players in interviews.

Out of the 65 respondents[123] who perceive the stimulus of the MN with no occurrence of CR (MN_ ØCR) as pronounced by a hockey player, 58 give some explanations. 22 respondents indicate that pronunciation made them decide: nine respondents indicate the pronunciation of *party* and eight point out the pronunciation of *forty eight*. Eight respondents designate the features of his *voice*, and two characterise it as particularly *low*. Similarly, seven respondents perceive his *accent* to be that of a hockey player. Six respondents identified the pauses in MN's speech, reinforced by five other respondents who indicate that his use of *uh* and his hesitation sound like HE. In addition, five respondents note the content of the utterance and four react to

[121] 13 respondents: 8 women (5.6%) and 5 men (5%); 8 participants under 40 (5.3%) and 5 over 40 (5.1%).
[122] 9 respondents: 5 men (5%) and 4 women (2.8%); 7 respondents under 40 (4.7%) and 2 over 40 (2%).
[123] 65 respondents: 29 women (20.3%), 33 men (33%), 2 non-binary and one respondent who preferred not to disclose their gender; 44 respondents under 40 (29.3%) and 21 over 40 (21.2%).

the cadence of his speech (N=4). Three respondents highlight that he sounds *very Canadian.* Others also think the sentence structure sounds like HE (N=2) (e.g., *Just the shortness of the sentence and the order of it*, *Shortness of the sentence* and *the shortness of the phrase*) and his intonation is recognised as typical of HE (N=2). Other comments on social factors highlight that the speaker sounds *masculine* (N=2), *relaxed* (N=2), *young* (N=1) and *uneducated* (N=1).

MN_1CR is commented on by 57 of the 72[124] respondents who rate the speaker as a hockey player. Among the answers, 27 respondents notice the pronunciation, very specifically for some of them: *too* (N=17), *here* (N=5). Seven respondents describe the pronunciation of *nice* which is the occurrence of CR: *double vowel sound in nice, something about the way the "i" in nice was shaped* and *he's got the more stereotypical Canadian accent with the 'nice'*. Twelve respondents establish a correspondence between the speaker sounding Canadian and being a hockey player. Moreover, his accent is highlighted by eight participants along with the cadence of his speech (N=5), and his intonation (N=4). The sentence structure is indicated as a clue by four respondents, and the speaker is described as sounding young (N=4). Other respondents note that the speaker sounds as if he is being interviewed; he sounds rural and relaxed, and the content of his sentence and his voice are like those of hockey players. Furthermore, one respondent reports that the speaker sounds confident and another that he sounds athletic.

As for the stimulus of the speaker with two occurrences of CR (MN_2CR), 58[125] respondents identify the speaker as a hockey player, with 40 giving details to support their response. There are many similarities in the answers. Ten respondents account for the use of hesitation such as *uh*, and seven note the pauses in his speech. Pronunciation is indicated by eight respondents such as the pronunciation of *front* (N=5) and the pronunciation of *about* is noticed by seven respondents as well as the pronunciation of *out* (N=1), which are both CR occurrences. The *cadence* of speech is also mentioned by five respondents and this speaker is perceived as having a certain *tone* (N=4) and as sounding *Canadian* (N=3). Moreover, respondents note that he sounds confident (N=2) and he has an accent (N=2). Moreover, each of the following answers are given by a single respondent: his intonation, the content of the sentence, the fact that he sounds masculine and young, as well as his voice and the sentence structure and the fact that he mumbles when speaking.

[124] 72 respondents: 41 women (28.7%), 28 men (28%), one non-binary and two respondents who preferred not to disclose their gender; 48 respondents under 40 (32%) and 24 over 40 (24.2%).
[125] 58 respondents: 30 women (21%), 26 men (26%), 1 non-binary and who preferred not to disclose their gender; 36 respondents under 40 (24%) and 22 over 40 (22.2%).

In conclusion, whether respondents identify correctly or incorrectly the speakers in the stimuli they seem to be triggered by similar linguistic clues in the recordings. The answers also suggest that they identify the male and female speakers based on the same criteria. After having presented the linguistic features that respondents use to identify speakers as hockey players on a case-by-case basis, in the next section, I offer an overview of the markers that are most frequently noticed. First, I present the linguistic markers (see Table 12.1) and then the social characteristics offered by the respondents (see Table 12.2).

Linguistic comment	N	Percentage
Pronunciation	118	35.4%
Accent	36	10.8%
Intonation	34	10.2%
Voice	21	6.3%
Cadence	21	6.3%
Tone	20	6%
CR	19	5.7%
Hesitation	17	5.1%
Pauses	15	4.5%
Sentence structure	10	3%
Muffled speech	6	1.8%

Table 12.1: Linguistic features noted by respondents to point out what triggered their reaction to believe speakers are hockey players.

The linguistic clues given by respondents to justify their choice are classified into three categories: answers cited in most cases (more than 10% of responses), answers less frequently cited (more than 5%) and finally the responses of fewer groups of respondents (fewer than 5%) (Table 12.1). When respondents consider a speaker in the recordings to be a hockey player, they use the following linguistic clues: 35.4% of them refer to their pronunciation pointing out precise words (N=118), 10.8% mention the accent of the speakers (N=36) and 10.2% their intonation (N=34). Other features are quite frequent in the results, being cited in more than 5% of the answers. First, the voice (harsh, low, loud, deep) of the speakers, and cadence of speech seems to influence the identification (6.3%, N=21) as well as the tone (laxed, masculine, relaxed) of the speaker (6%, N=20). Specific pronunciation of vowels corresponding to CR are cited in 5.7% of the answers as a linguistic clue to identify a player (N=19), and similarly, the fact that speakers hesitate when they speak seems to influence respondents (5.1%, N=17). Furthermore, criteria mentioned in fewer than 5% of responses can be found in Table 12.1 (pauses, sentence structure, and muffled speech). In addition, participants also used social characteristics to describe the speech of hockey players (Table 12.2).

Metalinguistic comment	N	Percentage
Sounds Canadian	28	8.4%
Reminds hockey interview	10	3%
Content of the stimulus	9	2.7%
Sounds young	8	2.4%
Sounds sporty	7	2.1%
Sounds masculine	7	2.1%
Sounds relaxed	6	1.8%
Sounds uneducated	5	1.5%
Sounds rural	5	1.5%
Sounds confident	5	1.5%

Table 12.2: Social characteristics noted by respondents to point out what triggered their reaction to believe speakers are hockey players.

In response to the question (W*hat made you think so?*), the most often cited remark is that sounding Canadian (8.4%, N=28) implies being a hockey player. All other comments were made by less than 5% of the participants. 3% of them thought the recordings reminded them of hockey players' interviews they had already heard. The content of the stimuli was noted by 2.7% of respondents, as well as the fact speakers sound young (2.4%) or that they sound sporty or masculine (2.1%). Additional comments were noted on social characteristics: respondents point to speakers sounding relaxed (1.8%), sounding uneducated (1.5%), and sounding rural (1.5%) and confident (1.5%).

To identify female speakers as being hockey players, respondents use the same features as for male speakers, with the exception of sentence structure and the fact that they are never reported to mumble. This section has revealed the linguistic clues described by respondents when asked to give specific reasons for their identification of the speaker in a recorded speech sample as a hockey player. Nine features are cited in more than 5% of the answers (Table 12.1) and are mentioned between 17 and 118 times (raw count).

12.3.1 The role of Canadian Raising in the identification of speakers as hockey players

The stimuli presented to the respondents vary with respect to the presence or absence of occurrences of CR; some stimuli feature one or two occurrences of CR, and others do not have any. The aim behind this task was to determine whether CR was a linguistic clue used by participants to identify hockey players' speech, whether stimuli with tokens of CR would be identified to be from a hockey player more frequently than those without any occurrences of CR (see Chapter 7, section 7.3.5).

To recall, when spontaneously answering question 27 about HE features, no respondents refer to a specific pronunciation of the vowels, suggesting they do not identify CR as a specific characteristic of HE. However, the description of CR is found in the answers of some participants in the Verbal Matched Guise Technique, when they give details about their reasons for identifying a stimulus as pronounced by a hockey player. The list of the following answers shows examples of how they describe CR:

*The way she said **writing***

*the word '**wife**' - Pitch change on "wife" - Upward inflection on wife*

*long oo sound in **south***

*The emphasis on "**nice**",*

*Accent on **about***

*The way he said '**about**', Sounds Canadian with "**about**"*

*"**Out** front" seems Canadian/hockeyish*

These examples indicate that respondents notice both diphthongs in which CR may occur (e.g., *nice* and *out*); they do not only include comments on the stereotyped MOUTH diphthong. Out of the eight occurrences of CR present in the stimuli, only two remain completely unnoticed, *life* in MP_1CR and *out* in FN_1CR. Surprisingly, *about* does not get the highest response rate and *out* is barely noticed whereas *wife* gets a very high response rate, while it is the PRICE diphthong. This finding may suggest a change in the perception of CR, as it seems that respondents perceive the specific pronunciation of both diphthongs in Canada, regardless of the stereotypical representation.

Stimulus/ speaker	Ø CR		1 CR		2 CR		Total
	Raw count	Percentage	Raw count	Percentage	Raw count	Percentage	
MP	45	18,0%	13	5,2%	22	8,8%	32,1%
FP	119	47,8%	13	5,2%	N/A	N/A	5,2%
MN	65	26,1%	72	29,0%	58	23,3%	78,3%
FN	13	5,2%	9	3,6%	N/A	N/A	8,8%

Table 12.3: Identification of speakers as hockey players according to the different stimuli with or without occurrences of CR.

Observation of Table 12.3 shows the identification response rate of the speakers according to the presence or absence of CR in the stimuli. The MN was identified as a hockey player by 29% of the respondents in his stimulus with one occurrence of CR (MN_1CR), by

26.1% of the respondents in his stimulus with no CR (MN_ ØCR) (26.1%) and by 23.3% of the respondents in the one with two occurrences of CR (MN_2CR). These results suggest that identification of MN as a hockey player does not seem to be related to the presence or absence of CR in his stimuli. Similarly, the male hockey player (MP) is identified the most often (18%) as a hockey player in the stimulus without CR (MP_ ØCR) compared to his two other stimuli: MP_1CR (5.2%) and MP_2CR (8.9%).

As for the female speakers, few respondents identify either speaker as being a hockey player. Predominantly because of the content of her stimulus, FP_ ØCR was identified by 47.8% of the respondents, despite the fact that her stimulus contains no occurrences of CR. On the other hand, only 5.2% of respondents identify her as a hockey player based on her other stimulus (FP_1CR). In parallel, the FN is identified as a hockey player by 5.2% in her stimulus with one token of CR (FN_1CR) and 3.7% of the respondents when listening to the stimulation with no occurrences of CR (FN_ ØCR).

Assuming that any element of the lexical content of the speech sample that influences respondents' identification of the speaker as a hockey player would have been mentioned in response to the "why" question, I can conclude that FP_ ØCR is the only stimulus that was biased in this way.

In conclusion, while CR is not mentioned when respondents are asked features of HE, it is mentioned by only a few respondents after listening to a speech sample. The results seem to indicate that there is no apparent correlation between the presence of CR and a higher rate of responses identifying the speaker as a hockey player.

12.4 Evaluation of speakers identified as hockey players

Three analyses are conducted to present the evaluation of hockey players in comparison to the non-players, and the difference in perception when they are identified as hockey players. The first analysis aims at eliciting whether the actual identity of the speakers influences their rating in terms of education, accent, Canadianness and friendliness. It considers overall ratings for the actual hockey players (MP and FP) compared to the non-players (MN and FN) (Tables 12.4, 12.5, 12.6, and 12.8). The second analysis compares the actual ratings for hockey players to those of the non-players who were identified as hockey players by the respondents (either accurately or not), in order to determine whether it is the perception of the speaker as a hockey player (the label) or the actual hockey player's or non-player's identity that influences the rating. The third analysis investigates how the speakers identified as hockey players are rated, whether they are indeed hockey players or not, in comparison with the speakers who are

identified by the respondents as not being hockey players (i.e., respondents chose the answer: "No this is not a hockey player"). This distribution confirms the same patterns found when speakers are perceived to be hockey players.

The following sections introduce the results of the first and second analyses for the rating of education, accent, Canadianness and friendliness. Then, the findings of the third analysis are presented.

12.4.1 Education

	Speaker	very educated	somewhat educated	neither educated nor uneducated	somewhat uneducated	very uneducated
Hockey player	MP_1CR	3,6	38,2	49,4	8	0,8
	MP_2CR	41,8	40,2	16,5	1,2	0,4
	MP_0CR	10,4	46,2	32,9	10,4	0
	WP_1CR	2,4	36,1	49,4	12	0
	WP_0CR	20,9	48,2	30,5	0,4	0
	total	15,82	41,78	35,74	6,4	0,24
Non-player	MN_1CR	3,6	33,3	57,8	4,8	0,4
	MN_2CR	4,8	40,2	50,6	4,4	0
	MN_0CR	3,2	36,5	50,2	10	0
	WN_1CR	14,9	48,2	31,3	5,2	0,4
	WN_0CR	7,6	33,7	51,8	6,8	0
	total	6,82	38,38	48,34	6,24	0,16

Table 12.4**:** Ratings in terms of education of the hockey players compared to the ratings of the non-players. Results are given in percentages.

Table 12.4 demonstrates that hockey players are rated as sounding educated by 57.6 % (15.82%+41.78%) of the respondents and as uneducated by 6.64% (6.4%+0.24%), whereas the non-players are rated as educated by 45.20% (6.82%+38.38%) and as uneducated by 6.40% (6.24%+0.16%) of the respondents. Respondents believe the actual players to sound more educated. However, when identified as hockey players, the actual players are slightly less perceived as educated 44% (12%+32%) compared to non-players 47% (5%+42%) (see Figure 12.1). Thus, the perception of the speakers as hockey players (i.e., by putting the label "hockey player" on speakers) changes the ratings considerably. In fact, the hockey players who are first perceived as educated (57.6 %) get a much lower education rating when they are identified as hockey players. On the other hand, for the non-players, the results do not much vary in terms of perceived education. Considering the results of ratings as *uneducated*, ratings for the hockey players are at 6.64%, and this is almost doubled when they are indeed perceived as players (12%+1%=13%). Likewise, while non-players are first perceived as *uneducated* by 6.4% of the respondents, ratings are at 12% when they are perceived as hockey players.

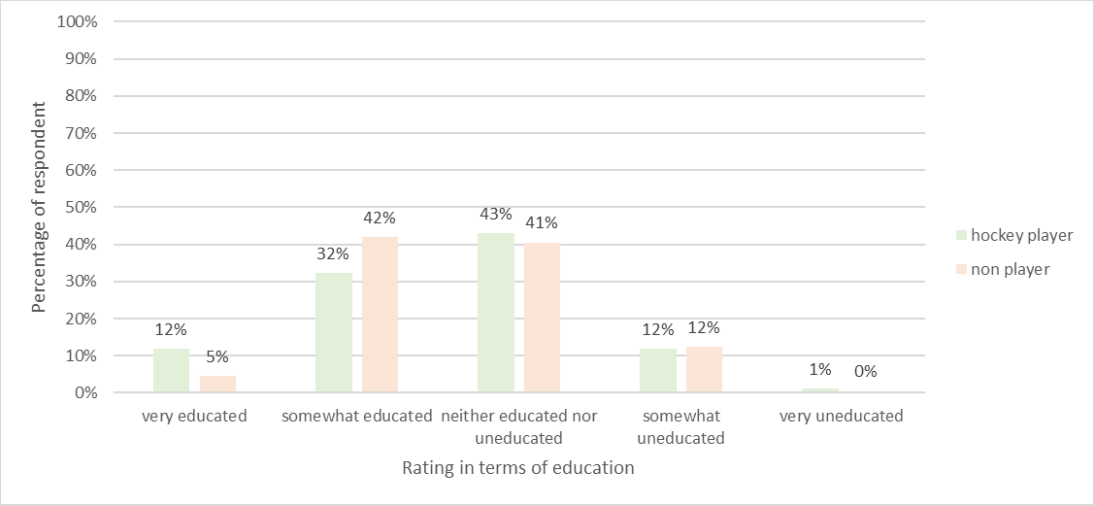

Figure 12.1: Hockey players and non-players perceived as hockey players' ratings in terms of education.

12.4.2 Accent

	Speaker	very accented	somewhat accented	neither accented nor neutral	somewhat neutral	very neutral
Hockey player	MP_1CR	1,6	19,3	25,7	24,1	29,3
	MP_2CR	22,9	44,2	12,4	14,1	6,4
	MP_0CR	11,2	41,4	18,5	20,1	8,8
	WP_1CR	1,2	15,3	32,5	27,3	23,7
	WP_0CR	8	37,3	19,7	20,9	14,1
	total	9,0	31,5	21,8	21,3	16,5
Non-player	MN_1CR	7,2	37,3	14,1	26,5	14,9
	MN_2CR	2	26,1	22,1	25,3	24,5
	MN_0CR	3,6	32,9	23,7	22,9	16,9
	WN_1CR	0	11,6	32,5	28,9	26,9
	WN_0CR	0,4	10,4	37,8	28,9	22,5
	total	2,6	23,7	26,0	26,5	21,1

Table 12.5: Ratings in terms of accent of the hockey players compared to the ratings of the non-players. Results are given in percentages.

Observation of Table 12.5 shows that 40.5% (9%+31.5%) of the respondents rate hockey players as having an accented speech, and 37.8% (21.3%+16.5%) rate them as having a more neutral speech, while non-players are judged to have an accented speech by 26.3% (2.6%+23.7%) and a neutral speech by 47.6% (26.5%+21.1%). As soon as speakers are identified as hockey players, these ratings increase in terms of a more accented speech and decrease in terms of neutral speech, as can be seen in Figure 12.2. Hockey players have a more accented speech, respectively 65% (46%+19%) for the hockey players and 54% (46%+8%) for the non-players, contrary to non-players who are perceived as having a more neutral way of speaking by 39% (15%+24%) of the respondents and hockey players by 30% (10%+20%) of the respondents. Thus, I have shown that there is a link between being perceived as a hockey player and having an accented speech.

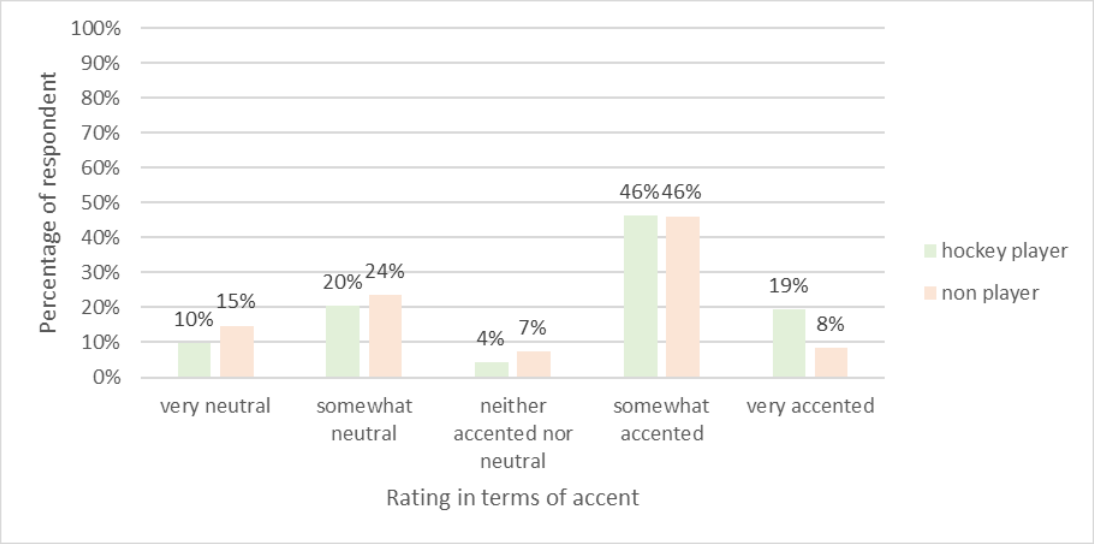

Figure 12.2: Hockey players and non-players perceived as hockey players' ratings in terms of accent.

12.4.3 Canadianness

	Speaker	very Canadian	somewhat Canadian	neither Canadian nor non-Canadian	somewhat non-Canadian	very non-Canadian
Hockey player	MP_1CR	26,1	47	20,1	6,4	0,4
	MP_2CR	14,9	36,9	39,4	7,6	1,2
	MP_0CR	18,9	35,7	22,9	15,7	6,8
	WP_1CR	32,5	47,4	18,5	1,6	0
	WP_0CR	12,4	34,1	46,2	7,2	0
	total	20,96	40,22	29,42	7,7	1,68
Non-player	MN_1CR	21,3	52,5	23,7	2,8	0
	MN_2CR	41,4	48,6	9,6	0,4	0
	MN_0CR	32,5	49,8	14,5	2,8	0,4
	WN_1CR	12,4	42,6	44,2	0,4	0,4
	WN_0CR	8,4	34,1	49,8	5,2	2,4
	total	23	46	28	2	1

Table 12.6: The ratings in terms of Canadianness of the hockey players compared to the rating of the non-players. Results are given in percentages.

In terms of Canadianness, the non-players are perceived as sounding more Canadian (69%=23%+46%) than the actual hockey players (71.18%=20.96%+40.22%); additionally, ratings of non-Canadianness are higher for the players (9.3%=7.7%+1.68%) than for the non-players (3%=2%+1%) (Table 12.6). Nevertheless, can be seen in Figure 12.3, when the speakers are identified as hockey players, the ratings are very uniform. The hockey players are judged as sounding almost exclusively Canadian 99% (51%+48%), and the non-players receive a similar high rating, at 95% (54%+41%). Moreover, none of the players or non-players are considered to sound non-Canadian when believed to be hockey players (0%). These data provide additional evidence that the label "hockey player" changes the perception of the respondents, and the findings reveal that respondents attribute sounding Canadian to hockey players.

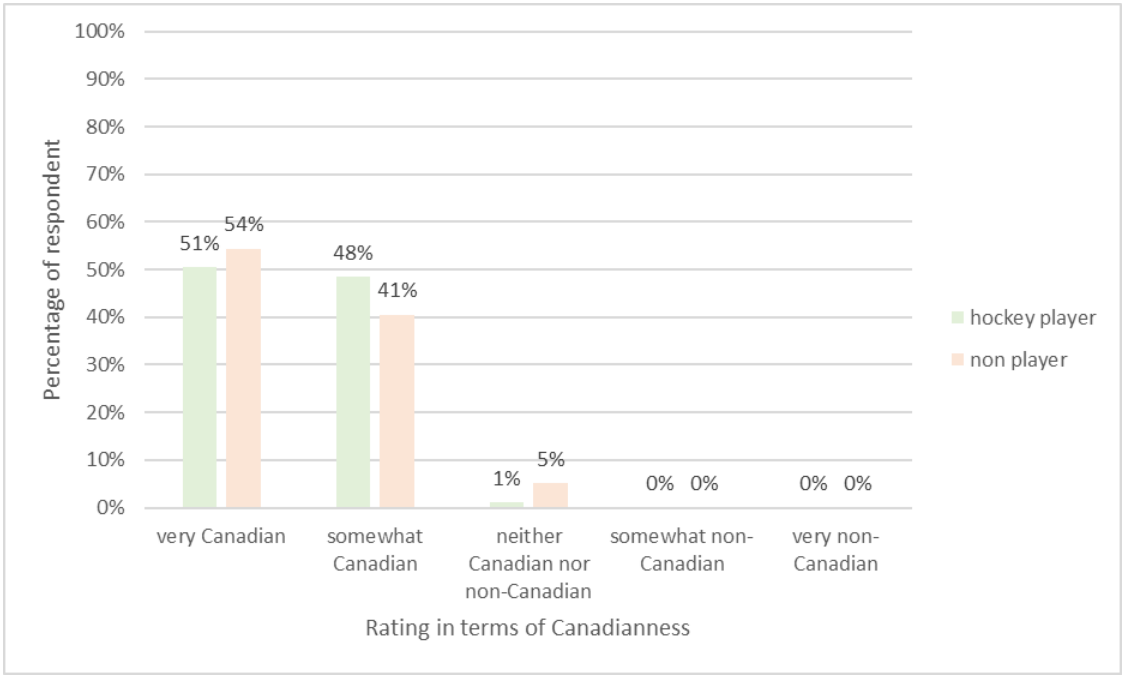

Figure 12.3: Hockey players and non-players perceived as hockey players: ratings in terms of Canadianness.

12.4.4 The role of CR in the rating of Canadianness

Data are compiled in Table 12.7 to investigate whether the speakers who produce stimuli with one or two occurrences of CR are judged to sound more Canadian than the speakers whose stimuli contain no CR, because CR is acknowledged to be a feature of CE by the respondents (see Table 12.1).

Stimuli	Very Canadian	Somewhat Canadian	Neither Canadian nor non-Canadian	Somewhat non-Canadian	Very non-Canadian
Mean (N=10)	22.1%	42.9%	28.9%	5.0%	1.9%
Stimuli with 1 or 2 CR (N=6)	21.4%	39.9%	30.4%	6.5%	2.7%
Stimuli with no CR (N=4)	23.1%	47.7%	26.6%	2.8%	0.4%

Table 12.7: Ratings in terms of Canadianness of the stimuli depending on the presence (one or two occurrences) or absence of CR.

The stimuli with occurrences of CR are rated as sounding *very Canadian* by 21.4% and *somewhat Canadian* by 39.9% (a total of 61.3 % of the respondents think these speakers sound *Canadian*), whereas the stimuli with no occurrence of CR are judged to sound *very Canadian* by 23.1% and *somewhat Canadian* by 47.4% which means 70.5 % of the respondents, more

than for the stimuli with occurrences of CR. In addition, the stimuli with occurrences of CR are rated as sounding more non-Canadian by 9.2% (*very non-Canadian* 2.7% and *somewhat non-Canadian* 6.5%) while the stimuli with no occurrence of CR are rated at 3.2% on this dimension (*very non-Canadian* 0.4% and *somewhat non-Canadian* 2.8%). In brief, respondents rate the stimuli with no occurrence of CR higher on Canadianness than the ones with one or two occurrences of CR, and the stimuli with CR are rated as sounding less Canadian than those with no raising. Although CR is a stereotyped variable with which many of the respondents are familiar, ratings of speakers as sounding more or less Canadian do not seem to be influenced by the presence of CR.

12.4.5 Friendliness

	Speaker	very friendly	somewhat friendly	neither friendly nor unfriendly	somewhat unfriendly	very unfriendly
Hockey player	MP_1CR	28,2	48,6	20,9	1,6	0,8
	MP_2CR	28,9	50,2	20,1	0,8	0
	MP_0CR	28,1	49,4	22,5	0	0
	WP_1CR	19,3	50,2	28,5	2	0
	WP_0CR	22,9	45	25,3	6,8	0
	total	25,5	48,7	23,5	2,2	0,2
Non-player	MN_1CR	46,6	43,8	9,2	0,4	0
	MN_2CR	17,7	45,8	33,3	3,2	0
	MN_0CR	12,9	39,4	37,8	9,2	0,8
	WN_1CR	9,6	47,4	30,5	12,4	0
	WN_0CR	24,9	46,6	26,9	1,2	0,4
	total	22,3	44,6	27,5	5,3	0,2

Table 12.8: Ratings in terms of friendliness of the hockey players compared to the ratings of the non-players.

Table 12.8 shows that the hockey players are mostly perceived as sounding friendly (74.2%=25.5%+48.7%), while only 2.4% (2.2%+0.2%) of the respondents think they sound *unfriendly*. The non-players are also perceived as friendly (66.9%=22.3%+44.6%), although a larger number of respondents believe they sound *unfriendly* (5.5%=5.3%+0.2%). However, as shown in Figure 12.4, when they are identified as hockey players, they are perceived as even friendlier (hockey players 88.1% (37.6%+50.5%) and non-players 74.1%=27.6%+46.5%). However, 6% (5.5%+0.5%) of respondents still rate the non-players as sounding unfriendly while the actual players do not get perceived as such.

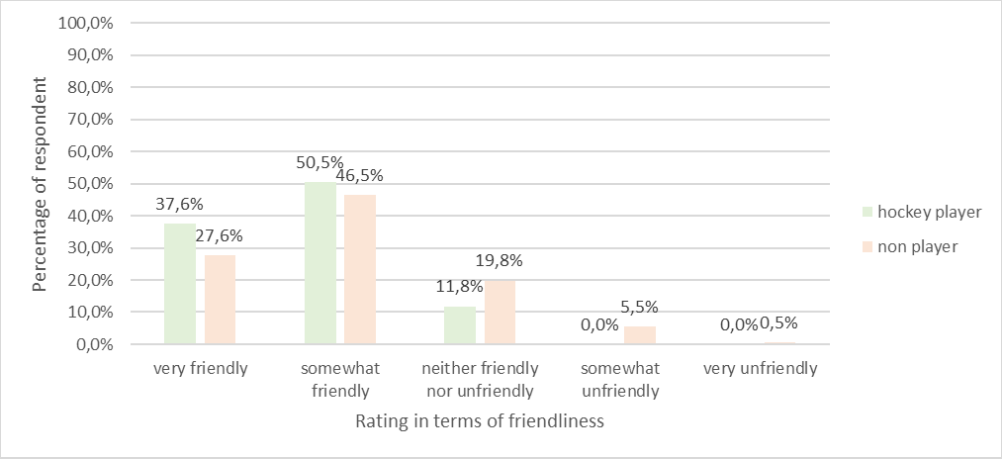

Figure 12.4: Hockey players and non-players perceived as hockey players' ratings in terms of friendliness.

In conclusion, these findings suggest that respondents' perception of a speaker based on the belief that the speaker is a hockey player seems to be more important than whether or not the speaker is in fact an actual player, as shown by the results of the two analyses. The categorisation of a speaker as a hockey player changes the ratings of the respondents. Speakers labelled as hockey players are perceived as having a more accented speech, as sounding more Canadian, and as sounding friendlier but also less educated. The third analysis shows the same patterns with greater differences between identified hockey players and non-identified hockey players, which is the opposite choice (*No I don't think this person is a hockey player).*

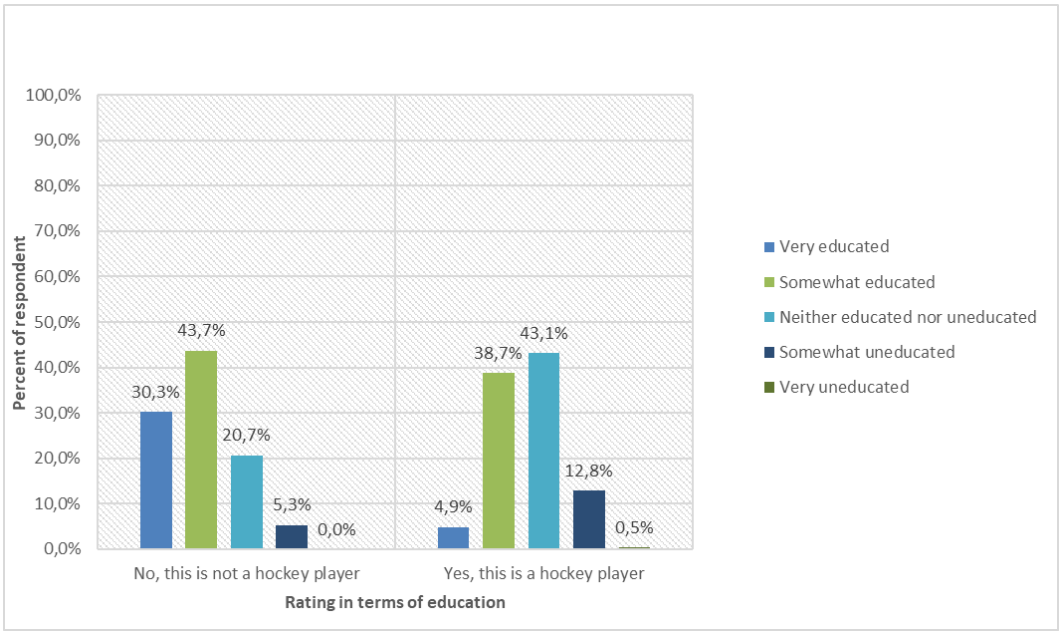

Figure 12.5: Respondents' ratings in terms of education according to their perception of the speakers as hockey players or non-players.

As the data in Figure 12.5 suggest, there is a substantial difference between on the one hand the hockey players, who are judged to sound *somewhat uneducated* (12.8%), and on the

other hand the speakers who are not identified as hockey players (5.3%). Additionally, the speakers recognised as non-players are rated as sounding *very educated* (30.3%) unlike the perceived hockey players for whom the option *very educated* is selected by only 4.9% of the respondents (a six-fold difference). This suggests an association of the hockey players with a lack of education. Yet, *neither educated nor uneducated* is the rating most frequently chosen for the identified hockey players (43.1%) while it is only chosen by 20.7% of respondents for the non-players. Moreover, for the response *somewhat educated* the difference is less clear: non-players (43.7%) and hockey players (38.7%).

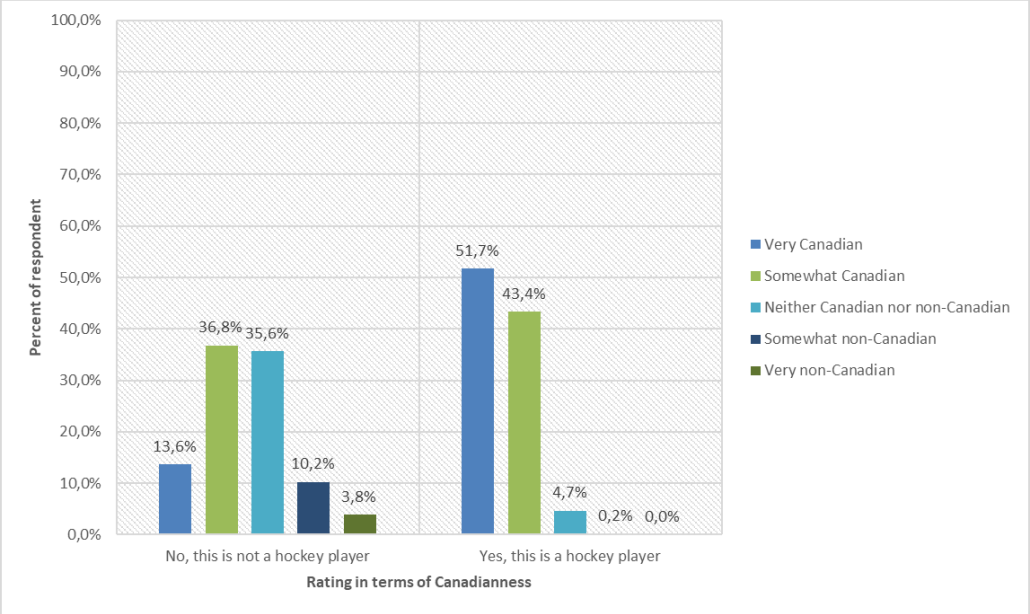

Figure 12.6: Respondents' ratings in terms of Canadianness according to their perception of the speakers as hockey players or non-players.

Figure 12.6 shows that identified hockey players are judged to sound *very Canadian* (51.7%) and *somewhat Canadian* (43.4%), which demonstrates that participants connect sounding Canadian to hockey players, while the ratings on this dimension of the speakers who are not recognised as hockey players are respectively 13.6% and 36.8%. Also, none of the respondents who identify hockey players think they sound *very non-Canadian*, and only 0.2% believe they sound *somewhat non-Canadian*, yet these answers can be found when participants believe they are not hockey players (*very non-Canadian* 3.8% and *somewhat non-Canadian* 10.2%).

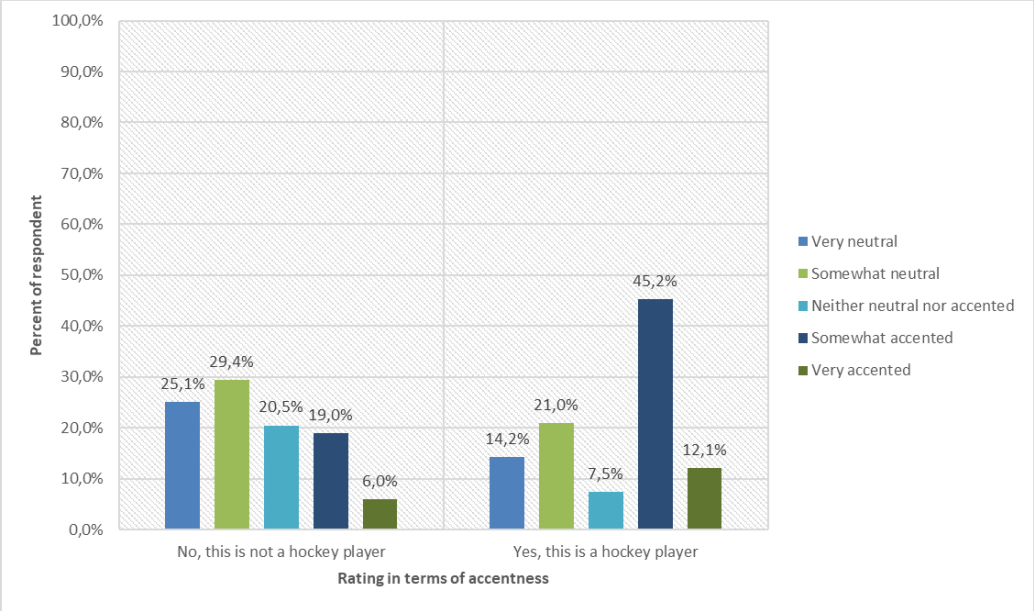

Figure 12.7: Respondents' ratings in terms of accent according to their perception of the speakers as hockey players or non-players.

Again, hockey players are perceived as speaking a more accented variety as shown in Figure 12.7. When considered to be hockey players, the speakers are rated high on accent (*very accented* 12.1% and *somewhat accented* 45.2%) while the speakers are rated much lower when they are not perceived as hockey players (*very accented* 6% and *somewhat accented* 19%). In both categories, the perceived hockey players are rated more than double the proportion of non-players. The trend is the other way around when looking at the neutral side of the scale (*very neutral* 14.2% and *somewhat neutral* 21% for identified hockey players and respectively 25.1% and 29.4% for the non-players).

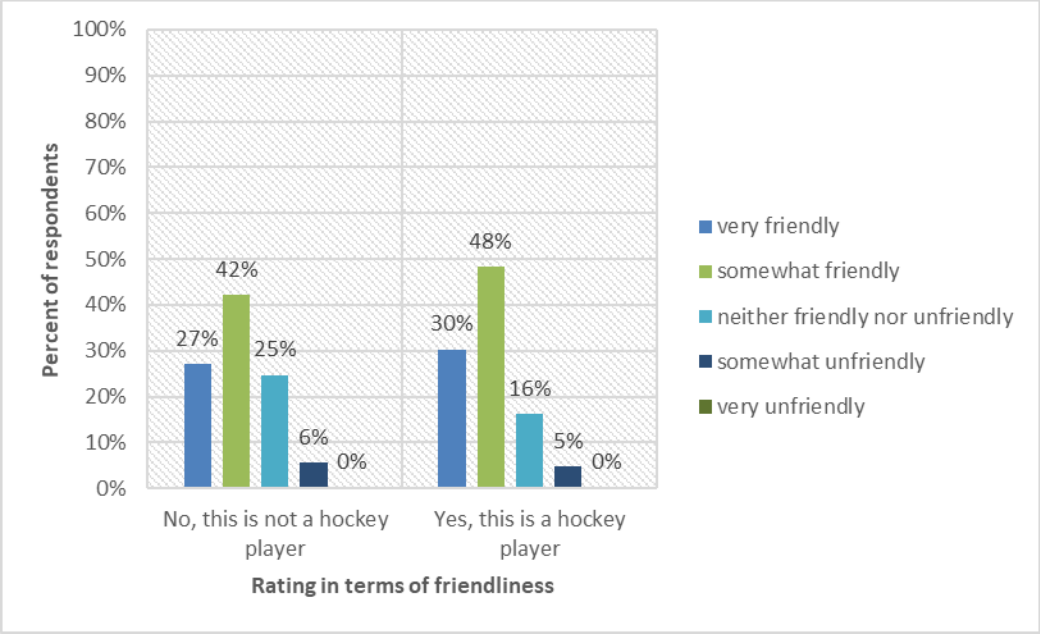

Figure 12.8: Respondents' ratings in terms of friendliness according to their perception of the speakers as hockey players or non-players.

As indicated In Figure 12.8, speakers perceived as hockey players are judged to be friendlier 78% (very friendly (30%) and somewhat friendly (48%)) than speakers identified as not being hockey players, 69% (very friendly (27%) and somewhat friendly (42%)). None of the speakers are rated as very unfriendly, and both groups have similar results for the somewhat unfriendly scale with respectively 5% and 6% for identified hockey players and non-players.

To conclude, this last analysis has confirmed what I had shown with the results of the first two analyses. The identification of speakers as hockey players influences the ratings more than the actual identity of speakers. Ontarians perceive hockey players as sounding friendly and Canadian, but also as having a thick accent and as sounding less educated than speakers who are not identified as hockey players.

In conclusion, this chapter has shown that in the Verbal Matched Guise Technique task respondents mostly base their identification on pronunciation features, and they refer to specific items, so they use social factors to a much lesser extent. This task of the survey also shows that there is still a great influence of gender on the identification of hockey players. Female speakers are rarely identified as such by the respondents. Hockey continues to be characterised by hegemonic masculinity in the minds of Ontarians and supposedly in the hockey community. However, Chapter 11 has shown that for the respondents HE is no longer categorically conditioned by gender, as it is thought to be spoken the same way regardless of gender.

Even though respondents do not accurately identify the speakers of the study using the stimuli, the analyses demonstrate that the identification of speakers as hockey players affects their ratings in terms of Canadianness, accent, education and friendliness. This inaccurate identification may be due to the representativeness of the sample, composed of a majority of respondents who are outsiders to the hockey community. As a result, they may not have enough exposure to HE to be able to correctly identify hockey players based on stimuli of recorded speech.

These results reported in this chapter confirm that Ontarians hold a stereotypical representation of hockey players, and consequently of their variety. There are clear differences between identified hockey players and speakers who are not identified as such. Hockey players are ranked as sounding almost exclusively Canadian; they cannot sound non-Canadian, according to the respondents. As shown in Chapter 11, hockey players are perceived as lacking education and they are thought to be friendly overall, and the same perception is found in this chapter. Moreover, the results revealed that hockey players are perceived as having an accented speech while speakers not identified as hockey players are rated as sounding neutral. The majority of respondents judge a variety they do not speak and consequently respondents perceive the hockey players must have the accent (Lippi Green 2012), and Canadian speakers who are not hockey players are more representative of respondents in the survey, and therefore these non-players are rated as having a more neutral accent.

These results suggest that noticing stereotypical dialectal features can be driven to a large extent by pre-existing knowledge of the speakers. Thus, when respondents think the speaker is a hockey player (i.e., they apply the label "hockey player" to the speaker), they are more inclined to give a certain ranking and to associate certain features (e.g., less educated) with these speakers and their speech, which is an example of stereotyping. My study also provides evidence that the identification of a speaker as a hockey player seems to be more important than the fact that the speaker is in fact an actual hockey player. It raises awareness regarding inaccurate representations and their influences on the rating of a speaker's variety. As noted by Niedzielski (1999) in her study, respondents influenced to believe speakers are Canadian (i.e., labelled Canadians) are more likely to match a raised vowel (CR) with the Canadian variety, because they unconsciously associate CR with Canada.

This chapter revealed that CR is noticed by participants when they hear speech samples and that some note CR in justifying their identification of hockey players. Both diphthongs are noticed, and some respondents even comment on this particular pronunciation of diphthongs as sounding specifically Canadian. Interestingly, the presence of CR in the stimuli does not prompt

respondents to identify the speaker as a hockey player. Although CR is noticed by respondents, they do not seem to be influenced by its presence or absence in the stimuli when they are invited to rate the speakers in terms of Canadianness. The findings do not show that CR is a means to point out Canadianness, even though respondents tend to associate CR with being Canadian. This chapter provided insights on the stereotype of CR. Originally only the MOUTH diphthong was a marker of CE (Chambers 1973, Boberg 2008), but my findings have shown that respondents noticed both diphthongs in the stimuli. The MOUTH diphthong is confirmed to be a marker of CE, and the PRICE diphthong appears to be becoming another marker of CE according to the respondents' answers.

Part three of this dissertation has presented answers and interpretations to the research questions raised throughout this research from the production and perception perspectives.

Conclusion

Drawing on evidence gathered from the standpoint of both production and perception, the present dissertation has sought to determine, whether one can speak of a distinct language variety that could be called Canadian Hockey English (HE).

In the first part of this dissertation, the initial two chapters help conceptualise the object of my research. I began by establishing that CE was slow to codify and to emerge from the shadow of BrE and AmE. In the second chapter, I emphasised that CE has mainly been described using its vowel phenomena because this is predominantly what distinguishes CE from other varieties of English. I provided descriptions of the two vocalic variables investigated in this dissertation, variables that have been described as typical Canadian features, for example, I noted that CR is a widespread feature of CE of which non-linguists are very much aware. Because Americans use this particular pronunciation of vowels to identify Canadians, this variable is a sociolinguistic stereotype. On the other hand, for the CVS, there is a lack of complete agreement about which vowels participate in the shift and how they are moving, and this variable appears to occur below the level of speakers' conscious awareness. Moreover, CE is characterised by a number of lexical features (Canadianisms, regional lexicon), but there are only a few studies on hockey terminology. I also noted that there are very few grammatical features that distinguish CE from other varieties of English. In terms of its orthography, CE shares some of its features with BrE and some with AmE. The last chapter of this first part served to investigate the concept of identity, as studied in sociolinguistic research. I explored the link between identity and hockey in Canada, and how a speaker may use linguistic variables to express an identity. In the second part of my thesis, I presented the theoretical framework and the methodologies which support my production and perception studies. After presenting the PAC-LVTI protocol with the adjustments I needed to introduce for my study, I then reviewed the methods of attitudinal studies to better approach my own perceptual research questions. In order to give a better interpretation of the findings I provided a thorough description of the rationale and methodologies used in both studies and presented the profile of the participants. The third and final part includes all the analyses, results and interpretations of both the production and perception studies.

This dissertation addresses four main research questions: two of which are answered in the production study and two by the perception study. The two questions that are addressed by the production study are the following:

(1) Are both CR and the CVS present in the speech of the hockey players participating in the study?

(2) Are these phonetic variables conditioned by these hockey players' level of engagement with the sport?

In light of the production results provided in Chapters 8 and 9, I have shown that the recorded interviews with speakers in the PAC-LVTI Ontario (Canada) Hockey English Corpus reveal many occurrences of raised nuclei of PRICE and MOUTH diphthongs (CR) and of shifted KIT, DRESS, and TRAP vowels. Therefore, the first research question can most certainly be answered in the affirmative.

My examination of the data has indicated that CR behaves differently in the PRICE and MOUTH diphthongs and that MOUTH raising is more salient in the data. The findings show that raising occurs exclusively in pre-voiceless obstruents in PRICE, but that it has extended to new environments in the MOUTH diphthong: to pre-nasal and pre-voiced, as well as to pre-voiceless environments. The CVS was also identified in the speech of the hockey players in this study. All the speakers realise shifted TRAP vowels, and all the female speakers except one shift the DRESS vowel, while only two younger male speakers realise a shifted DRESS vowel.

The second research question is central to my study, as I operationalise the speakers' engagement with hockey as an independent variable to determine whether this social factor influences their realisations of both CR and the CVS. In order to study their hockey engagement, I designed the HII which associates the speakers with a HII score according to the degree of engagement with hockey they reported during the interview. Speakers who identify as hockey players, who grant a lot of importance to hockey in their life and who play regularly at competitive levels have higher HII scores than speakers who do not identify as hockey players, who only play the sport casually and sporadically, or who only play hockey to exercise for instance.

In the introduction to this dissertation, I outlined an overarching hypothesis that an eventual conditioning effect of the degree of hockey engagement on the two variables being examined would depend on the level of salience of each variable. Although CR is a stereotyped variable in CE of which Canadian speakers are aware, the CVS is a linguistic change occurring below the speakers' level of conscious awareness. In other words, the CVS is not noticed or commented on by Canadian speakers. The results support the view that both variables are used differently by the hockey players due to these different levels of salience, which confirms partially the production hypothesis formulated in the introduction. The results demonstrate that CR is to some degree conditioned by the speakers' hockey engagement, whereas for the CVS

no correlation was found between the speakers' realisations and their hockey engagement (HII score or group); in other words, the CVS is not conditioned by the hockey players' level of engagement with hockey. The results for the CR variable were unexpected. Although it is the raising of the MOUTH diphthong that is stereotyped in CE, and not the raising of the PRICE diphthong, it was the CR in PRICE which was correlated with the speakers' hockey engagement (HII score). Thus, the hypothesis that hockey players in the corpus would use the stereotyped variable of MOUTH to a greater extent in order to affirm their hockey identity was not confirmed.

The results of the perception study support these findings. No participant described vowel sounds in a way that could be understood as the description of the CVS (which remains unperceived), but the same is not true for CR, which has been commented on in several tasks in the survey. Both diphthongs, MOUTH and PRICE, were mentioned, even if MOUTH obtained the highest response rate. These perceptual findings suggest that CR in the PRICE diphthong is beginning to be noticed by non-linguists and is thus gradually acquiring greater salience. This may suggest that hockey players with higher hockey engagement have reinterpreted PRICE raising as not only indexing CE but also as indexing a certain hockey persona.

The two questions that are addressed by the perception study are the following:

(3) Are Ontarians aware of the existence of a Canadian variety of English (i.e., CE) and if yes, is CE only perceived according to known stereotypes?

(4) Do Ontarians think there is a distinct variety of Canadian English that is spoken by hockey players? If yes, is Hockey English (HE) perceived as sounding typically Canadian?

Regarding research question 3, even if Canadians struggled for a long time to acquire a distinct English variety and a recognised linguistic identity, it seems that the existence of a Canadian variety of English is now established as Ontarians in this sample definitely describe a variety of English that they consider to be Canadian, associated with specific linguistic features, and presented as being different from other varieties of English. This finding confirms the underlying assumption provided in the introduction that Ontarians would recognise a distinct CE and would be able to describe this variety in terms of linguistic features. On the other hand, while I assumed that respondents would describe CE in terms of differences from AmE and similarities with BrE, this is not what is found in the results. The majority of Ontarian respondents present CE as different from both English varieties, even if a larger group of

respondents believe CE and AmE not to be different (5.3%, N=11) since only one respondent reports CE and BrE to be the same variety.

However, if the majority of respondents recognise this Canadian variety, some minor signs of linguistic insecurity were discerned in some responses. 20.5% of the respondents deny sounding Canadian when they speak, suggesting they either distance themselves from the variety, or assume they do not sound particularly different from speakers of other varieties of English. Furthermore, the Canadian accent is described as "funny sounding" (9.1%), demonstrating that these respondents do not consider CE to be the norm but rather as peculiar or ridiculous. Likewise, Canadian speakers are not principally described in terms of status-related qualities (education or articulation), but rather in terms of positive human qualities (friendly, relaxed and trustworthy).

Despite these minor linguistic insecurity signs found in the data, the majority of the respondents focused on the descriptions of lexical, pronunciation and spelling features they associate with CE.

In response to the second part of the question (is CE only perceived according to known stereotypes?) the survey revealed that, generally speaking, Ontarians in this survey do not just hold a stereotyped representation of CE. Rather, the descriptions they give are based on an awareness of specific features used by Canadians. Their descriptions are not limited to *eh* or to the pronunciation of *about*, but they include lexical features (74%) (e.g., "buddy", "yeah no" and lists of Canadianisms), references to pronunciation (41%) (e.g., CR, vowels specifically), and spelling features (22%), as well as comments on the Canadian accent (12.5%). The fact that respondents are capable of describing such features, and no longer associate CE with BrE or with AmE, demonstrates that they do not subscribe to the simple stereotypes used by Americans, for example, to recognise or imitate Canadians.

As for question 4, the results presented in Chapters 11 and 12 allow me to give an affirmative answer to the first part of the fourth research question, confirming the hypothesis provided in the introduction of this dissertation (Do Ontarians think there is a distinct variety of Canadian English that is spoken by hockey players?). The stereotype of Canadian hockey players is familiar to non-linguists who perceive a distinct variety spoken by hockey players in Canada. They also provide initial answers to the second part of the research question: is Hockey English (HE) perceived as sounding typically Canadian? 67.1% of the respondents to the survey recognise the existence of HE, a specific variety spoken by Canadian hockey players. To justify their answers, both linguistic and social factors were invoked. The majority of respondents described this variety predominantly with reference to its lexical features (58.2%) and insisted

specifically on the existence of a hockey terminology (21.6%). The phonetic and phonological features of HE were not emphasised by the majority of the respondents: 5.9% of the respondents identified HE as sounding typically Canadian or as being associated with a specific intonation (5.9%) and a lack of articulation (4.6%). In terms of social factors, the recurring terms that were used were: "uneducated" (17.6%) and "rural" (11.1%). This finding tends to confirm my hypothesis: respondents mostly use lexical features and then rely on social characteristics (which are part of the hockey player stereotype) to define the speech of hockey players. However, the majority of respondents do not use age as a marker of sounding like a hockey player (although some do). Gender is not explicitly mentioned by respondents but identified hockey players in the Verbal Matched Guise Technique are predominantly male speakers, which tends to support the idea that hockey is still considered to be a male-dominated sport. Lastly, respondents do not believe HE is limited to the context of hockey. The results show quite the opposite, since respondents described HE to be spoken "everywhere" or "among hockey players". Thus, this part of my hypothesis is not confirmed.

The second part of the research question aimed at identifying whether respondents consider HE to sound typically Canadian. The results show a tendency to associate sounding Canadian with being a hockey player. Firstly, as mentioned above, 6% of respondents identified HE as sounding typically Canadian. Secondly, when questioned on the difference between HE and CE, 9% of the respondents indicated that hockey players speak an exaggerated version of CE. Although 32.3% of respondents express the view that there are no differences between HE and CE, these respondents do not identify themselves as hockey players and show little interest in the sport.

This perceptual study has also contributed in showing that, once the speakers in the stimuli are identified as hockey players, they are rated as sounding almost exclusively Canadian (99%). Respondents justify their identification of a speaker in the stimuli as being a hockey player by stating that they sound Canadian (8.4%) and the presence or absence of CR in the stimuli did not influence their answer. This perception is probably due to the close ties between identity and hockey in Canada.

By combining production and perception studies, my research provides valuable insights in the investigation of a research question related to the construct of persona in the context of language variation and change in CE. In this dissertation, I have offered the first detailed description of the sociolect spoken by hockey players (HE). I have also extended the limited research on HE and contributed to the field of sociolinguistics in the Canadian context. This research also extends the research on CR more generally, providing new evidence of a change

occurring in perception of the variable particularly as regards non-linguists' level of awareness of the PRICE diphthong, as well the conditioning effect of hockey engagement on CR in the PRICE diphthong.

This research validates the use of an index such as the HII to measure speakers' level of engagement in a sport within a CoP and allows the investigation of the effect of non-traditional factors such as engagement in a sport on the realisation of sociolinguistic variables. Such an index should be considered a useful tool to measure affiliation with a CoP and the effect of participation in a particular CoP on language change.

The present study also assesses the application of these research methods in the study of HE from a perceptual perspective and provides new empirical data illustrating how varieties are perceived by non-linguists. Using a Verbal Matched Guise Technique, this dissertation broadens the scope of perceptual research by confirming the importance of labels for the evaluation of speakers; once labelled as hockey players, speakers, in the stimuli, were indeed evaluated quite uniformly by respondents.

Although this research has produced compelling findings, it has some limitations that need to be acknowledged here. The size of the production corpus may have influenced the outcomes and further research on a larger corpus would be needed to confirm with greater certainty the social conditioning of the variables. A larger corpus would also allow for a better representation of hockey players along the continuum of the HII scale. In Chapter 5, section 5.6, I addressed the methodological limitations of the sociolinguistic interview, especially limitations due to the poor sound quality of the recordings collected during the informal conversation, as well as challenges of implementing this task of the protocol. In the end, the data collected during the informal conversation did not provide the expected less formal speech samples to analyse. To gain a better understanding of how CE sociolinguistic variables index social meanings in HE, future research should aim to combine an ethnographic approach with sociolinguistic interviews. However, as noted in the methodology section 4.2.2 and 5.1.3, targeted recruitment within such a specific CoP presents significant challenges, and success of the kind of research endeavour envisaged here might indeed require a member of the research team to an intensive and immersive long-term participation of in this CoP.

From the perceptual perspective, further research should include conducting an in-depth investigation of the links between HE and CE, with a focus on the perception of hockey players as sounding extremely Canadian. This could be achieved by combining a questionnaire and sociolinguistic interviews with a larger sample which includes both hockey players and non-

players, and which would allow the researcher to make a robust distinction between in-group and out-group perception.

The overarching objective of this dissertation has been to shed light on associations between hockey and sounding typically Canadian made by non-linguists in Canada. While it can be said that what I have achieved must be considered simply as a starting point that charts the terrain for more thorough future investigation of the linguistic characteristics of the English of Canadian hockey players, I have been able to demonstrate that a hockey persona certainly exists in the minds of Ontarians. I have also shown that HE can be considered as a subvariety of Canadian English, a sociolect spoken by the close-knit community of hockey players that forms a uniquely Canadian CoP.

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Appendices

Appendix A: Production study

Appendix A.1: Recruitment poster

PAC Wordlist 1

1. start
2. pause
3. err
4. peril
5. poor
6. steer
7. scarce
8. sorry
9. fail
10. leaven
11. bury
12. fall
13. brewed
14. Mary
15. side
16. four
17. bode
18. bard
19. plant
20. room
21. foul
22. stairs
23. meat
24. dole
25. berth
26. pore
27. fair
28. bed
29. short
30. look
31. calm
32. fierce
33. gourd
34. bored
35. paws
36. here
37. for
38. foil
39. next
40. bid
41. foal
42. more
43. feel
44. sue
45. caught
46. row
47. weight
48. barred
49. heaven
50. pant
51. shepherd
52. story
53. pit
54. sport
55. pearl
56. berry
57. board
58. pat
59. paw
60. file
61. word
62. agreed
63. cook
64. purr
65. greed
66. brood
67. say
68. bad
69. weary
70. pet
71. moor
72. full
73. merry
74. knot
75. ants
76. knows
77. rose
78. far
79. put
80. fill
81. pour
82. beard
83. stir
84. spirit
85. afterwards
86. dance
87. earth
88. horse
89. fool
90. hurry
91. fir
92. leopard
93. soot
94. sighed
95. fore
96. vexed
97. pert
98. sigh
99. meet
100. jury
101. there
102. putt
103. furl
104. rows
105. pot
106. wait
107. bowed
108. farther
109. fell
110. hoarse
111. master
112. aunts
113. fur
114. pose
115. sea
116. bird
117. war
118. mate
119. bard
120. bead
121. doll
122. marry
123. nose
124. naught
125. bared
126. cot
127. father
128. choice
129. lava

Appendix A.2: PAC wordlist 1

PAC Wordlist 2

1.	wet	33.	heart
2.	bedding	34.	rack
3.	seal	35.	betting
4.	chutney	36.	thick
5.	little	37.	tuck
6.	earthy	38.	fan
7.	kidney	39.	meddle
8.	sinner	40.	anyhow
9.	supper	41.	loch
10.	grace	42.	badge
11.	bigger	43.	carter
12.	rung	44.	leisure
13.	bell	45.	middle
14.	sack	46.	batch
15.	lock	47.	written
16.	lab	48.	metal
17.	belly	49.	garter
18.	rum	50.	which
19.	decree	51.	graze
20.	run	52.	bishop
21.	lap	53.	fad
22.	van	54.	behave
23.	singer	55.	stronger
24.	bicker	56.	pat
25.	rubber	57.	simmer
26.	zeal	58.	sag
27.	degree	59.	duck
28.	lack	60.	berry
29.	bet	61.	bat
30.	witch	62.	this
31.	yet	63.	ridden
32.	worthy	64.	fat

Appendix A.3: PAC wordlist 2

A Christmas interview

If television personalities are anything like the rest of us, all they really want to do in Christmas week is snap at their families, criticize their friends and make their neighbours' children cry by glaring at them over the garden fence. Yet society expects them to be as jovial and beaming as they are for the other fifty-one weeks of the year. If anything, more so.

Take the Reverend Peter Smith, the TV vicar who sends out press releases in which he describes himself as "the man who has captured the spirit of the age". Before our 9 a.m. meeting at his media office on Crawshaw Avenue, South London, he faced, he says, a real dilemma. Should he make an effort to behave like a Christian, throw his door open, offer me a cup of tea or should he just play it cool, study his fingernails in a manner that shows bored indifference and get rid of me as quickly as possible? In the end, he did neither.

"As a matter of fact, John", he says in a loud Estuary English twang, "St Francis said, 'At all times preach the gospel and speak whenever you have to'. But hey, he didn't mean 'Be on your best behaviour and be happy all the time'. I could have been extra-polite to you, but the real me would have come out as I was talking. You cannot disguise what you are."

"And what are you then, Peter?"

"Well, I'm a Christian, John. I've been one since I was 14. And I know for sure that Christianity will be judged more on what you do rather than what you have to say about it." In many ways, Peter Smith looks exactly how you'd expect a high-profile television personality to look: tall, handsome, clean-cut and evenly sun-tanned. He doesn't wear a dog-collar. In fact, when doing his various religious programmes on Sunday mornings, he has been known to wear a black leather jacket instead, in casual mode. Today, the look is more business-like: metal-rimmed glasses, a grey suit, a blue open-neck shirt, and fashionable black shoes with large buckles. Smith is 44 but he looks a mere 24.

During the whole interview, Peter Smith stressed the need to be on the side of the poor and the needy. He also talked about his forthcoming trip to China and the masses waiting for his message there. I ventured a few questions relating to the charity trust he founded some ten years ago and which, it is generally agreed, employs eight hundred staff and runs schools, hospitals and hostels around the world. I did mention criticisms in the press of the way charitable organizations are run these days but tried not to sound hostile. He just sighed in answer to my remarks and said: "I'm only human, John. God knows I do my best and often fail, But it's no skin off my nose if our enemies sneer at some of the good work we do. Truth will out."

Appendix A.4: PAC text

How old are you?

What gender do you identify as?

Where were you born?

Where do you live?

Where have you lived before? For how long did you live there? How old were you at that time?

What's your job? What do you do? / What do you study and where?

What have you done before?

What level of education do you have? What type of education do you have? Until what age did you study?

What language do you speak? At what level? (fluency)

How often do you speak the language(s)? (frequency of use)

When was your father born?

Where was your father born?

What does he do?

What level of education does he have?

What language(s) does he speak?

When was your mother born?

Where was your mother born?

What does she do?

What level of education does she have?

What language(s) does she speak?

Are you married? Living with someone?

Where was she/he born? Where is he/she from?

What does he/she do?

What level of education does he/she have?

What language(s) does he/she speak?

Do you have children? If yes, how many ?How old are they? What do they study?

Who would you say played an important role in your acquisition of the English language? (grandparents, caretaker..)

1

CITY

So you said you live in _____

What type of accommodation do you have?

Do you like your neighborhood?

What is it like to live in that part of the city?

If you had to live in another part of the city, where would you choose to live ?

Is there another city you would prefer to live in in Canada?

HOBBIES

What do you like to do in your free time?

What cultural activities do you enjoy?

Have you ever traveled ?

If yes, where have you been?

If no, where would you like to go?

What do you like about travelling?

IDENTITY

How would you identify?

Do you think that you're a true Canadian?

What do you think being a true Canadian means?

LANGUAGE

Would you say you speak a type of English that is typical of Canada, or what people sometimes call "Standard Canadian English"?

If you think that "Canadian English" exists, what would you say its main characteristics are?

Are there any differences in the way you speak when you are at work, when you are with friends, and when you are with your family?

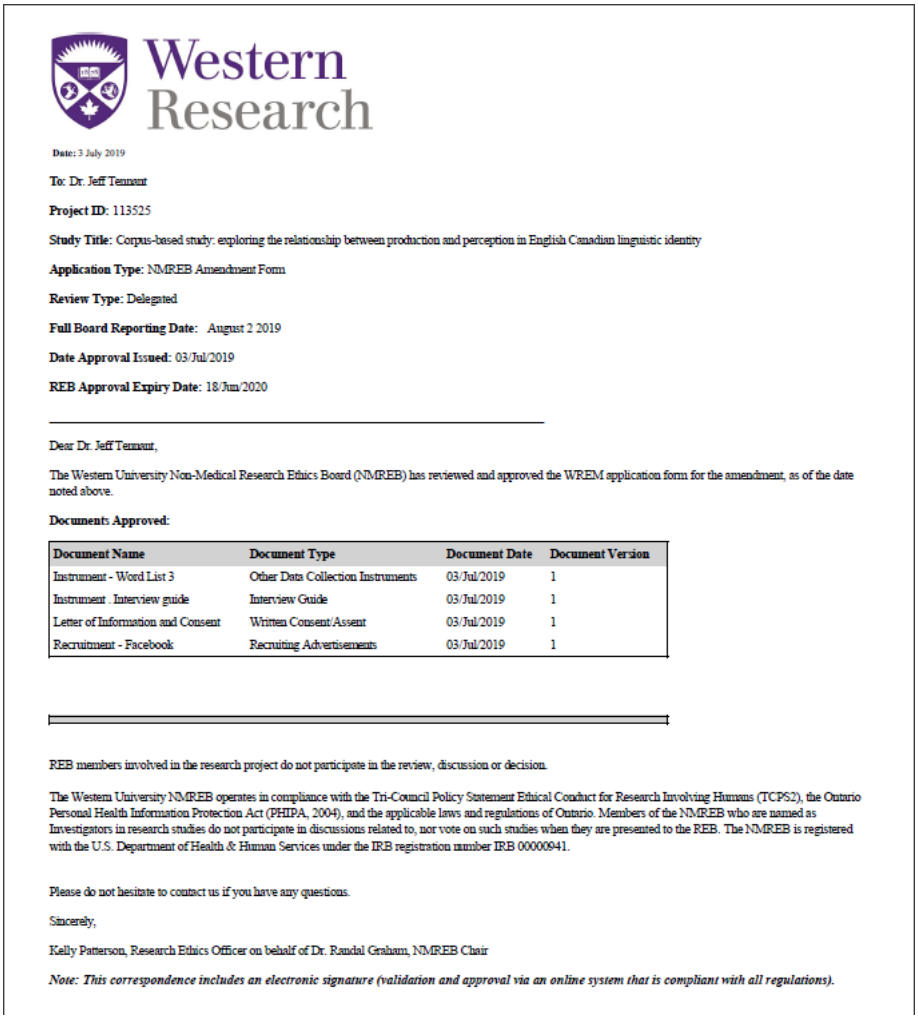
How would you compare the Canadian accent to other accents of English?

Have you ever experienced a time when you were not understood because of your accent/ speech? (crossing the border for example or in a different English speaking country)

Do you have anecdotes about language?

2

Appendix A.5: Interview questions



Western Research

Date: 3 July 2019

To: Dr. Jeff Tennant

Project ID: 113525

Study Title: Corpus-based study: exploring the relationship between production and perception in English Canadian linguistic identity

Application Type: NMREB Amendment Form

Review Type: Delegated

Full Board Reporting Date: August 2 2019

Date Approval Issued: 03/Jul/2019

REB Approval Expiry Date: 18/Jun/2020

Dear Dr. Jeff Tennant,

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the WREM application form for the amendment, as of the date noted above.

Documents Approved:

Document Name	Document Type	Document Date	Document Version
Instrument - Word List 3	Other Data Collection Instruments	03/Jul/2019	1
Instrument . Interview guide	Interview Guide	03/Jul/2019	1
Letter of Information and Consent	Written Consent/Assent	03/Jul/2019	1
Recruitment - Facebook	Recruiting Advertisements	03/Jul/2019	1

REB members involved in the research project do not participate in the review, discussion or decision.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario. Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

Please do not hesitate to contact us if you have any questions.

Sincerely,

Kelly Patterson, Research Ethics Officer on behalf of Dr. Randal Graham, NMREB Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Appendix A.6: Western ethics approval

1. tune
2. rate
3. loud
4. pen
5. crowding
6. milk
7. hairy
8. due
9. collar
10. rider
11. clout
12. bother
13. typewriter
14. bicycle
15. student
16. pass
17. writer
18. dead
19. Harry
20. colour
21. enduring
22. pin
23. clouting
24. staff
25. best
26. revenue
27. louder
28. nuclear
29. kiss
30. housewife

Appendix A.7: PAC wordlist 3

HOCKEY

Do you identity as a hockey player?

If yes what does it mean for you?

How important is hockey in your life?

How many times a week do you play hockey? Do you play hockey all year long?

How long does practise/game usually last?

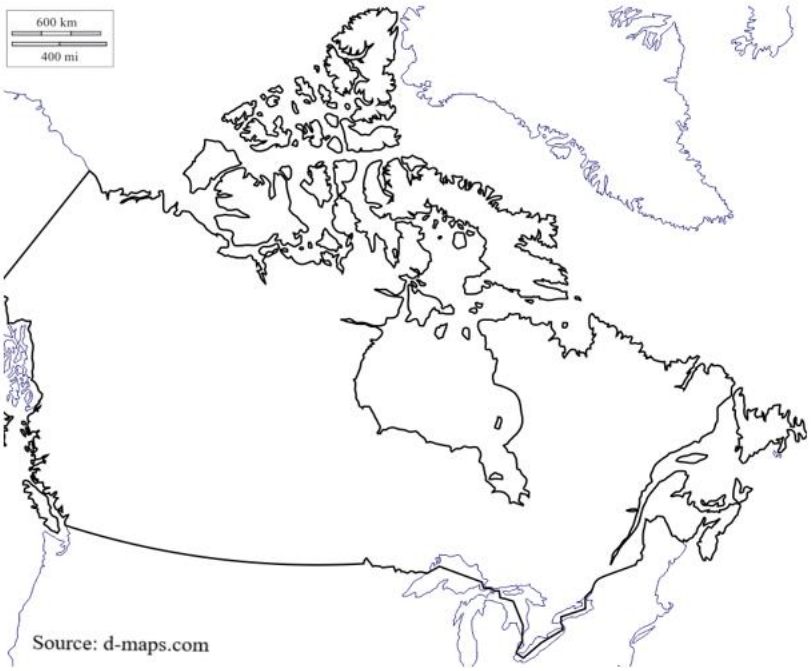
How long have you been playing hockey for?

When did you start playing hockey?

What level of hockey do you play at? (competitive, recreational, professional)

Do you think hockey players have a particular way of talking?

Appendix A.8: Interview questions on hockey



Please answer the following questions:

1. Please draw areas in which you believe people speak the same as each other but differently from people in other areas of the country.

2. What would you call the English dialect spoken in each of the demarcated areas?

Appendix A.9: Perceptual task_Map task

3. Please rate the English spoken in other provinces and territories in terms of correctness.

British Columbia	correct ———	least correct
Alberta	correct ———	least correct
Manitoba	correct ———	least correct
Saskatchewan	correct ———	least correct
New Brunswick	correct ———	least correct
Prince Edward Island	correct ———	least correct
Ontario	correct ———	least correct
Nova Scotia	correct ———	least correct
Yukon	correct ———	least correct
Northwest Territories	correct ———	least correct
Nunavut	correct ———	least correct
Newfoundland	correct ———	least correct
Quebec	correct ———	least correct

Appendix A.10: Perceptual task_rate the perceived correctness

4. Please rate the English spoken in other provinces and territories in terms of pleasantness.

British Columbia	pleasant ———	least pleasant
Alberta	pleasant ———	least pleasant
Manitoba	pleasant ———	least pleasant
Saskatchewan	pleasant ———	least pleasant
New Brunswick	pleasant ———	least pleasant
Prince Edward Island	pleasant ———	least pleasant
Ontario	pleasant ———	least pleasant
Nova Scotia	pleasant ———	least pleasant
Yukon	pleasant ———	least pleasant
Northwest Territories	pleasant ———	least pleasant
Nunavut	pleasant ———	least pleasant
Newfoundland	pleasant ———	least pleasant
Quebec	pleasant ———	least pleasant

Appendix A.11: Perceptual task_rate the perceived pleasantness.

5. How similar is the English spoken in each of these provinces compared to the English you speak?

British Columbia	similar ———	least similar
Alberta	similar ———	least similar
Manitoba	similar ———	least similar
Saskatchewan	similar ———	least similar
New Brunswick	similar ———	least similar
Prince Edward Island	similar ———	least similar
Ontario	similar ———	least similar
Nova Scotia	similar ———	least similar
Yukon	similar ———	least similar
Northwest Territories	similar ———	least similar
Nunavut	similar ———	least similar
Newfoundland	similar ———	least similar
Quebec	similar ———	least similar

Appendix A.12: Perceptual task_rate the perceived similitude

Appendix B: Perception study

Western Research

Date: 10 May 2021

To: Dr. Jeff Tennant

Project ID: 114164

Study Title: Canadian hockey English : production and perception

Short Title: Perception of Canadian English (PCE)

Application Type: NMREB Initial Application

Review Type: Delegated

Full Board Reporting Date: June 4 2021

Date Approval Issued: 10/May/2021 11:35

REB Approval Expiry Date: 10/May/2022

Dear Dr. Jeff Tennant

The Western University Non-Medical Research Ethics Board (NMREB) has reviewed and approved the WREM application form for the above mentioned study, as of the date noted above. NMREB approval for this study remains valid until the expiry date noted above, conditional to timely submission and acceptance of NMREB Continuing Ethics Review.

This research study is to be conducted by the investigator noted above. **All other required institutional approvals and mandated training must also be obtained prior to the conduct of the study.**

Document: Approved:

Document Name	Document Type	Document Date	Document Version
email script	Recruitment Materials	22/Mar/2021	1
recruitment poster1	Recruitment Materials	24/Apr/2021	2
letter of information	Implied Consent/Assent	25/Apr/2021	2
Survey1	Online Survey	25/Apr/2021	2

No deviations from, or changes to the protocol should be initiated without prior written approval from the NMREB, except when necessary to eliminate immediate hazard(s) to study participants or when the change(s) involves only administrative or logistical aspects of the trial.

The Western University NMREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the Ontario Personal Health Information Protection Act (PHIPA, 2004), and the applicable laws and regulations of Ontario. Members of the NMREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB. The NMREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000941.

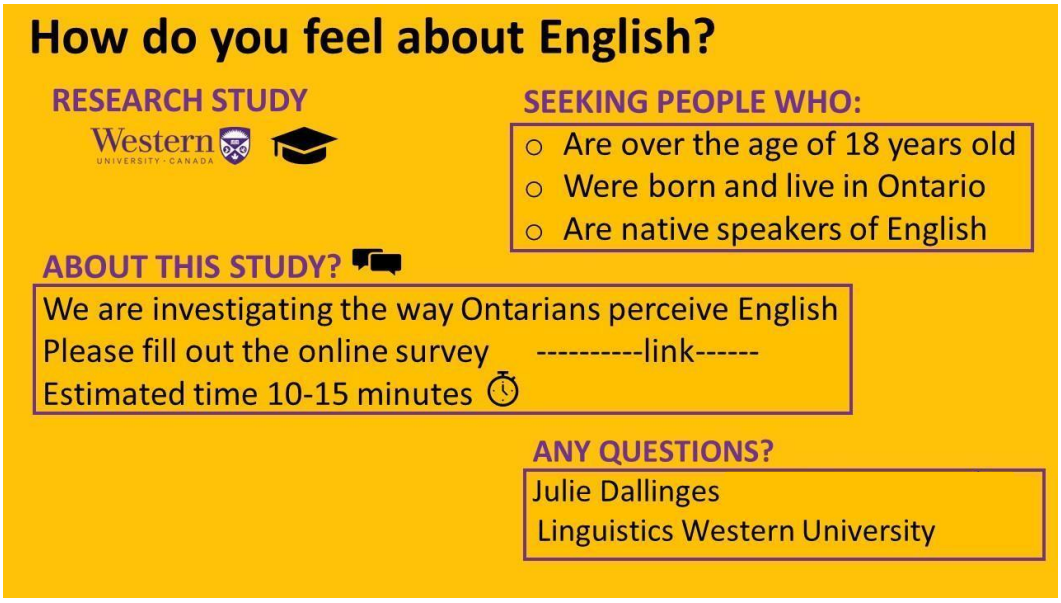
Please do not hesitate to contact us if you have any questions.

Sincerely,

Kelly Patterson , Research Ethics Officer on behalf of Dr. Randal Graham, NMREB Chair

Note: This correspondence includes an electronic signature (validation and approval via an online system that is compliant with all regulations).

Appendix B.1: Western ethics approval



Appendix B.2: Recruitment poster

We invite you to participate in our study which aims at understanding attitudes towards and perceptions of English.
This survey has three sections:

(1) Information about you (Although your participation is anonymous, some demographic information about you is required to process your answers).
(2) Questions about language.
(3) Listening tasks (You will be asked to report how you feel about certain voices, so it would be best to use headphones or take the survey someplace quiet).

It will take no more than 20 minutes to complete the survey. You can use a smartphone or a tablet, but it works better on a computer.

There are no right or wrong answers. Your opinions are what we are interested in. Your first answer is likely to be the best one, so please do not think too much before answering. Answer each question as it comes.

There are no direct benefits to you for participating in this study, but you may find it pleasant and informative to think about Canadian language and identity. There are no known risks or harms of participating in this study and you will receive no compensation.

Participation is voluntary and responses will be kept confidential. If you choose to participate, we ask that you answer all questions however you can withdraw at any time during the survey by simply not proceeding further. If you do not answer all ~~of~~ the questions, your responses will not be included in the study at all.

If you have any questions about this research study, please contact the principal investigator Dr. Jeff Tennant, [redacted] or the PhD student researcher Julie Dallinges, [redacted], Western University.

If you have any questions about your rights as a research participant or the conduct of this study, you may contact The Office of Human Research Ethics

Submission of the survey will be interpreted as your informed consent to participate and that you affirm that:

- You are at least 18 years of age,
- You were born in Ontario,
- You currently live in Ontario,
- You are a native speaker of English.

By clicking on the "I agree" button below you indicate

You have read the above information
You voluntarily agree to participate

◉ I agree

Appendix B.3: Letter of information

By creating this identification code, you will allow the research team to associate your responses in this study to your interview in the production study on Hockey players' talk.

Thus, these sections of the letter of information are different for you:

You will be able to withdraw your data from the study up to one month after you completed the survey. You may contact the research team if you wish to do that.

The master list that will allow to identify you, will be kept in encrypted form on the password-protected computer of the researcher (Julie Dallinges)

It will only be accessible to the research team (Dr Jeff Tennant and Julie Dallinges)

If the results of the study are published, your name will not be used.

Appendix B.4: Additional letter of information

End of Survey

THANK YOU SO MUCH for participating in our survey!

We hope you enjoyed it

If you would like to receive a report of the results of the study when it is completed,

please send an email to:

We would love it if you could share the link to help us spread the word about our research!

Thanks again!

Appendix B.5: End of study message

(1) Information about you

1. Were you interviewed in the production study on hockey players' talk during the fall of 2019?

YES
NO

1'. If yes, please create an identification code which will allow the members of the research team to associate your responses to your interview.
Please write down: the first letter of your first name + the first digit of your age + the first three letters of the city you were born in.
For example, if my first name is Paul, I'm 34 years old, and I was born in Toronto, then my identification code is: P3TOR

2. What gender do you identify as?
- female
- male
- non-binary/ third gender
- other
- prefer to not say

3. How old are you?
- 18-19
- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70-79
- 80-89
- over 90

4. In which city were you born? (It must be in Ontario to be eligible for this study)
……

5. In which city do you currently live? (It must be in Ontario to be eligible for this study)
……

6. Which of the following categories best describes your current employment?
-Professional and management (that usually calls for a degree from university: e.g. dentist, lawyer, etc.)
-Technical and trades (that usually calls for a college degree or training as an apprentice: e.g. pipefitter, personal support worker, cooks, etc.)
-Labour/ service (that usually provides on-the-job training: e.g. cashier, cleaner, waiter, etc.)
-Student
-Not currently employed or studying
-Retired

If you are retired, which categories best describes your former employment?
-Professional and management (that usually calls for a degree from university: e.g. dentist, lawyer, etc.)
-Technical and trades (that usually calls for a college degree or training as an apprentice: e.g. pipefitter, personal support worker, cooks, etc.)
-Labour/ service (that usually provides on-the-job training: e.g. cashier, cleaner, waiter, etc.)

7. What is your level of education (highest completed or in progress)?
-No high school
-Some high school, no diploma
-High school diploma
-College degree
-Apprenticeship training
-Bachelor's degree
-Master's degree
-Doctorate degree

8. Have you ever played hockey?
YES
NO

9. If yes, do you currently play hockey?
YES
NO

10. If yes, how many times a week do you play hockey?
-Four and more
-Twice
-Once
-Less than once a week

11. Do you play hockey in both the winter and summer?
YES
NO

12. How long have you been playing hockey?

- Less than 10 years
- 11 to 20 years
- 21 to 30 years
- More than 30 years

13. How old were you when you started playing hockey?

- Between 2 and 6 years old
- Between 7 and 18 years old
- Over 18 years old

14. What level of hockey have you played at? (Feel free to add any specifications in the comment box)

- Competitive (e.g. travel hockey, junior A, AAA, etc.)
- Intermediate (e.g. house leagues)
- Recreational (e.g. with friends/not in a league)

Comment box _____

15. Do you identify yourself as a hockey player? (Feel free to add any details in the comment box)

YES
I am not sure
NO

Comment box _____

16. How important is hockey in your life? (Feel free to add any specifications in the comment box)

- Very important
- Important
- Not that important

Comment box _____

(2) Questions about language

First section: Canadian English

17.Are you familiar with the term Canadian English?
YES
NO

18.If yes, do you think you speak Canadian English?
YES, I sound Canadian when I speak
NO, I don't sound specifically Canadian when I speak

19. Can you name something specific to Canadian English? Using your own words, list some features of Canadian English? _____

20.Do you think the Canadian accent is different from the American accent?
YES
NO
If yes, why? Using your own words can you describe the differences? _____

21. Do you think the Canadian accent is different from the British accent?
YES
NO
If yes, why? Using your own words can you describe the differences? _____

22.Please choose one to three definitions you consider the best to describe the Canadian accent, from the definitions below.

Is found in cities (urban)
Is found in small towns/country (rural)
Is the same everywhere (uniform)
Is different according to the region (nonuniform)
Sounds proper (appropriate/correct)
Sounds improper (inappropriate/incorrect)
Is easy to understand (intelligible)
Is hard to understand (unintelligible)
Is funny/amusing sounding
Is harsh/aggressive sounding

23.Please choose one to three words that best describe someone speaking Canadian English sounds, from the words below.
Friendly
Unfriendly

Educated
Uneducated

Trustworthy
Untrustworthy

Relaxed
Uptight

Articulate
Inarticulate

Second section: Hockey English

24. Do you think hockey players have a specific way of talking. In other words, is there such a thing as "Hockey English" in Canada?
YES
NO

25. If yes, do you think "Hockey English" is distinct from Canadian English?
YES
NO
If yes, why? Using your own words can you describe the differences? _____

26. Do you speak "Hockey English"?
YES
NO

27. What does a hockey player sound like? _____

28. Do you think there is a difference between male and female hockey players' way of speaking?
YES
NO
If yes, why? Using your own words can you describe the differences? _____

29.Do you think "Hockey English" is only used on the ice/while playing hockey?
YES
NO
If yes, can you list the different places/contexts where you can hear "Hockey English"?
_____

If no, can you list the different places/contexts where you can hear "Hockey English"?
_____

(3) Listening tasks

In this section, you will listen to 10 recordings (6 sentences with male speakers and 4 sentences with female speakers) extracted from informal conversations with people they know. After listening to each recording, you are invited to rate the person you just heard on four categories: friendliness, education, Canadian-ness and accent.

Recording 1

How would you describe the person you just heard?
You may listen to the recording more than once

Very friendly …….. very unfriend
Very educated …….. very uneducated
Very Canadian …….. very non-Canadian
Very neutral …….. very accented

Example:

Do you think this person could be a hockey player?

Yes, definitely
I have no idea
No, I don't think so
There is no way of telling

Why do you think so ?

Appendix B.6: Survey

☐ Is found in cities (urban)	☐ Is found in small towns/ country (rural)
☐ Is the same everywhere (uniform)	☐ Is different according to the region (nonuniform)
☐ Sounds proper (appropriate/correct)	☐ Sounds improper (inappropriate/incorrect)
☐ Is easy to understand (intelligible)	☐ Is hard to understand (unintelligible)
☐ Is funny/amusing-sounding	☐ Is harsh/aggressive-sounding

Appendix B.7: List of definitions to describe the Canadian accent.

☐ Friendly	☐ Unfriendly
☐ Educated	☐ Uneducated
☐ Trustworthy	☐ Untrustworthy
☐ Relaxed	☐ Uptight
☐ Articulate	☐ Inarticulate

Appendix B.8: List of words to describe someone speaking CE.

MP0CR “We’ve been to a couple concerts” **(a male speaker talking about activities he enjoys with his family)**

MP1CR “I have a great work life balance” **(a male speaker describing his work-life balance)**

MP2CR “I would differ that to my wife and she'd probably say Old South” **(a male speaker saying where he would like to live)**

MN0CR “A Christmas party of 48 people” **(a male speaker talking about his last Christmas party)**

MN1CR “It’s nice over here” **(a male speaker talking about his backyard)**

MN2CR “Even out front it was, I don’t know, maybe about a foot above your knee” **(a male speaker talking about the amount of snow)**

WP0CR “Mostly just sports” **(a female speaker talking about what she does in her free time)**
WP1CR “I like writing” **(a female speaker talking about activities she enjoys)**

WN0CR “I helped a little bit in the actual pharmacy” **(a female speaker talking about her duties in her last job)**
WN1CR “I wasn’t allowed to go out a whole lot” **(a female speaker describing her parents' rules when she was younger)**

Appendix B.9: Context of stimuli given to the respondents.

City	Raw count
Toronto	48
London	44
Ottawa	17
Hamilton	13
Kitchener	7
Sarnia	7
Burlington	6
Windsor	6
Brampton	5
Guelph	5
Mississauga	5
North Bay	4
Barrie	3
Cambridge	3
Chatham	3
Owen Sound	3
Simcoe	3
St Thomas	3
St. Catherine	3
Sudbury	3
Belleville	2
Brockville	2
Cobourg	2
Newmarket	2
Orillia	2
Oshawa	2
Sault Ste. Ma	2
St. Thomas	2
Strathroy	2
Thunder Bay	2
Woodstock	2
Ajax	1
Caledonia	1
Dryden	1
East York	1
Elliot Lake	1
Elmira	1
Etobicoke	1
Fergus	1
Galt	1
Hagersville	1
Ingersoll	1
Kapuskasing	1
Kenora	1
Madoc	1
Markham	1
Montreal	1
Napanee	1
Niagara Falls	1
North York	1
Oakville	1
Orangeville	1
Pembroke	1
Peterbrough	1
Pickering	1
Port Elgin	1
Port Hope	1
Stratford	1
Thornhill	1
Vaughan	1
Wallaceburg	1
Waterloo	1
Wiarton	1
Wingham	1
Zurich	1

Appendix B.10: Cities, in Ontario, where survey respondents were born

City	Raw count
London	59
Toronto	42
Ottawa	33
Cayuga	8
Hamilton	7
Waterloo	7
Guelph	6
Kitchener	6
Cambridge	5
St Thomas	3
Stratford	3
Windsor	3
Ajax	2
Burlington	2
Hagersville	2
Mississauga	2
Newmarket	2
North Bay	2
Owen Sound	2
Sarnia	2
Sudbury	2
Vaughan	2
Whitby	2
Acton	1
Amherstburg	1
Arva	1
Aurora	1
Belleville	1
Bradford	1
Brantford	1
Canborough	1
Cornwall	1
Dunnville	1
Elmira	1
Fenelon Falls	1
Fonthill	1
Granton	1
Grimsby	1
Hagersville	1
Halton Hills	1
Ignace	1
Ilderton	1
Kettle Point	1
Kingston	1
Langton	1
Lucan	1
North York	1
Ohsweken	1
Orangeville	1
Oshawa	1
Pelham	1
Penetanguish	1
Port perry	1
Port Stanley	1
Powassan	1
Shallow Lake	1
Simcoe	1
Smithville	1
Southwold	1
St.Catharines	1
Thornhill	1
Thorold	1
Thunder Bay	1
Tillsonburg	1
Waterdown	1
Watford	1
Woodstock	1
Zurich	1

Appendix B.11: Cities, in Ontario, where survey respondents live

Appendix C: Canadian Raising

Traditional social variables

/au-auN/

Univariate Tests

		Dependent Variable	Sum of Squares	df	Mean Square	F
Gender	F1	distance	0.0546	1	0.0546	0.282
	F2	distance	0.3641	1	0.3641	1.099
Residuals	F1	distance	2.5206	13	0.1939	
	F2	distance	4.3086	13	0.3314	

Appendix C.1: MANOVA distance F1 and F2 /au-auN/ and gender

Univariate Tests

	Dependent Variable	Sum of Squares	f	Mean Square	F	p
Age	distance F1	0.0312		0.0312	.159	.696
	distance F2	1.9216		1.9216	.080	.010
Residuals	distance F1	2.5440	3	0.1957		
	distance F2	2.7512	3	0.2116		

Appendix C.2: MANOVA distance F1 and F2 /au-auN/ and age

Univariate Tests

	Dependent Variable	Sum of Squares	f	Mean Square	F	p
SES score	distance F1	1.28		0.214	.32	.348
	distance F2	2.67		0.444	.77	.222
Residuals	distance F1	1.29		0.162		
	distance F2	2.01		0.251		

Appendix C.3: MANOVA distance F1 and F2 /au-auN/ and SES score

Univariate Tests

	Dependent Variable	Sum of Squares	f	Mean Square	F	p
SES group	distance F1	0.0738		0.0369	.177	.840
	distance F2	0.7745		0.3872	.192	.337
Residuals	distance F1	2.5015	2	0.2085		
	distance F2	3.8983	2	0.3249		

Appendix C.4: MANOVA distance F1 and F2 /au-auN/ and SES group

Multivariate Tests

		value	F	df1	df2	p
Gender	Pillai's Trace	0.1252	0.716	2	10	0.512
	Wilks' Lambda	0.875	0.716	2	10	0.512
	Hotelling's Trace	0.143	0.716	2	10	0.512
	Roy's Largest Root	0.143	0.716	2	10	0.512
Age	Pillai's Trace	0.3749	2.999	2	10	0.095
	Wilks' Lambda	0.625	2.999	2	10	0.095
	Hotelling's Trace	0.600	2.999	2	10	0.095
	Roy's Largest Root	0.600	2.999	2	10	0.095
Gender ✻ Age	Pillai's Trace	0.0982	0.545	2	10	0.596
	Wilks' Lambda	0.902	0.545	2	10	0.596
	Hotelling's Trace	0.109	0.545	2	10	0.596
	Roy's Largest Root	0.109	0.545	2	10	0.596

Appendix C.5: Multivariate MANOVA distance F1 and F2 /au-auN/ and gender*age

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
Gender	distance F1	0.0546	1	0.0546	0.2546	0.624
	distance F2	0.3641	1	0.3641	1.5037	0.246
Age	distance F1	0.0107	1	0.0107	0.0499	0.827
	distance F2	1.5775	1	1.5775	6.5143	0.027
Gender ✻ Age	distance F1	0.1497	1	0.1497	0.6979	0.421
	distance F2	0.0674	1	0.0674	0.2783	0.608
Residuals	distance F1	2.3602	11	0.2146		
	distance F2	2.6637	11	0.2422		

Appendix C.6: Univariate MANOVA distance F1 and F2 /au-auN/ and gender*age

/au-auT/

ANOVA - distance F1

	Sum of Squares	df	Mean Square	F	p
Gender	0.918	1	0.918	4.49	0.052
Residuals	2.864	14	0.205		

ANOVA - distance F2

	Sum of Squares	df	Mean Square	F	p
Gender	0.0136	1	0.0136	0.0504	0.826
Residuals	3.7851	14	0.2704		

Appendix C.7: ANOVA distance F1 and F2 /au-auT/ and gender

ANOVA - distance F1

	Sum of Squares	df	Mean Square	F	p
Age	0.187	1	0.187	0.730	0.407
Residuals	3.595	14	0.257		

ANOVA - distance F2

	Sum of Squares	df	Mean Square	F	p
Age	1.85	1	1.850	13.3	0.003
Residuals	1.95	14	0.139		

Appendix C.8: ANOVA distance F1 and F2 /au-auT/ and age

ANOVA - distance F1

	Sum of Squares	df	Mean Square	F	p
Age	0.140	1	0.140	0.630	0.443
Gender	0.644	1	0.644	2.901	0.114
Age ✻ Gender	0.122	1	0.122	0.552	0.472
Residuals	2.663	12	0.222		

ANOVA - distance F2

	Sum of Squares	df	Mean Square	F	p
Age	1.6832	1	1.6832	10.4245	0.007
Gender	0.0111	1	0.0111	0.0686	0.798
Age ✻ Gender	7.39e-5	1	7.39e-5	4.57e-4	0.983
Residuals	1.9376	12	0.1615		

Appendix C.9: ANOVA distance F1 and F2 /au-auT/ and age*gender

ANOVA - distance F1

	Sum of Squares	df	Mean Square	F	p
SES score	3.298	7	0.4712	7.79	0.005
Residuals	0.484	8	0.0605		

ANOVA - distance F2

	Sum of Squares	df	Mean Square	F	p
SES score	1.14	7	0.163	0.492	0.817
Residuals	2.66	8	0.332		

Appendix C.10: ANOVA distance F1 and F2 /au-auT/ and SES score

ANOVA - distance F1

	Sum of Squares	df	Mean Square	F	p
SES group	0.515	2	0.258	1.02	0.386
Residuals	3.267	13	0.251		

ANOVA - distance F2

	Sum of Squares	df	Mean Square	F	p
SES group	0.306	2	0.153	0.569	0.580
Residuals	3.493	13	0.269		

Appendix C.11: ANOVA distance F1 and F2 /au-auT/ and SES group

/ai-aiT/ Univariate Tests

		Dependent Variable	Sum of Squares	df	Mean Square	F	p
Gender	F1	distance	0.0504	1	0.0504	0.316	.582
	F2	distance	0.1217	1	0.1217	2.355	.144
Residuals	F1	distance	2.5527	16	0.1595		
	F2	distance	0.8269	16	0.0517		

Appendix C.12: MANOVA distance F1 and F2 /ai-aiT/ and gender

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
Age	distance F1	0.0227	1	0.0227	0.14080	0.712
	distance F2	1.07e-4	1	1.07e-4	0.00180	0.967
Residuals	distance F1	2.5805	16	0.1613		
	distance F2	0.9484	16	0.0593		

Appendix C.13: MANOVA distance F1 and F2 /ai-aiT/ and age

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
Gender	distance F1	0.05044	1	0.05044	0.3662	0.555
	distance F2	0.12168	1	0.12168	3.0360	0.103
Age	distance F1	0.01601	1	0.01601	0.1162	0.738
	distance F2	0.00244	1	0.00244	0.0609	0.809
Gender ✻ Age	distance F1	0.60819	1	0.60819	4.4151	0.054
	distance F2	0.26331	1	0.26331	6.5695	0.023
Residuals	distance F1	1.92854	14	0.13775		
	distance F2	0.56112	14	0.04008		

Appendix C.14: MANOVA distance F1 and F2 /ai-aiT/ and gender*age

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
SES score	distance F1	1.369	7	0.1956	1.585	0.245
	distance F2	0.302	7	0.0431	0.667	0.697
Residuals	distance F1	1.234	10	0.1234		
	distance F2	0.647	10	0.0647		

Appendix C.15: MANOVA distance F1 and F2 /ai-aiT/ and SES score

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
SES group	distance F1	0.641	2	0.3204	2.45	0.120
	distance F2	0.118	2	0.0590	1.07	0.369
Residuals	distance F1	1.962	15	0.1308		
	distance F2	0.831	15	0.0554		

Appendix C.16: MANOVA distance F1 and F2 /ai-aiT/ and SES group

/ai-aiN/

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
Gender	distance F1	0.00663	1	0.00663	0.0688	0.795
	distance F2	0.10251	1	0.10251	1.4773	0.232
Residuals	distance F1	3.37410	35	0.09640		
	distance F2	2.42873	35	0.06939		

Appendix C.17: MANOVA distance F1 and F2 /ai-aiN/ and gender

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
Age	distance F1	0.0281	1	0.0281	0.293	0.592
	distance F2	0.0122	1	0.0122	0.169	0.683
Residuals	distance F1	3.3527	35	0.0958		
	distance F2	2.5191	35	0.0720		

Appendix C.18: MANOVA distance F1 and F2 /ai-aiN/ and age

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
Gender	distance F1	0.00663	1	0.00663	0.0722	0.790
	distance F2	0.10251	1	0.10251	1.5196	0.226
Age	distance F1	0.02604	1	0.02604	0.2836	0.598
	distance F2	0.01876	1	0.01876	0.2781	0.601
Gender✻ Age	distance F1	0.31817	1	0.31817	3.4654	0.072
	distance F2	0.18376	1	0.18376	2.7240	0.108
Residuals	distance F1	3.02989	33	0.09181		
	distance F2	2.22621	33	0.06746		

Appendix C.19: MANOVA distance F1 and F2 /ai-aiN/ and gender*age

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
SES score	distance F1	1.015	7	0.1450	1.78	0.130
	distance F2	0.504	7	0.0720	1.03	0.432
Residuals	distance F1	2.366	29	0.0816		
	distance F2	2.027	29	0.0699		

Appendix C.20: MANOVA distance F1 and F2 /ai-aiN/ and SES score

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
SES group	distance F1	0.427	2	0.2135	2.46	0.101
	distance F2	0.393	2	0.1964	3.12	0.057
Residuals	distance F1	2.954	34	0.0869		
	distance F2	2.139	34	0.0629		

Appendix C.21: MANOVA distance F1 and F2 /ai-aiN/ and SES group

/ai-aiD/

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
Gender	distance F1	0.1269	1	0.1269	0.837	0.367
	distance F2	0.2494	1	0.2494	4.098	0.051
Age	distance F1	0.0680	1	0.0680	0.448	0.508
	distance F2	0.0869	1	0.0869	1.427	0.241
Gender ✻ Age	distance F1	1.27e-7	1	1.27e-7	8.37e-7	0.999
	distance F2	0.2733	1	0.2733	4.490	0.042
Residuals	distance F1	5.0056	33	0.1517		
	distance F2	2.0087	33	0.0609		

Appendix C.22: MANOVA distance F1 and F2 /ai-aiD/ and age*gender

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
SES score	distance F1	0.910	7	0.1300	0.878	0.535
	distance F2	0.652	7	0.0931	1.373	0.254
Residuals	distance F1	4.291	29	0.1480		
	distance F2	1.966	29	0.0678		

Appendix C.23: MANOVA distance F1 and F2 /ai-aiD/ and SES score

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
SES group	distance F1	0.326	2	0.1631	1.14	0.333
	distance F2	0.241	2	0.1206	1.72	0.194
Residuals	distance F1	4.874	34	0.1434		
	distance F2	2.377	34	0.0699		

Appendix C.24: MANOVA distance F1 and F2 /ai-aiD/ and SES group

Hockey Involvment

/au-auN/

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
HII score	distance F1	1.5310	11	0.13918	0.400	0.886
	distance F2	4.6528	11	0.42298	63.602	0.003
Residuals	distance F1	1.0443	3	0.34809		
	distance F2	0.0200	3	0.00665		

Appendix C.25: MANOVA distance F1 and F2 /au-auN/ and HII score

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
HII group	distance F1	0.0199	2	0.00994	0.0467	0.955
	distance F2	1.8896	2	0.94480	4.0736	0.045
Residuals	distance F1	2.5554	12	0.21295		
	distance F2	2.7832	12	0.23193		

Appendix C.26: MANOVA distance F1 and F2 /au-auN/ and HII group

/au-auT/

ANOVA - distance F1

	Sum of Squares	df	Mean Square	F	p
HII score	3.6906	13	0.2839	6.18	0.148
Residuals	0.0918	2	0.0459		

ANOVA - distance F2

	Sum of Squares	df	Mean Square	F	p
HII score	3.7702	13	0.2900	20.3	0.048
Residuals	0.0285	2	0.0143		

Appendix C.27: ANOVA distance F1 and F2 /au-auT/ and HII score

ANOVA - distance F1

	Sum of Squares	df	Mean Square	F	p
HII group	0.315	2	0.158	0.591	0.568
Residuals	3.467	13	0.267		

ANOVA - distance F2

	Sum of Squares	df	Mean Square	F	p
HII group	0.847	2	0.423	1.86	0.194
Residuals	2.952	13	0.227		

Appendix C.28: ANOVA distance F1 and F2 /au-auT/ and HII group

/ai-aiT/

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
HII score	distance F1	1.754	13	0.1349	0.636	0.760
	distance F2	0.701	13	0.0539	0.871	0.623
Residuals	distance F1	0.849	4	0.2122		
	distance F2	0.248	4	0.0619		

Appendix C.29: MANOVA distance F1 and F2 /ai-aiT/ and HII score

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
HII group	distance F1	0.205	2	0.1023	0.640	0.541
	distance F2	0.135	2	0.0677	1.249	0.315
Residuals	distance F1	2.399	15	0.1599		
	distance F2	0.813	15	0.0542		

Appendix C.30: MANOVA distance F1 and F2 /ai-aiT/ and HII group

/ai-aiN/

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
HII score	distance F1	1.93	13	0.1484	2.35	0.035
	distance F2	1.21	13	0.0930	1.62	0.152
Residuals	distance F1	1.45	23	0.0631		
	distance F2	1.32	23	0.0575		

Appendix C.31: MANOVA distance F1 and F2 /ai-aiN/ and HII score

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
HII group	distance F1	0.0659	2	0.0330	0.338	0.716
	distance F2	0.4077	2	0.2039	3.264	0.050
Residuals	distance F1	3.3148	34	0.0975		
	distance F2	2.1235	34	0.0625		

Appendix C.32: MANOVA distance F1 and F2 /ai-aiN/ and HII group

/ai-aiD/

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
HII group	distance F1	0.0550	2	0.0275	0.182	0.835
	distance F2	0.1395	2	0.0697	0.957	0.394
Residuals	distance F1	5.1455	34	0.1513		
	distance F2	2.4789	34	0.0729		

Appendix C.33: MANOVA distance F1 and F2 /ai-aiD/ and HII group

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
HII score	distance F1	1.362	13	0.1048	0.628	0.807
	distance F2	0.999	13	0.0768	1.091	0.412
Residuals	distance F1	3.838	23	0.1669		
	distance F2	1.619	23	0.0704		

Appendix C.34: MANOVA distance F1 and F2 /ai-aiD/ and HII score

Appendix D: Canadian Vowel Shift

Multivariate Tests

		value	F	f1	f2	p
Age	Pillai's Trace	.5126	.363		4	.007
	Wilks' Lambda	.487	.363		4	.007
	Hotelling's Trace	.0518	.363		4	.007
	Roy's Largest Root	.0518	.363		4	.007
Gender	Pillai's Trace	.3459	.702		4	.051
	Wilks' Lambda	.654	.702		4	.051
	Hotelling's Trace	.5289	.702		4	.051
	Roy's Largest Root	.5289	.702		4	.051
Age * Gender	Pillai's Trace	.0276	.198		4	.822
	Wilks' Lambda	.972	.198		4	.822
	Hotelling's Trace	.0283	.198		4	.822
	Roy's Largest Root	.0283	.198		4	.822

Appendix D.1: Multivariate MANOVA F1 and F2 TRAP and age*gender

Univariate Tests

	Dependent Variable	Sum of Squares	f	Mean Square	F	p
Age	F1 TRAP	0.0577		0.05773	7.82296	.014
	F2 TRAP	0.2730		0.27304	6.15209	.025
Gender	F1 TRAP	0.0116		0.01163	1.57644	.228
	F2 TRAP	0.2473		0.24726	5.57122	.032
Age ✻ Gender	F1 TRAP	5.27e-5		5.27e-5	0.00714	.934
	F2 TRAP	0.0178		0.01776	0.40012	.537
Residuals	F1 TRAP	0.1107	5	0.00738		
	F2 TRAP	0.6657	5	0.04438		

Appendix D.2: Univariate MANOVA F1 and F2 TRAP and age*gender

Multivariate Tests

		value	F	f1	f2	p
Age	Pillai's Trace	.3722	.150		4	.038
	Wilks' Lambda	.628	.150		4	.038
	Hotelling's Trace	.593	.150		4	.038
	Roy's Largest Root	.593	.150		4	.038
Gender	Pillai's Trace	.0942	.728		4	.500
	Wilks' Lambda	.906	.728		4	.500
	Hotelling's Trace	.104	.728		4	.500
	Roy's Largest Root	.104	.728		4	.500
Age⁎ ender	Pillai's Trace	.1233	.985		4	.398
	Wilks' Lambda	.877	.985		4	.398
	Hotelling's Trace	.141	.985		4	.398
	Roy's Largest Root	.141	.985		4	.398

Appendix D.3: Multivariate MANOVA F1 and F2 DRESS and age*gender

Univariate Tests

	Dependent Variable	Sum of Squares	f	Mean Square	F	p
Age	F1 DRESS	0.01860		0.01860	.735	.072
	F2 DRESS	0.17124		0.17124	.512	.238
Gender	F1 DRESS	0.00216		0.00216	.433	.520
	F2 DRESS	0.05222		0.05222	.461	.507
Age ✻ Gender	F1 DRESS	0.00133		0.00133	.267	.613
	F2 DRESS	0.23747		0.23747	.097	.168
Residuals	F1 DRESS	0.07469	5	0.00498		
	F2 DRESS	1.69831	5	0.11322		

Appendix D.4: Univariate MANOVA F1 and F2 DRESS and age*gender

Multivariate Tests

		value	F	f1	f2	p
Age	Pillai's Trace	0.00589	.0415		4	.959
	Wilks' Lambda	0.994	.0415		4	.959
	Hotelling's Trace	0.00593	.0415		4	.959
	Roy's Largest Root	0.00593	.0415		4	.959
Gender	Pillai's Trace	0.11762	.9330		4	.416
	Wilks' Lambda	0.882	.9330		4	.416
	Hotelling's Trace	0.13329	.9330		4	.416
	Roy's Largest Root	0.13329	.9330		4	.416
Age∗Gender	Pillai's Trace	0.13521	.0945		4	.362
	Wilks' Lambda	0.865	.0945		4	.362
	Hotelling's Trace	0.15636	.0945		4	.362
	Roy's Largest Root	0.15636	.0945		4	.362

Appendix D.5: Multivariate MANOVA F1 and F2 KIT and age*gender

Univariate Tests

	Dependent Variable	Sum of Squares	f	Mean Square	F	p
Age	F1 KIT	1.24e-5		1.24e-5	7.60e-4	.978
	F2 KIT	0.00707		0.00707	0.0486	.828
Gender	F1 KIT	5.99e-4		5.99e-4	0.0368	.850
	F2 KIT	0.22163		0.22163	1.5233	.236
Age ✻ Gender	F1 KIT	4.51e-4		4.51e-4	0.0277	.870
	F2 KIT	0.18107		0.18107	1.2445	.282
Residuals	F1 KIT	0.24420	5	0.01628		
	F2 KIT	2.18242	5	0.14549		

Appendix D.6: Univariate MANOVA F1 and F2 KIT and age*gender

Multivariate Tests

	value	F	df1	df2	p
Pillai's Trace	0.733	.16	2	4	0.364
Wilks' Lambda	0.311	.45	2	2	0.215
Hotelling's Trace	2.07	.73	2	0	0.135
Roy's Largest Root	2.00	.00		2	0.020

Appendix D.7: Multivariate MANOVA F1 and F2 and HII group for all three vowels

Univariate Tests

	Dependent variable	Sum of Squares	df	Mean Square	F	p
HII group	F1 KIT	0.05420	2	0.02710	.270	.136
	F2 KIT	0.14959	2	0.07480	.490	.622
	F1 DRESS	0.00740	2	0.00370	.663	.529
	F2 DRESS	0.53012	2	0.26506	.603	.105
	F1 TRAP	0.04309	2	0.02154	.516	.112
	F2 TRAP	0.18693	2	0.09347	.471	.259
Residuals	F1 KIT	0.19106	16	0.01194		
	F2 KIT	2.44261	16	0.15266		
	F1 DRESS	0.08937	16	0.00559		
	F2 DRESS	1.62911	16	0.10182		
	F1 TRAP	0.13701	16	0.00856		
	F2 TRAP	1.01683	16	0.06355		

Appendix D.8: Univariate MANOVA F1 and F2 and HII group for all three vowels

Multivariate Tests

	value	F	d f1	d f2	p
Pillai's Trace	.383	.474	2	4	0.911
Wilks' Lambda	.649	.443	2	2	0.927
Hotelling's Trace	.492	.410	2	0	0.942
Roy's Largest Root	.350	.700		2	0.655

Appendix D.9: Multivariate MANOVA F1 and F2 and SES group for all three vowels

Univariate Tests

	Dependent Variable	Sum of Squares	df	Mean Square	F	p
SES group	F1 KIT	0.00124		.21e-4	.0407	.960
	F2 KIT	0.05752		.02876	.1815	.836
	F1 DRESS	0.00119		.96e-4	.0998	.906
	F2 DRESS	0.12792		.06396	.5038	.614
	F2 TRAP	0.02134		.01067	.1444	.867
	F1 TRAP	0.01638		.00819	.8003	.466
Residuals	F1 KIT	0.24402	6	.01525		
	F2 KIT	2.53468	6	.15842		
	F1 DRESS	0.09558	6	.00597		
	F2 DRESS	2.03131	6	.12696		
	F2 TRAP	1.18242	6	.07390		
	F1 TRAP	0.16372	6	.01023		

Appendix D.10: Univariate MANOVA F1 and F2 and SES group for all three vowels

Appendix E: Perception study demographic profile of respondents

Chapter 10

	No university	University	College
There is Canadian English	16	161	31
Number of informants	19	196	34
There is Canadian English (%)	84,2%	82,1%	91,2%

Appendix E.1: “Is there CE?” by level of education

	Labour/ service jobs	Not currently employed nor studying	Professional and management jobs	Retired	Student	Technical and trade jobs
There is Canadian English	7	5	122	15	30	28
Number of informants	9	6	149	20	32	32
There is CE (%)	77,8%	83,3%	81,9%	75,0%	93,8%	87,5%

Appendix E.2: “Is there CE?” by occupation

Gender	No, I don't sound specifically Canadian when I speak	Yes, I sound Canadian	Yes (%)
Female	24	98	80,3%
Male	17	64	79,0%
Non binary	2	1	33,3%
Prefer not to say	0	2	100,0%

Appendix E.3: “Do you sound Canadian when you speak?” by gender

Canadian English accent	No I don't sound specifically Canadian when I speak
Is different according to the region	33
Is easy to understand	18
Is found in small towns/country	21
Is funny/amusing-sounding	12
Sounds proper	7
Is found in cities	5
Sounds improper	6
Is the same everywhere	3
Is hard to understand	
Is harsh/aggressive sounding	
Number of informants	43

Appendix E.4: CE accent by respondents who believe they don’t sound Canadian

Canadian English accent	Over 40	Over 40(%)
Is different according to the region	65	78,3%
Is easy to understand	51	61,4%
Sounds proper	24	28,9%
Is found in small towns/country	23	27,7%
Is funny/amusing-sounding	12	14,5%
Is found in cities	12	14,5%
Is the same everywhere	8	9,6%
Sounds improper	2	2,4%
Is hard to understand	1	1,2%
Number of informants	83	

Appendix E.5: CE accent by older respondents

Canadian English accent	Under 40	Under 40(%)
Is different according to the region	94	75,2%
Is easy to understand	61	48,8%
Is found in small towns/country	59	47,2%
Is funny/amusing-sounding	32	25,6%
Is found in cities	21	16,8%
Sounds proper	16	12,8%
Sounds improper	13	10,4%
Is the same everywhere	7	5,6%
Is hard to understand	2	1,6%
Is harsh/aggressive sounding	1	0,8%
Number of informants	125	

Appendix E.6: CE accent by younger respondents

Canadian English accent	Female	Female(%)
Is different according to the region	91	74,6%
Is easy to understand	74	60,7%
Is found in small towns/country	47	38,5%
Sounds proper	24	19,7%
Is funny/amusing-sounding	20	16,4%
Is found in cities	20	16,4%
Is the same everywhere	10	8,2%
Sounds improper	4	3,3%
Is hard to understand	1	0,8%
Is harsh/aggressive sounding	1	0,8%
Number of informants	122	

Appendix E.7: CE accent by female respondents

Canadian English accent	Male	Male(%)
Is different according to the region	63	77,8%
Is easy to understand	35	43,2%
Is found in small towns/country	34	42,0%
Is funny/amusing-sounding	23	28,4%
Sounds proper	15	18,5%
Is found in cities	12	14,8%
Sounds improper	10	12,3%
Is the same everywhere	5	6,2%
Is hard to understand	1	1,2%
Is harsh/aggressive sounding	0	0,0%
Number of informants	81	

Appendix E.8: CE accent by male respondents

Education	Canadian English accent	Number	Ranking	Percentage
College	Is different according to the region	23	1	74,2%
	Is easy to understand	13	2	41,9%
	Is found in small towns/country	9	3	29,0%
	Is funny/amusing-sounding	7	4	22,6%
	Sounds proper	7	4	22,6%
	Is found in cities	5	5	16,1%
	Sounds improper	4		12,9%
	Is the same everywhere	4		12,9%
	Is hard to understand	1		3,2%
	Is harsh/aggressive sounding	1		3,2%
	Number of informants	31		
No university	Is different according to the region	14	1	87,5%
	Is easy to understand	9	2	56,3%
	Is found in small towns/country	4	4	25,0%
	Is funny/amusing-sounding	1		6,3%
	Sounds proper	4	4	25,0%
	Is found in cities	5	3	31,3%
	Sounds improper	1		6,3%
	Is the same everywhere	1		6,3%
	Is hard to understand			0,0%
	Is harsh/aggressive sounding			0,0%
	Number of informants	16		
University	Is different according to the region	122	1	75,8%
	Is easy to understand	90	2	55,9%
	Is found in small towns/country	69	3	42,9%
	Is funny/amusing-sounding	36	4	22,4%
	Sounds proper	29	5	18,0%
	Is found in cities	23	6	14,3%
	Sounds improper	10		6,2%
	Is the same everywhere	10		6,2%
	Is hard to understand	2		1,2%
	Is harsh/aggressive sounding			0,0%
	Number of informants	161		

Appendix E.9: CE accent by level of education

CE speakers	Over 40	Under 40
Friendly	65	106
Relaxed	54	93
Trustworthy	22	39
Articulate	22	12
Educated	17	10
Uneducated	4	16
Inarticulate	2	6
Uptight		1
Number of informants	99	150

Appendix E.9: Someone speaking CE by age group

Differences with AmE	Over 40	Under 40
Pronunciation	44	54
Accent	18	32
Diversity of accents	9	11
Southern variety of AmE	11	10
Different closer to the border	5	9
Intonation	2	9
O and A sounds	6	12
Vowels	18	19
CR	9	8
Lexical features	9	12
Enunciation	1	1
Depends on regions	17	29
Number of informants	78	119

Appendix E.10: Differences with AmE by age group

Gender	Age	Age group	Occupation	Education
Male	20 - 29	under 40	Technical and trade jobs	College degree
Male	30 - 39	under 40	Professional and management jobs	Bachelor's degree
Female	18 - 19	under 40	Student	Bachelor's degree
Female	20 - 29	under 40	Professional and management jobs	Bachelor's degree
Female	30 - 39	under 40	Professional and management jobs	Doctorate degree
Male	20 - 29	under 40	Not currently employed or studying	High school diploma
Female	40 - 49	over 40	Professional and management jobs	Bachelor's degree
Female	50 - 59	over 40	Student	College degree
Female	50 - 59	over 40	Professional and management jobs	College degree
Female	60 - 69	over 40	Retired	Master's degree
Female	60 - 69	over 40	Retired	Bachelor's degree

Appendix E. 11: Profile of respondents who think that CE is not different than AmE

Chapter 11

Is there HE?	Female	Male	Non-binary	Prefer not to say	Total
Yes	76	86	3	2	167
Yes (%)	143	100	3	3	249
Number of informants	53,1 %	86,0 %	100,0 %	66,7%	

Appendix E.12: "Is there HE?" by gender

Is there HE?	Over 40	Under 40	total
Yes	52	115	167
Yes (%)	99	150	249
Number of informants	52,5%	76,7%	

Appendix E.13: "Is there HE?" by age group

Is there HE?	No university	University	College	Total
Yes	20	13	134	167
Yes (%)	34	19	196	249
Number of informants	58,8%	68,4%	68,4%	

Appendix E.14: "Is there HE?" by level of education

	Labour/service jobs	Not currently employed nor studying	Professional and management jobs	Retired	Student	Technical and trade jobs
There is HE	4	4	96	13	25	25
Number of informants	9	6	149	20	32	32
There is CE (%)	44,4%	66,7 %	64,4%	65,0 %	78,1 %	78,1 %

Appendix E.15: “Is there HE?” by occupation

Do you speak HE?	Female	Male	Non-Binary	Prefer not to say	Total
No	59	48	2	1	110
Yes	17	38	1	1	57
Yes (%)	22,4%	44,2 %	33,3 %	50,0%	34,1 %
Number of informants	76	86	3	2	167

Appendix E.16: “Do you speak HE?” by gender

Do you speak HE?	Over 40	Under 40	Total
No	39	71	110
Yes	13	44	57
Yes (%)	25,0%	38,3%	34,1%
Number of informants	52	115	167

Appendix E.17: "Do you speak HE?" by age group

Do you speak HE?	No university	University	College	Total
No	12	8	90	110
Yes	8	5	44	57
Yes (%)	40,0%	38,5%	32,8%	34,1%
Number of informants	20	13	134	167

Appendix E.18: "Do you speak HE?" by level of education

Do you speak HE?	Labour/service jobs	Not currently employed or studying	Professional and management jobs	Retired	Student	Technical and trade jobs
No	2	3	66	10	17	12
Yes	2	1	30	3	8	13
Yes (%)	50,0%	25,0%	31,3%	23,1%	32,0%	52,0%
Number of informants	4	4	96	13	25	25

Appendix E.19: "Do you speak HE?" by occupation

	No, I have never played hockey	Yes, I have ever played hockey
No, I don't speak HE	61	49
Yes, I speak HE	7	50
Yes, I speak HE (%)	89,7%	49,5%
Number of informants	68	99

Appendix E.20: "Do you speak HE?" by "Have you ever played hockey?" answers

	I am not currently playing hockey	I am currently playing hockey
No, I don't speak HE	34	15
Yes, I speak HE	20	30
Yes, I speak HE (%)	63,0%	33,3%
Number of informants	54	45

Appendix E.21: “Do you speak HE?” by “Are you currently playing hockey?” answers

Do you identify as a hockey player?	No, I don't speak CE	Yes, I speak CE	Yes, I speak CE(%)
I am not sure	6	5	10,0%
No	26	12	24,0%
Yes	17	33	66,0%
Number of informants	49	50	99

Appendix E.22: “Do you identify as a hockey player?” by “Do you speak CE?” answers

Hockey importance	No, I don't speak HE	Yes, I speak HE	Yes, I speak HE(%)
Important	18	25	50%
Not that important	17	2	4%
Very important	14	23	46%
Number of informants	49	50	

Appendix E.23: “Do you speak HE?” by hockey importance

How long have you been playing hockey?	No, I don't speak HE	Yes, I speak HE	Yes, I speak HE(%)
Less than 10 years	21	25	50%
11 to 20 years	10	14	28%
21 to 30 years	11	4	8%
More than 30 years	7	7	14%
Number of informants	49	50	

Appendix E.24: “Do you speak HE?” by the duration informants have played hockey

HE features	Over 40	Over 40 (%)	Under 40	Under 40 (%)	Total
HE lexical features	15	30,6%	41	39,4%	56
Speed,fast	2	4,1%		0,0%	2
Agressive,profanity	3	6,1%	3	2,9%	6
Letterkenny ref	3	6,1%	7	6,7%	10
HE overly canadian sounding		0,0%	9	8,7%	9
Hockey slang	5	10,2%	28	26,9%	33
Uneducated hockey players	9	18,4%	18	17,3%	27
Rural	6	12,2%	11	10,6%	17
Bro frant language	3	6,1%	12	11,5%	15
Lack of articulation	4	8,2%	3	2,9%	7
Young	2	4,1%	4	3,8%	6
Intonation	3	6,1%	6	5,8%	9
Positive references	4	8,2%	6	5,8%	10
Relaxed		0,0%	5	4,8%	5
Strucuture of sentences	2	4,1%	2	1,9%	4
Relevant answers	49		104		153

Appendix E.25: Features of HE by age group

HE features	College	College (%)	No university	No university (%)	University	University (%)	Total
HE lexical features	7	41,2 %	4	44,4 %	45	35,4 %	56
Speed,fast					2		2
Agressive,profanity					6		6
Letterkenny ref					10		10
HE overly Canadian sounding					9		9
Hockey slang	4	23,5 %	1	11,1 %	28	22,0 %	33
Uneducated hockey players	5	29,4 %	1		21	16,5 %	27
Rural	1	5,9 %			16	12,6 %	17
Bro/frat language	2	11,8 %	2		11	8,7 %	15
Lack of articulation			1		6		7
Young					6		6
Intonation					9		9
Positive references	2	11,8 %	2		6		10
Relaxed	2	11,8 %	1		2		5
Structure of sentences					4		4
Relevant answers	17		9		127		153

Appendix E.26: Features of HE by level of education

	Number of informants	Number of informants (%)
No, there is no gender differences in HE	87	52,1%
Yes, there are gender differences in HE	80	47,9%
Total	167	

Appendix E. 27: "Are there gender differences in HE?"

Are there gender differences in HE?	Female	Male	Non-Binary	Prefer not to say	Total
No, there is no gender difference in HE	28	57		2	87
No (%)	32,2%	65,5%		2,3%	
Yes, there are gender differences in HE	48	29	3		80
Yes (%)	60,0%	36,3%	3,8%		

Appendix E.28: "Are there gender differences in HE?" by gender

Are there gender differences in HE?	Over 40	Under 40	Total
NO, there is no gender difference in HE	28	59	87
Yes, there are gender differences in HE	24	56	80

Appendix E.29: "Are there gender differences in HE?" by age group

Are there gender differences in HE?	Labour/service jobs	Not currently employed or studying	Professional and management jobs	Retired	Student	Technical and trade jobs	total
No, there are no gender differences in HE	2	2	49	8	11	15	87
Yes, there are gender differences in HE	2	2	47	5	14	10	80
Number of informants	4	4	96	13	25	25	167

Appendix E.30: "Are there gender differences in HE?" by occupation

Are there gender differences in HE?	No university	University	College	total
No	8	11	68	87
Yes	12	2	66	80
Number of informants	20	13	134	167

Appendix E.31: "Are there gender differences in HE?" by level of education

Do you think HE is only used on the ice?	Female	Male
No	67	77
No (%)	88,2%	89,5%
Number of informants	76	86

Appendix E.32: "Do you think HE is only used on the ice?" by gender

Do you think HE is only used on the ice?	Over 40	Under 40
No	43	106
No (%)	82,7%	92,2%
Number of informants	52	115

Appendix E.33: "Do you think HE is only used on the ice?" by age group

Where is HE spoken?	Female	Male	Non-Binary	Prefer not to say	Total
Among hockey players	25	29	1	1	56
Everywhere	26	32	2	1	61
Lexical part everywhere	2	4			6
Players on TV interviews, social media	11	12	1	2	26
Bar,parties,alcohol	17	12			29
Social event	9	14			23
Casual setting	6	3			9
Depends on age	3	1			4
Hockey theme	3	5			8
School institutions	8	9			17
Rural areas	4	3			7
Relatives	5				5
Number of informants	67	77	3	2	149

Appendix E.34: “Where is HE spoken?” by gender

Where is HE spoken?	Over 40	Over 40 (%)	Under 40	Under 40 (%)
Among hockey players	18	41,9%	38	36%
Everywhere	11	25,6%	50	47%
Lexical part everywhere	1	2,3%	5	5%
Players on TV interviews, social media	15	34,9%	11	10%
Bar,parties,alcohol	11	25,6%	18	17%
Social event	10	23,3%	10	9%
Casual setting	2	4,7%	7	7%
Depends on age	3	7,0%	1	1%
Hockey theme	4	9,3%	4	4%
School institutions	2	4,7%	15	14%
Rural areas	3	7,0%	4	4%
Relatives	2	4,7%	3	3%
Number of informants	43		106	

Appendix E.35: “Where is HE spoken?” by age group

Where is HE spoken?	No university	University	College	Total
Among hockey players	4	2	50	56
Everywhere	11	8	42	61
Lexical part everywhere			6	6
Players on TV interviews, social media	2	4	20	26
Bar,parties,alcohol	3	2	24	29
Social event		2	21	23
Casual setting	1		8	9
Depends on age		1	3	4
Hockey theme			8	8
School institutions	1	3	13	17
Rural areas			7	7
Relatives	1		4	5
Number of informants	17	13	119	149

Appendix E.36: “Where is HE spoken?” by level of education

Where is HE spoken?	Labour/service jobs	Not currently employed nor studying	Professional and management jobs	Retired	Student	Technical and trade jobs	total
Among hockey players	1	2	37	2	9	5	56
Everywhere	2	1	31	1	11	15	61
Lexical part everywhere	1		3	1	1		6
Players on TV interviews, social media		1	16	3	2	4	26
Bar,parties,alcohol		2	17	3	3	4	29
Social event		1	15	1	5	1	23
Casual setting			7	1		1	9
Depends on age			1	1		2	4
Hockey theme			7			1	8
School institutions	1		5	1	8	2	17
Rural areas			3		4		7
Relatives			4		1		5
Number of informants	4	3	84	9	25	24	149

Appendix E.37: “Where is HE spoken?” by occupation

	HE is distinct from CE	HE is distinct from CE (%)
NO, I don't speak HE	71	62,8%
Yes, I speak HE	42	37,2%
Total	113	

Appendix E.38: “Is HE distinct from CE?” by “Do you speak HE?” answers

	Yes, I speak HE
HE is not distinct from CE	15
HE is distinct from CE	42
Total	57

Appendix E.39: “Is HE distinct from CE?” by “Do you speak HE?” answers

	No, I have never played hockey	Yes, I have ever played hockey	Total
HE is not distinct from CE	28	26	54
HE is not distinct from CE (%)	41,2%	26,3%	
HE is distinct from CE	40	73	113
Total	68	99	167

Appendix E.40: “Is HE distinct from CE?” by “Have you ever played hockey?” answers

	No, I have never played hockey	Yes, I have ever played hockey		Total
		Not currently playing	Currently playing	
HE is not distinct from CE	28	18	8	54
HE is not distinct from CE (%)	41,2%	33,3%	17,8%	
HE is distinct from CE	40	36	37	113
Total	68	54	45	167

Appendix E.41: “Is HE distinct from CE?” by “Are you currently playing hockey?” answers

	Do you identify as a hockey player?		
Is HE distinct from CE?	I am not sure	No	Yes
HE is not distinct from CE	1	14	11
HE is not distinct from CE (%)	9,1%	36,8%	22,0%
HE is distinct from CE	10	24	39
Number of informants	11	38	50

Appendix E.42: “Is HE distinct from CE?” by “Do you identify as a hockey player?”

	Is hockey important for you?		
Is HE distinct from CE?	Important	Not that important	Very important
HE is not distinct from CE	14	7	5
HE is not distinct from CE (%)	32,6%	36,8%	13,5%
HE is distinct from CE	29	12	32
Number of informants	43	19	37

Appendix E.43: “Is HE distinct from CE?” by hockey importance for respondents

HE features	Female	Female (%)	Male	Male (%)	Non Binary
Pronunciation	1	2,22%	3	5,77%	
Articulation deficit	1	2,22%	2	3,85%	
Lexical differences	40	88,89%	44	84,62%	1
Spoken in the hockey community	6	13,33%	1	1,92%	
Not understood outside of the hockey community	4	8,89%	4	7,69%	
An exaggerated CE	7	15,56%	2	3,85%	
More agressive	2	4,44%	5	9,62%	1
Less formal	2	4,44%	1	1,92%	
Difference in intonation	4	8,89%	3	5,77%	
Letterkenny		0,00%	1	1,92%	
More rural	4	8,89%	2	3,85%	
Relevant answer	45		52		1
Total answer	51		61		1

Appendix E.44: “Is HE distinct from CE?” by gender

HE features	Age over 40	Age over 40 (%)	Age under 40	Age under 40 (%)	Total
Pronunciation	1	3,6%	3	4,3%	
Articulation deficit	2	7,1%	1	1,4%	
Lexical differences	24	85,7%	61	87,1%	1
Spoken in the hockey comunity	1	3,6%	6	8,6%	
Not understood outside of the hockey community	2	7,1%	6	8,6%	
An exaggerated CE	3	10,7%	6	8,6%	
More agressive	3	10,7%	5	7,1%	1
Less formal	1	3,6%	2	2,9%	
Difference in intonation	1	3,6%	6	8,6%	
Letterkenny		0,0%	1	1,4%	
More rural	3	10,7%	3	4,3%	
Relevant answer	28		70		1
Ttal answer	36		77		1

Appendix E.45: “Is HE distinct from CE?” by age group

HE features	No university	No University (%)	University	University (%)	College	College (%)	Total
Pronunciation	2		1		1		4
Articulation deficit	1		2				3
Lexical differences	8	88,9%	64	84,2%	13	100,0%	85
Spoken in the hockey community			7				7
Not understood outside of the hockey community	1		6		1		8
An exaggerated CE			7		2		9
More agressive	1		5		2		8
Less formal			3				3
Difference in intonation			6		1		7
Letterkenny			1				1
More rural			6				6
Relevant answer	9		76		13		98
Total answer	10		89		14		113

Appendix E.46: “Is HE distinct from CE?” by level of education

Chapter 12

Is this person a hockey player?	I have no idea	No, I don't think so	There is no way of telling	Yes, definitely	General total	Total (%)
Female	566	266	383	213	1428	14,9%
Male	324	186	290	200	1000	20,0%
Non-binary / third gender	2	13	5	10	30	33,3%
Prefer not to say	4	4	16	6	30	20,0%

Appendix E.47: “Is this person a hockey player?” by gender

Is this person a hockey player?	I have no idea	No, I don't think so	There is no way of telling	Yes, definitely	General total	Total (%)
Over 40	446	136	269	137	988	13,9%
Under 40	450	333	425	292	1500	19,5%

Appendix E.48: “Is this person a hockey player?” by age group

Is this person a hockey player?	I have no idea	No, I don't think so	There is no way of telling	Yes, definitely	General total	Total (%)
No, I have never played	484	232	351	192	1259	15,3%
Yes, I have	412	237	343	237	1229	19,3%

Appendix E.49: “Is this person a hockey player?” by “Have you ever play hockey?” answers

Is this person a hockey player?	I have no idea	No, I don't think so	There is no way of telling	Yes, definitely	General total	Total (%)
No, I'm not a current player	243	124	224	128	719	17,8%
YES, I am	169	113	119	109	510	21,4%

Appendix E.50: “Is this person a hockey player?” by “Are you currently playing hockey?” answers

Gender	Accurate answer to identification
Female	101
Male	103
Non-binary / third gender	6
Prefer not to say	2

Appendix E.51: Accurate identification of hockey players by gender

Age group	Accurate answer to identification
Over 40	63
Under 40	149

Appendix E.52: Accurate identification of hockey players by age group

Have you ever played hockey?	Accurate answer to identification
No	90
Yes	122

Appendix E.53: Accurate identification of hockey players by "Have you ever played hockey?" answers.

Currently playing ?	Accurate answer to identification
No	70
Yes	52

Appendix E.54: Accurate identification of hockey players by "Are you currently playing hockey?" answers.

Hockey importance	Accurate answer to identification
Important	64
Not that important	17
Very important	41

Appendix E.55: Accurate identification of hockey players by hockey importance

Do you identify?	Accurate answer to identification
No	26
Not sure	45
Yes	51

Appendix E.56: Accurate identification of hockey players by identification as a hockey player

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2016-2017 University Degree in Teaching French as a Foreign Language
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2014-2015 Second year MA in English Linguistics
Aix-Marseille University, Aix-en-Provence, France

2013-2014 First year MA in English Linguistics and Literature
University Toulouse II Jean Jaurès, Toulouse, France

2009-2012 BA in English studies: Language, Literature and Culture
University Jean-François Champollion, Albi, France

SCHOLARSHIPS

March 2019 *The Lynne-Lionel Scott Scholarship*
Western University, London, Ontario, Canada

March 2018 *The Lynne-Lionel Scott Scholarship*
Western University, London, Ontario, Canada

2017-2021 *Western Graduate Research Scholarship*
Western University, London, Ontario, Canada

Sept. 2017 Entrance scholarship. Western University, London, Ontario, Canada

WORK EXPERIENCE

2021-2024 **Lecturer**, Aix-Marseille University, Aix-en-Provence, France

2020-2021 **Teaching assistant**, Western University, London, Ontario, Canada

2017-2019 **Teaching assistant**, Western University, London, Ontario, Canada

2015-2016 **Lectrice**, Western University, London, Ontario, Canada

RESEARCH EXPERIENCE

Publications

Dallinges, Julie. 2023. Ontarians' perceptions of "Hockey English", *Journal of Emerging Sport Studies* 8 special issue-the Hockey Conference.

Workshops and Conference presentations

Dallinges, Julie. April 12th – 14th 2023. *Oot and Aboot in Canadian Hockey English: A Multidimensional Approach*. PAC (Phonologie de l'Anglais Contemporain) 2023 Conference Spoken English Varieties: Interfaces and Multidimensional Approaches, University Paris Nanterre, France.

Dallinges, Julie. November 25th – 26th 2021. *The Canadian Vowel Shift in Canadian Hockey Talk. Language Variation and Change Across Borders, International conference*. University of Salerne, Italy (online).

Dallinges, Julie. September1st – 3rd 2021. *Ontarians' Perceptions of Language Variation: Canadian English and Hockey English.* PAC (Phonologie de l'Anglais Contemporain) 2021 Conference Redefining and Representing Realities, Communities and Norms. University Toulouse Jean Jaurès, France (online).

Dallinges, Julie. August 30th – September 3rd 2021. *Ontarians' Perceptions and Associated Representations of Canadian Raising*. 15th ESSE Conference (The European Society for the Study of English) Doctoral symposium. University of Lyon, France (online).

Dallinges, Julie. June 4th - 7th 2021. *'Oot and Aboot' in Hockey Talk*. Conference of the CLA 2021 (Canadian Linguistic Association) (online).

Dallinges, Julie. June 4th - 6th 2021. *Ontarians' Perceptions of Hockey English.* The Hockey Conference. Halifax, Canada (online).

Dallinges, Julie. April 15th 2021. *Les avantages et les inconvénients d'un questionnaire en ligne*. Workshop: L'ère du numérique. Department of French Studies, Western University, Canada (online).

Dallinges, Julie. March 6th 2015. *Le positionnement langagier et la neutralité des Canadiens*. Journée d'étude des LERMAstériales (4th edition). Laboratoire d'Études et de Recherche sur le Monde Anglophone (LERMA), Aix-Marseille University, France.

Poster presentations

Dallinges, Julie. June 4th-5th 2019. *Production and Perception in Canadian Linguistic Identity: A Corpus-based Study.* PAC (Phonologie de l'Anglais Contemporain) 2019 Conference Phonetic and Phonological Variation in Contemporary English: Xperience and Xperimentation. Laboratoire Parole et Langage, Aix-Marseille University, France.

Dallinges, Julie. February 12th-14th 2019. *Exploring the Relationship between Production and Perception in Canadian Linguistic Identity.* Le Forum des Étudiant·e·s du Département d'Études Françaises, Western University, Canada.

Dallinges, Julie. Decembre 13th 2019. *Quelles connaissances linguistiques ont les joueurs de hockey canadiens?* Annual Conference of Ph.D. candidates of Laboratoire Parole et Langage, Aix-Marseille University, France.

Dallinges, Julie. September 29th - October 1st 2016. *Towards a PhD Project, a Pilot Study of Canadian Linguistic Identity*. Conference PAC (Phonologie de l'Anglais Contemporain) 2016 English Melodies. Laboratoire Parole et Langage, Aix-Marseille University, France.