THE CURRENT STATE OF /L/ ALLOPHONY IN ST. JOHN'S ENGLISH

by

© Rosanna Pierson

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Abstract

This project examines the use and evaluation of light post-vocalic /l/ in St. John's, Newfoundland. The city, which was primarily settled by the Irish, traditionally did not conform to the Standard Canadian pattern of /l/ allophony. That is, it was reported to have light /l/ in all positions, in contrast to Canadian English, which has dark /l/ in codas and light /l/ in onsets (Clarke 2012). There have been, however, several major social and economic changes in Newfoundland since the mid-twentieth century, which have impacted local dialects (Clarke 2010). In terms of post-vocalic /l/, data collected by Clarke in St. John's in the 1980s shows that the light variant is declining in use and being replaced by the dark variant, and that little overt awareness is accompanying this change (2012). This study addresses the decline and awareness of this feature, through production and perception experiments, respectively. This work follows that of Clarke in that it looks at younger age groups that have been born since Clarke's study was conducted in the early 1980s.

The results of these experiments suggest that the light post-vocalic /l/ has continued its decline in St. John's English, and that the dark variant is a stable norm. In fact, it is light /l/ in initial position that is experiencing social variation, in that younger speakers are using darker /l/s in this position than their older counterparts. Women, though they display a more standard /l/ allophony pattern overall than men, also show more dramatic initial-/l/ darkening in apparent time. Additionally, there is a significant style shift between word list and interview tasks in this position. The perception experiment shows that there is awareness and stigma associated with the light variant in coda, which could extend to light /l/s in general.

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Table of Contents

List of Figures

List of Tables

Chapter 1: Background

1.1 Introduction

The varieties of English spoken on the island of Newfoundland have long been considered to be distinct from those in the rest of Canada. This is largely due to the settler population of the island, which came mostly from Southwest England and Southeast Ireland (Boberg 2010). Communities within the province are also notably different from each other, due again to different settler populations, but also to their relative social and geographic isolation from each other. St. John's, which saw both English and Irish settlers, traditionally had features from both varieties of English (Clarke 2012; Clarke 1991; Kirwin 1993).

The focus of this study is on one particular feature, light post-vocalic /l/, inherited in St. John's from the Irish English of its settlers. This is not a feature of standard Canadian English, which is generally described as having two allophones of /l/: light /l/, in syllable initial position (i.e. leaf), and dark /l/, syllable-finally (i.e. feel). St. John's is reported to have once had light /l/ in both syllable-initial and syllable-final positions as its norm, as is the Irish pattern (Clarke 2010, 2012). Since the mid-twentieth century, however, Newfoundland has experienced several major social and economic changes, which have in turn affected local dialects and have led to the loss of certain features (Clarke 2010). Regarding post-vocalic /l/, Clarke (2012) states that the light variant is experiencing "dissipation" (p.506) in syllable-final position, or that it is becoming less frequently used as it is being replaced by the more standard dark variant. Additionally, the social distribution of post-vocalic light /l/ is narrowing and, according to Clarke (2012), little overt awareness is accompanying this change.

The decline of this feature was demonstrated in the Sociolinguistic Survey of St. John's English (SSSJE) in the early 1980s (Clarke 1984). Data was analyzed impressionistically and it

showed that this feature was fading, with the suggestion that community members, in general, were not aware of this change. Patterns of /l/ allophony have not been investigated in St. John's since the SSSJE, which was completed over thirty years ago, and acoustic /l/ data has not been analyzed at all. This thesis aims to revisit this feature and determine the current state of /l/ allophony patterns in SJE by conducting both production and perception experiments.

This project is driven by several research questions. First, using spoken language data collected through sociolinguistic interviews and a word list reading task, I aim to determine whether the light post-vocalic /l/ is still in use or if it has continued its decline. This is completed through acoustic measurement and subsequent statistical analysis. I also aim to reveal what groups, if any, still use the traditional Irish light /l/, and if any social categories (gender, age, and education level, specifically) are linked to its use. Additionally, I explore what linguistic factors, or surrounding vowel contexts, play a role in /l/ darkness.

Through the perception experiment, I investigate participants' sensitivity to and evaluation of different types of /l/s. This includes testing if listeners are able to hear a difference between post-vocalic light and dark /l/, and if they can, determining if the difference carries social meaning for them. As in the production side of this study, I examine whether participants' age, gender, and level of education play a role in their awareness of /l/ darkness.

The remainder of this chapter is comprised of a review of the literature on Newfoundland English (NLE), /l/ as a sociolinguistic variable, and perception studies in sociolinguistics, as well as the theoretical approach of the study. Chapter 2 details the methodology of the experiments. The results are displayed in chapter 3 and discussed in chapter 4. Chapter 5 concludes the thesis.

1.2 Literature review

1.2.1 Newfoundland and Labrador English

As mentioned above, NLE is generally considered to be separate from the English spoken in the rest of Canada. This characteristic distinctness, however, is often portrayed in the media as being in the process of dying out (Van Herk 2011). Language change in Newfoundland is frequently spun negatively as the loss of tradition in favour of mainstream Canadian, or American, norms. Recent linguistic research on NLE does not deny that the language is changing over time, as languages have a nature of doing, but scholars such as Clarke (2012) and Van Herk (2011) do not propose that NLE is disappearing. For example, Clarke (2012) concludes that many features are very much alive today, especially those that people are aware of. Features such as TH-stopping and verbal -S marking continue to be heard, imitated, and put on t-shirts, and are believed to be used as markers of a Newfoundland identity (Clarke 2012). These features thrive because people take an active role in preserving them; speakers are also able to manipulate them and use them in different ways than before (Van Herk 2011). For example, verbal -S marking was once most often used in active verbs, like in "I goes to the store," and was more marked when used in stative verbs, such as love, like, or need. This does not seem to be the case today, however, as young people use -S marking predominantly in phrases such as "I loves it" (Van Herk 2011). By doing this, Van Herk (2011) states, young people are not only showing their bidialectal abilities, but they are also displaying a local identity through the performance of the most marked features.

Returning the focus onto St. John's, the results of the SSSJE show that multiple traditional features of St. John's English (SJE) were decreasing in use at the time of the study, which was indicated by a linear generational decline in apparent time. This was true of post-vocalic light /l/,

3

as well as monophthongal /e/, along with other features. The researchers involved in the SSSJE listened to each /l/ token and categorized it as either light or dark. Clarke (2012) states that the evidence from the SSSJE, which shows a generational decline of post-vocalic light /l/ in informal and formal styles, is enough to conclude that in the early 1980s, the dark variant of post-vocalic /l/ was the norm in St. John's. This is a departure from the previous norm, she claims, which was demonstrated by older generations to be the light variant, especially in the formal style (Clarke 2012). It should be mentioned that this reported decline is not necessarily an example of a traditional feature of NLE becoming more standard, since dark post-vocalic /l/ is not exclusively a feature of Standard Canadian English. The pattern is also found in many varieties of British English, and thus, in various parts of Newfoundland and Labrador that were settled by the English. This means that the standard pattern of /l/ allophony has existed alongside the Irish pattern in St. John's due to in-migration from other parts of the island (Clarke 2012). Thus, the question of the decline of light post-vocalic /l/ is not necessarily whether a feature is becoming more Canadian; it could be an artifact of the rural to urban migration that has taken place in Newfoundland over the last century (Clarke 2010).

As described above, the evidence from the SSSJE suggests that light post-vocalic /l/ does not have the same salience to members of the St. John's speech community as TH-stopping or verbal -S marking. Clarke (2012) contends that the decrease in use of light post-vocalic /l/ accompanies a low level of social awareness. This interpretation comes from the fact there is a lack of style shifting in speakers' realizations of /l/ between word list and interview tasks. This means that speakers did not consider one variant of /l/ to be more formal or "correct" than the other. This holds for the speakers who had predominantly light post-vocalic /l/s as well as those with predominantly dark ones. Speakers did not interpret the feature as something that should be

4

changed according to the formality of the situation, while they did so with other features, such as TH-stopping (Clarke 2012).

According to principles outlined by Trudgill (1986), the lack of salience of this feature is not entirely surprising. He states that a feature is salient often when it is undergoing a change, but also if the variables involved are very different from each other and they signal a phonological contrast. The difference between light and dark /l/ is not phonemic in English, and using one in place of the other would not likely cause confusion in communication. On the other hand, it seems unlikely that people are entirely unaware of the feature in NLE because there are some comedic Newfoundland personalities that put it to use in their sketches and songs. For example, Jerry Pack, Donnie Dumphy, Gazeebow Unit, and members of Codco all make use of post-vocalic light /l/ in their impersonations of "townies," or residents of St. John's. What does this mean in terms of overt awareness of the feature? That is, if people are able to use the feature as an identifier of a Newfoundland (townie) identity, does it mean that they are overtly aware of it and that it carries stigma? There is evidence that it does. According to some studies that contrast with Trudgill (1986), such as (Podlipský & Šimáčková 2015) and Zellou, Scarborough & Nielsen (2013), people's ability to imitate a feature depends on the perceptual salience of that feature, and not necessarily on whether the feature creates a phonemic contrast, as is the case for TH-stopping (Podlipský & Šimáčková 2015; Zellou, Scarborough & Nielsen 2013). Therefore, the inclusion of the post-vocalic light /l/ in the impersonation of a townie could indicate salience of the feature, even though Clarke's (2012) findings from the SSSJE suggest otherwise. Since this salience has not been previously examined directly, the perception experiment of this study aims to shed light on the question.

1.2.2 /l/ as a sociolinguistic variable

As previously discussed, there are two well known allophones of /l/: dark and light. These sounds are distinguished by several acoustic and articulatory properties. First of all, dark /l/ has a higher F1 and a lower F2 than light /l/. When producing dark /l/, the tongue body is lower and the tongue root more retracted than in the production of light /l/. Additionally, both sounds are articulatorily complex, with both a tongue body retraction motion and a tongue tip raising motion. For dark /l/, the retraction precedes the raising motion, and for light /l/ both motions happen simultaneously (Halle & Mohanan 1985; Sproat & Fujimura 1993; Turton 2014).

Despite these distinctions, much of the literature on /l/ has argued for several years that the two are not discrete allophones at all. Sproat and Fujimura (1993), for example, argue that dark and light /l/ are, in fact, at opposite ends of a dark-light spectrum. They show that the darkness of an /l/ depends on its position in a syllable and on the duration of a vowel preceding it (Sproat & Fujimura 1993). The idea of gradient /l/ is also supported by the fact that certain languages or dialects have lighter /l/s than others. Van Hofwegen (2009) notes, for example, that Spanish has overall lighter /l/s than English and, likely as a result, speakers of Chicano English also have lighter /l/s than Standard American English. Additionally, Recasens (2004) shows that the light /l/s of languages that are typically described as having them (Spanish, Italian, and German, for example) are different from each other in their degree of darkness, and the same goes for languages with dark /l/s (such as American English and Eastern Catalan). Although there is still debate about whether these variables should be treated as categorical or gradient (Turton 2014), this current study will treat /l/ as gradient. Unlike in the SSSJE, /l/ tokens will not be categorized into the binary light or dark, but will be given numerical darkness values, based on normalized formant measures, that can be compared with each other. This is explained further in the methodology section.

There have been very few sociophonetic studies of /l/ darkening, and Turton (2014) suggests this could be because of its lack of salience. This supports Clarke's (2012) claim that /l/ variation is not a salient feature of of SJE. There are, however, some studies that find sociolinguistic variation of /l/, particularly in dialects of English in the UK. For example, Morris (2013) found in his comparison of English and Welsh /l/s (which are both heavily velarized) that English females have lighter /ɫ/ than Welsh females in word-initial position. He also reports that English males and females have lighter /ɫ/ in word-medial position than Welsh men and women.

In another study, Macafee (1983) found that /l/ in Glasgow also undergoes some sociolinguistic variation. /l/ in Scottish English may be dark in all positions, but it does occur that middle class speakers produce light /l/ in onset positions in order to sound more like Received Pronunciation (RP) productions. Owens (1977) reports sociolinguistic variation of /l/ in Belfast English, especially in word final position, which contrasts with the popular belief that Irish English has light /l/ in all positions. He claims that the rural-associated clear final /l/ is being avoided by the urban working class, but the dark final /l/ is then being avoided by the higher prestige working class. This, in turn, causes the middle class to return to the clear final /l/ as the prestige form (Owens 1977). Across age lines, younger age groups tend to use dark final /l/ in the casual style. In formal styles, however, young men use more of the dark variant, while young women use more of the light. In addition, middle-aged men demonstrate the most style shift, using dark final /l/ in casual style and clear /l/ in formal style. Middle-aged women, on the other hand, style shift the least. They use light final /l/ fairly consistently across styles (Owens 1977). Kingsmore (1995) also found variation in the Irish /l/. Among Coleraine speakers, teenagers and young adults use drastically higher amounts of dark final /l/ than their older counterparts. This is also true of people living in urban areas, as well as those living in government housing (Kingsmore 1995).

These examples serve to demonstrate that /l/ variation can occur across social groups and can carry stigma or prestige, depending on the speech community. This work aims to contribute to this body of literature, and to document what kinds of variation occur in /l/ productions in the St. John's dialect, if any.

1.2.3 Perception studies

The study of sound change involves perception because the listener, like the speaker, plays an important role in creating social meaning (Ohala 1981; Drager 2011). This role cannot be neglected when investigating the evaluation of a certain feature or sound change. Perception studies have been used to examine the interpretation of many phonetic differences, such as in regional dialect (Clopper & Pisoni 2004), ethnicity (Thomas & Reaser 2004; Purnell, Idsardi & Baugh 1999), and sexual orientation (Levon 2006; Munson et al. 2006). They can be used to determine whether participants are able to discriminate between sounds and whether the differences between sounds carry social significance. In this study, a discrimination task as well as an affective scale ranking are used to address the perception of light and dark post-vocalic /l/s. Both tasks are described in detail in Chapter 2.

There has, however, been little research done on the perception of dialects, or of any other factors, in NLE. In one study, Clarke's "Sampling attitudes to dialect varieties in St. John's" (1982), listeners were asked to rate different dialects on scales of social status and social attractiveness. They were presented with the connected speech from male speakers of either a non-standard dialect of NLE, Standard Canadian English, or RP. The results show that the non-standard dialects of NLE were ranked lower in social status, but higher in social attractiveness than the Standard Canadian and the RP variety (Clarke 1982).

The scaled ranking system is also used by Levon (2006) to gauge people's evaluation of a speaker's sexual orientation, based on pitch range and sibilant duration. Unlike Clarke (1982), Levon (2006) uses a matched guise technique to elicit responses. This means that participants listen to productions form one speaker, which have been acoustically altered in order to create the desired variation. This technique is used in this current study as well, and is described in detail in the methodology section.

The above mentioned studies all document results using a forced-choice ranking or classification task. This current study also uses this method, but additionally takes some open-ended responses into account. Drager (2011) acknowledges the fact that collecting social information through forced-choice tasks, although easy to quantify and analyze, does not account for the potential complexities within that information. For this reason, she suggests including some open-ended elements in a perception study so that important information is not missed, even if the data collected is a lot messier than in a forced-choice task (Drager 2011).

1.3 Theoretical approach

1.3.1 Variationist framework

This project investigates /l/ allophony from a variationist perspective, which consists of three main considerations (Tagliamonte 2006). First of all, as the name suggests, language varies in a systematic way (orderly heterogeneity). A speaker can convey a single message in more than one way, varying syntactically, morphologically, phonetically, or all of the above, but the choice between variants is influenced by the context of the utterance. This means that a speaker of SJE may use both light and dark variants of post-vocalic /l/, depending on the linguistic environment of the utterance, the formality of the situation, or the person they are speaking to. Secondly, languages are always in flux and change is normal. Variationists believe that diachronic change

must be caused by synchronic variation, when subtle alterations begin to carry prestige or stigma. This leads to the third consideration: that these variations carry more than just linguistic meaning. A speaker can make a choice (whether he/she is aware of it or not) between variants in order to convey information about him/herself or portray a certain identity.

As Tagliamonte (2006) states, variationist sociolinguistics examines the interaction of linguistic and social factors "in balance with each other" (p. 5). This means that when reporting on a variable form, both internal (grammatical) and external (social) aspects must be considered. In this study, the internal factors include how the position of /l/ in the word (word final or word initial) and the vowel context (vowels preceding and following /l/) have an effect on the quality of the /l/. The external factors are age, sex, level of education, and level of formality of the utterance. These groups are broken down in the methodology section. As was previously stated, language varies in systematic ways, which means it can be measured quantitatively. In this paper, a mixed effects linear regression model is presented that accounts for the internal and external factors that have a significant effect on /l/ variation.

The different levels of formality are used in variationist sociolinguistics because one of its main goals is to access the vernacular of an individual. This means gaining speech data from speakers in an informal setting, when they are paying least attention to how they are speaking (Tagliamonte 2006). This can be achieved by performing a sociolinguistic interview, if the speaker is comfortable enough to speak naturally with the interviewer. The word list is then considered as a more formal task, where the speaker is paying more attention to how he/she is speaking.

1.3.2 Apparent time hypothesis

Since age is a major external factor considered in this research, the apparent time hypothesis plays an important role. This hypothesis claims that a person's grammar remains stable after reaching a certain age. Therefore, studies of this type collect the speech of different age groups and treat any differences between them as changes in the language over time (Labov 2001). There are, of course, issues with this assumption, since it chooses to ignore any linguistic changes that could occur in an individual's lifespan (age-grading). Milroy & Gordon (2003) point out, however, that most age-graded features concern children and adolescents, and past these ages this kind of feature is quite uncommon. They also note that the most likely candidates for age-grading are features that are highly socially salient. In this particular case, the speech of children or adolescents is not being documented, and the salience of the feature in question is up for debate, so age-grading does not seem likely to be an issue.

Although this project looks to Clarke's SSSJE as a guide for experimental design and a baseline for results, it does not use the data for a real-time comparison. The reason for this is that which was mentioned above: the SSSJE data were analyzed impressionistically, and the results of this study are examined acoustically. Since it is difficult to draw direct comparisons between these two types of data, this is an apparent time study.

1.3.3 Change from above or below

According to Labov (2001), a change from above is one that is imported from another linguistic system and is above the level of conscious awareness (people are aware of it). This type of change occurs when a form carries a certain level of prestige with which speakers wish to be associated. A change from below, on the other hand, occurs from within a system and is below the level of conscious awareness (people are unaware of it) (Labov 2001).

In the case of post-vocalic light /l/, it seems unclear whether its decline is a change from above or a change from below. The dark variant is likely imported from both the standard North American dialect and other parts of NL (settled by the English), which could suggest a change from above led by the upper class in an attempt to sound more "standard." However, the fact that speakers demonstrate little social awareness of the feature in question, as Clarke (2012) claims, is indicative of a change from below. The results of the perceptual experiment bring light to this question through determining the level of social awareness of light post-vocalic /l/. If people show more awareness of the feature than was reported in the SSSJE, then the Labovian classification of a change from above would fit for this feature. That is, the dark variant would be a prestige norm that people are aware of. If the perception experiment yields no awareness of the feature, then either Labov's principles do not apply in this case (as is reported elsewhere, such as in Dubois & Horvath 1999 and Baranowski 2013), or the change has come from within the speech community.

Chapter 2: Methodology

This study consists of both production and perception elements, which were carried out on 24 people who were raised and continue to live in St. John's. This section will outline both of these elements and the tasks that comprise them, the results of which are presented in the next chapter. In terms of the order of experiments, the participants first read the word list and reading passage, then participated in an hour long interview, and finally performed the discrimination task and the affective scale ranking of the perception experiment. Both the production and perception tasks involved the same participants: 12 females and 12 males, ranging in age from 24 to 50. People of these ages would not have been included in Clarke's study from the 1980's, since they were either too young or not yet born. In this way, this study picks up where Clarke left off.

As an indicator of socioeconomic status (SES), I have chosen to use level of education, in a simplified form. There are two groups of participants: those who have attended university, and those who have not. Of course, this one characteristic does not provide a complete picture of SES, but since measuring SES is a complicated and contentious task (Milroy & Gordon 2003), education is the only factor considered at this stage. Furthermore, the SES index from the SSSJE cannot be realistically matched, since it is thirty years old and most likely does not apply today. This makes a direct comparison between the two studies impractical.

A breakdown of the participants is shown in Table 1 below. To see complete demographic information for each participant, refer to Appendix A.

Table 1: participant demographics

| Age	Male		Female	
	University	Non-university	University	Non-university
20-29	2	2	2	2
30-39	2	2	2	2
40-50	2	2	2	2

2.1 Perception pilot study

Before conducting the experiments themselves, a pilot study was performed to determine listeners' perceptual sensitivity to different /l/ variants. This step involved 10 listeners from St. John's of different ages and sexes. No participant in the pilot study participated in the production or perception experiments reported on below. At this stage, participants listened to 30 pairs of words with either dark or light post-vocalic /l/s. The set of words contained a variety of adjacent vowel contexts, as well as some /l/s preceding consonants and some preceding word boundaries. Table 2 below displays the words contained in the stimuli that the participants heard. These words were recorded and edited using Praat. A single speaker recorded several repetitions of a word with a dark /l/, i.e. [mɪɫk], and a nonsense word with a light, pre-vocalic /l/, i.e. [mɪlɪk]. The latter variant was then edited in Praat so that the second vowel was deleted, leaving [mɪlk] with a light post-vocalic /l/. This editing process is similar to that used by Eimas et al. (1971) to produce differing voice onset times. The formant values for the edited variant were measured and compared to a naturally produced canonical light /l/ by the recorded speaker. This ensures that the pilot tokens not only sounded natural impressionistically, but were also acoustically verifiable as a light /l/. Figure 1 shows spectrograms for the word "feel" with both light and dark /l/s, and for the word "lake" to demonstrate how the formants compare for canonical light and dark /l/, as well as for the edited light /l/. On the left side of the figure, showing the light /l/, the first and second formants are far apart at the end of the utterance, while on the right side of the figure, with the dark /l/, the formants are closer together. The light /l/ at the beginning of "lake" is shown in the middle of the figure for comparison.

Table 2: word list for perception stimuli

	Word (x2, plus two repetitions of edited nonsense words)
1	bull
2	call
3	feel
4	help
5	hill
6	hole
7	mail
8	milk
9	null
10	pal
11	scalp
12	school
13	steeple
14	sulk
15	tell

Figure 1: spectrograms for perception stimuli

fil   "lake"   fił
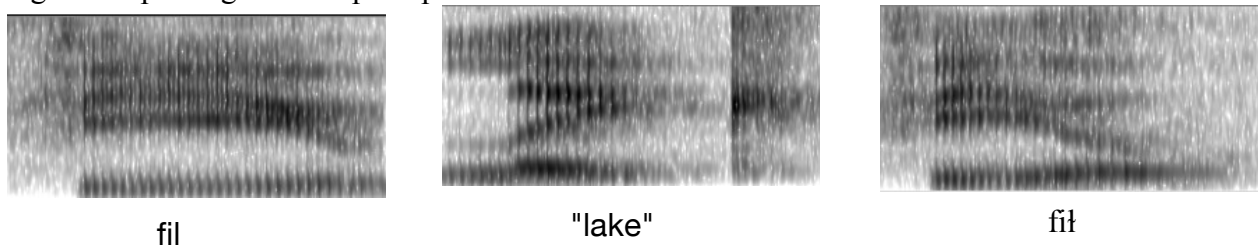
The participants were presented with pairs that consisted of one word with a dark and one

with a light post-vocalic /l/, as well as non-identical light-light and dark-dark pairs. This was to

ensure that if participants did indeed identify a difference between the light-dark pairs, it was not

simply because they were being asked to find a difference. If participants consistently perceived

two of the same word to be different, then their identification of dissimilarity between light-dark

pairs was considered void. They listened to the stimuli using a Logitech H390 USB headset. After each pair was played, they were asked to click a box on a computer monitor that said "same" or one that said "different," according to how they perceived the pair.

In the next task, participants listened to the same words as before, this time organized into a light block and a dark block. They were asked open-ended questions about whether one block sounded more informal/formal than the other, if one sounded more "local" than the other, or if a certain type of person would say one of the words over the other (e.g. a newscaster). In other words, they were asked questions to determine if the contrast between post-vocalic light /l/ and post-vocalic dark /l/ carried any social meaning to them.

The purpose of the pilot study was to get an idea of how sensitive naive listeners are to variations of /l/ in words played in isolation. Since the tokens were not a part of connected speech and the pairs were the same other than the variable post-vocalic /l/, there was no other linguistic cues from the stimuli to inform the listener. This initial step was necessary because it was unclear whether answering these kinds of questions about words played in isolation, varying only in one sound, was a reasonable or effective task. Performing the pilot study allowed for better experiment design of the perception element of this study.

All speakers were able to discriminate between the light and dark post-vocalic variants at a rate better than chance. In fact, no one scored below 70% correct responses. Additionally, 8 out of the 10 participants identified the light variants as sounding more "Newfoundlandy," and the two who did not stated that the dark variants sounded more educated and formal. Participants also remarked that the light variants sounded more friendly, or that they reminded them of their family or friends. One person stated that the speaker with the light variant would be "more likely to say 'hi' on the street."

Given the success of the discrimination task and also the observations of the pilot participants, the design of the pilot study was deemed appropriate for the perception experiment itself. Participants were, in fact, able to glean information from isolated words alone, and so those words were also used in the perception portion of this study.

2.2 Perception experiment

As mentioned above, the perception experiment is comprised of two tasks: a discrimination task and an affective scale ranking. The discrimination task portion is the same as the pilot study, except that after listening to the pairs of words, followed by the two blocks of words, the participants were asked a single open-ended question: whether they thought one block sounded more "local" than the other. The open-ended question portion was originally intended for the pilot study alone, but based on the interesting and varied responses from the initial stage, I decided to include the format in the perception component as well. This provided the participants with a method of articulating information that might not be contained in the discrimination task or the affective scale ranking task. Although this information cannot be quantified like the other tasks, it offers more detailed and individual insights into how people evaluate light post-vocalic /l/s.

The third task of the experiment was the affective scale evaluation. The participants listened to the same words organized into the light and dark blocks. They were given 7 point scales on which to rate each of the blocks according to certain qualities reflecting either status or social attractiveness (similar to Clarke (1982). The listeners had to determine whether the speaker of each of the two blocks seemed confident, intelligent, hard-working, and whether he had a high-paying job, which are all considered reflections of status. They also determined whether the speaker was likeable, kind, friendly, and honest, which reflected social attractiveness.

2.3 Production experiment

The production experiment was modelled after that of the SSSJE (Clarke 1984) in that it consisted of three tasks: a word list, a reading passage (that was not analyzed, however), and an informal interview, performed in that order. The reading passage that was chosen was the same as that used in the SSSJE, but in the analysis stage, it was determined to not be useful for the purposes of this study: the surrounding vowel contexts were not matched and could not be properly compared using statistical methods. The participants were recorded using a Marantz PMD 670 solid state recorder, sampled at a frequency of 22kHz and a 16 bit depth to uncompressed WAV format, with an Audio Technica AT831b condenser microphone. The interviews covered any range of topics, depending on the interests of each speaker. There was no predetermined set of questions asked, so that the conversations would flow naturally. Despite this, the topics covered tended to focus around certain common topics: which neighbourhood the speakers grew up in, what schools they went to, their current and past jobs, past trips and travel plans, pets, and weather (interviews were completed in the winter, so there was a lot to complain about). Both the word list and the reading passage contained words with /l/ tokens in different positions in the word (initial or final), along with filler words (see Appendix B).

Portions of each interview were transcribed by the author and aligned using the Prosody Lab Aligner (Gorman, Howell & Wagner 2011). One hundred tokens of /l/, fifty initial and fifty final, were taken from each interview portion and were measured using Praat, along with the initial and final /l/ tokens from the word list (100). This involved using a script that takes the F1 and F2 measurements at the temporal midpoint of the /l/. These values were normalized using the Fabricius, Watt, and Johnson (2009) method in order to allow for more accurate comparisons between speakers, despite physiological differences. The normalized darkness value of each /l/ was then given by calculating F2 − F1, a measurement which has been used in several other

studies (for example Mackenzie, De Decker & Pierson 2015; Van Hofwegen 2011; Turton 2014) to provide information about both the height and backness of the tongue in /l/ production. Only word-initial and word-final /l/ tokens are taken into consideration because word-medial /l/s tend to vary depending on their morphological constituencies and stress patterns (Lee-Kim & Davidson 2013). For example, as Lee-Kim & Davidson (2013) describe, the /l/s in "tall-est" and in "flaw-less" are in different positions in the word: one comes before a morpheme boundary and the other comes after, respectively. For this reason, the /l/ in "tallest" is darker than the one in "flawless" for the American English speakers in their study. For simplicity's sake, only word-initial and word-final tokens are considered in this analysis.

Regarding statistical testing, mixed effect linear regression models were fitted to the data. Participant and word were considered random effects, while gender, age, education, preceding segment, and following segment were fixed effects.

Chapter 3: Results

This chapter outlines the results of, first, the perception experiment, consisting of the discrimination and affective scale ranking tasks, followed by the production experiment results, which include the word list and interview tasks. These show that participants are able to distinguish between dark and light post-vocalic /l/, and that the difference carries some social meaning, in this case stigma against the light variant. The production results show variation between speakers, but an overall pattern of darker word-final /l/s than word-initial /l/s. Additionally, /l/s appear to be darkening overall in apparent time. The results are discussed further in the following chapter.

3.1 Perception

In the discrimination task, every participant was able to correctly perceive, at a rate higher than chance, when the two words contained different /l/s (one light and one dark) and when they contained the same type of /l/ (either two light or two dark). In fact, the participant that scored the lowest on identifying whether the pair of words contained the same or different types of /l/ was still 73 percent accurate. The results of this task are displayed in Figure 2. Participants heard 30 pairs of words and were "correct" in their response if they identified a pair with a light and a dark /l/ as different, and a pair with the same type of /l/s as the same.

Figure 2: discrimination task
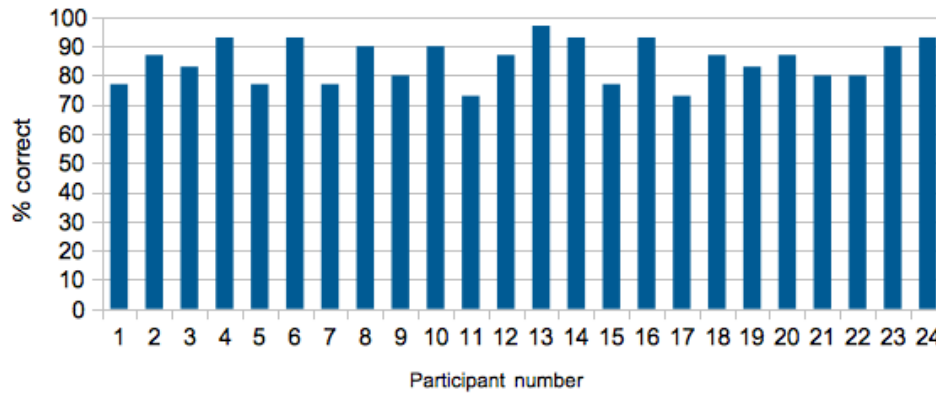
In terms of the affective scale evaluation, a majority (67%) of participants claimed that the speaker of the block with light post-vocalic /l/ sounded more "local" and more "like a Newfoundlander" than the speaker of the dark block. When it came to ranking the blocks on the scales, the listeners rated the dark-/l/ block as having a higher social status (more confident, intelligent, hard-working, and having a higher-paying job) than the light-/l/ block, as shown below in Figure 3.

Figure 3: affective scale ranking, social status
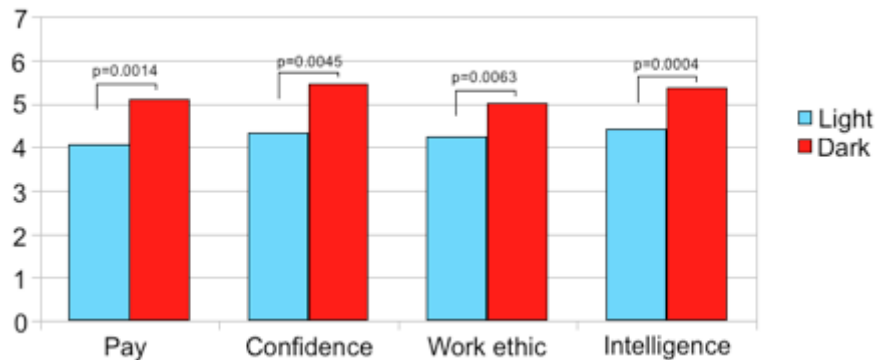
In contrast, as Figure 4 shows, none of the social attractiveness qualities yielded any significant differences between the two blocks, based on paired T-test results at $p < 0.05$.

Figure 4: affective scale ranking, social attractiveness
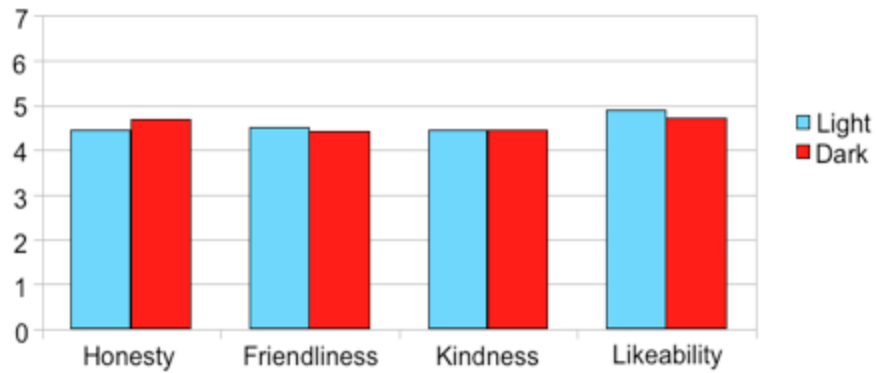
In regard to the social factors of the participants, and how these affected their perceptions of the stimuli, a mixed effect linear regression model was fitted to the affective scale results using R (R Core Team 2015) and lme4 statistical package (Bates et al. 2015). The social factors, age, gender, and education, were entered into the model as fixed effects, but none played a significant role in the ranking of the stimuli, in terms of social status and attractiveness. For the random effects, I entered participant and word as random intercepts. The only factor that is statistically significant is the type of variant (light or dark postvocalic /l/) in the social status ranking, as shown in the figure above, and in Table 3 below. Table 4 shows the effects of social factors on the social attractiveness ratings, none of which are significant.

Table 3: factors contributing to social status ranking

Fixed Effects	Estimate	Std Error	t value
(Intercept)	16.62903	2.97077	5.598
Variant light	-3.29606	3.71647	**-0.887**
Age	0.11087	0.07756	1.429
Male	0.01829	1.33532	0.014
Non-university	0.27808	1.33695	0.208
Variant light:age	-0.01522	0.09703	-0.157
Variant light:male	-0.01396	1.67051	-0.008
Variant light:non-uni	0.18570	1.67254	0.111

Table 4: factors contributing to social attractiveness ranking

Fixed Effects	Estimate	Std Error	t value
(Intercept)	16.52421	3.06586	5.390
Variant light	-1.81125	3.01705	-0.600
Age	0.06071	0.08004	0.758
Male	-2.27769	1.37806	-1.653
Non-university	0.92412	1.37974	0.670
Variant light:age	0.03952	0.07877	0.502
Variant light:male	3.86956	1.35613	2.853
Variant light:non-uni	-2.54940	1.35778	-1.878

In summary, the perception experiment shows that participants are sensitive to the difference between light and dark post-vocalic /l/, and that the majority of them perceive the light variant as a feature of NLE. Additionally, they rank the light variant as lower in social status than the dark variant.

3.2 Production

3.2.1: Interview

The interviews yield 3597 tokens: 1847 word-final and 1750 word-initial /l/s. The number of tokens is also split fairly evenly between each variable of the fixed effects: 1817 from females and 1780 from males; 1838 from university educated participants and 1759 from those who did not attend university. Although the age variable is treated as continuous in the analysis, the number of tokens from each age group are distributed evenly as well. The youngest age group (20-29) produces 1265 tokens, the middle group (30-39) has 1171, and the oldest group (40-50) has 1161.

As a group, the participants follow the standard North American pattern of lighter /l/s word-initially than word-finally in the interview. The box plot in Figure 5 displays the median

and quartile values for each position, in order to demonstrate the difference between them. A t-test between final and initial positions is significant at $p<2.2e-16$ (significance is determined at $p<0.05$ for all following tests).

Figure 5: interview, all participants
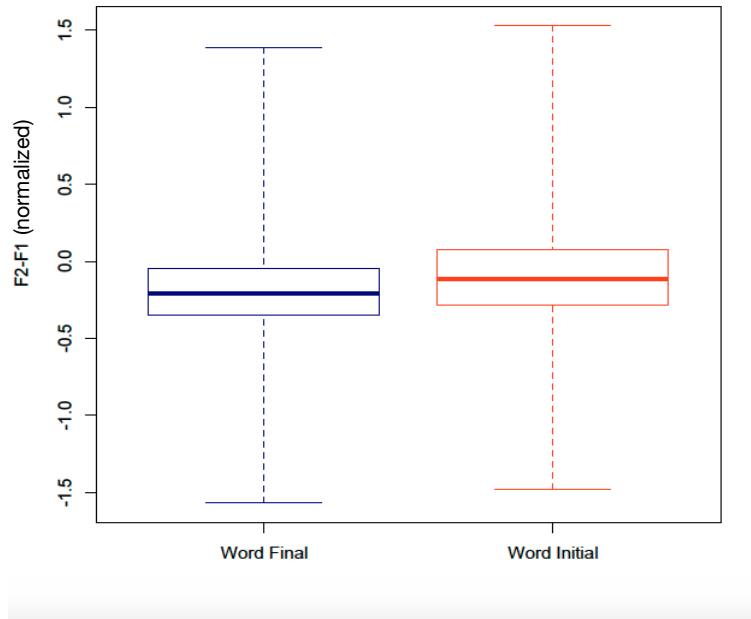
There were, however, individual differences among speakers. Some speakers, such as participant 21 shown in the box plots in Figure 6 below, have distinct initial and final /l/s (according to a t-test, $p=3.055e-13$), as the above overall pattern would predict.

Figure 6: interview, participant 21
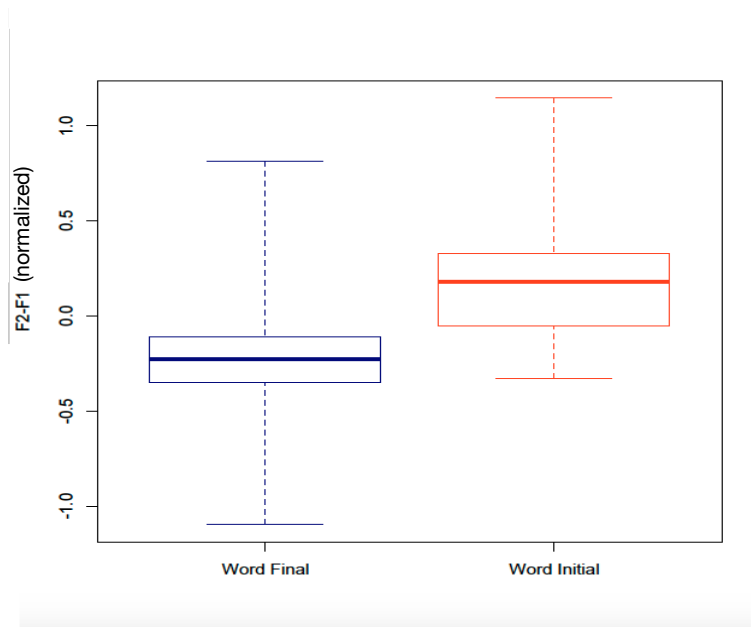
There are 10 of the 24 participants, on the other hand, that do not have significant differences between the darkness values of initial and final /l/s in the interview, according to t-test results. A box plot for speaker 24 (p=0.8345) is shown below in Figure 7 for illustration.

Figure 7: interview, participant 24
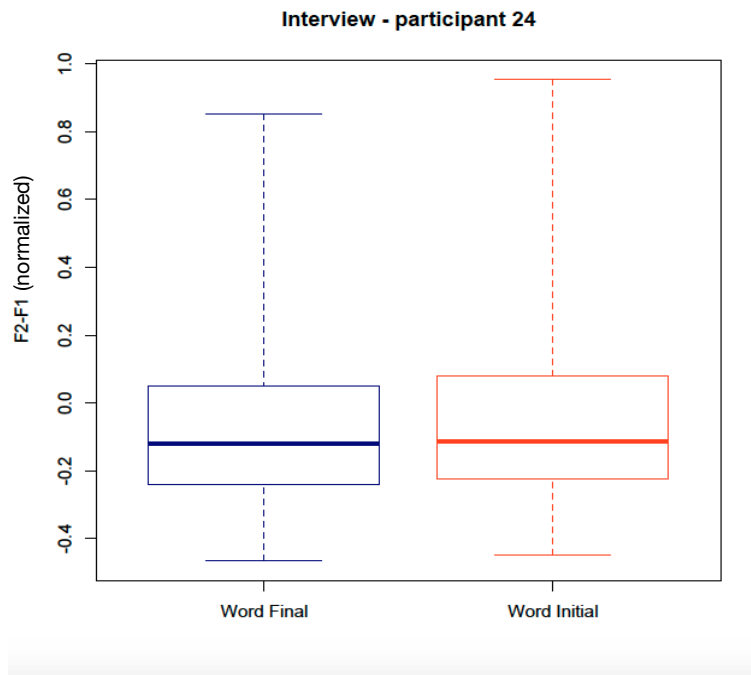
To examine this variation in more detail, and to determine if these differences are idiosyncratic or reflective of social distinctions in the St. John's speech community, the interview data was submitted to a mixed effect linear regression model to determine the effects, if any, of each social factor on the darkness of /l/. Position (final or initial), gender, age, and education were considered as fixed effects, while participant and word were random effects. First of all, gender, while having no significant effect on the model on its own, does show an interaction with position. The model: lmer(normF2.F1 ~ position*gender + (1|participant) + (1|word) was compared to the position model: lmer(normF2.F1 ~ position + (1|participant) + (1|word), using an ANOVA, which showed that the gender interaction contributes significantly (p=1.358e-11). This shows that males have slightly (but not significantly) lighter /l/s overall than females do, but they also have significantly darker /l/s in initial position (see Table 5). Females show a pattern that is more similar to standard Canadian /l/ allophony, while males' final and initial /l/s are more

27

similar to each other. Box plots showing darkness by gender and position are shown in Figure 8 below.

Figure 8: interview, gender and position
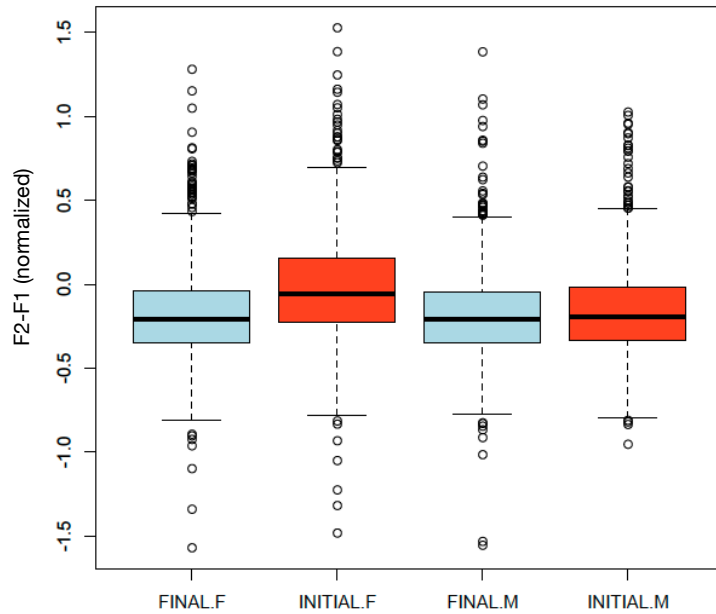
In addition to gender, age is also examined as a factor. This shows no effect on the darkness of the /l/ tokens: not on its own and not in interaction with position. Education, on the other hand, interacts significantly with position (p=0.01402). This was determined using an ANOVA to compare a model including the interaction of education and position and a model with just position. Participants who have not attended university have lighter /l/s overall, but more dramatically so in initial position, as Figure 9 shows.

Table 5: interview, social factors model

Fixed Effects	Estimate	Std Error	t value
(Intercept)	-0.1864229	0.0395331	-4.716
Initial position	0.1458047	0.0182850	**7.974**
Male	0.0005675	0.0451714	0.013
Non-university	0.0016354	0.0451519	0.036
Initial position:male	-0.1288863	0.0187506	**-6.874**
Initial position:non-university	0.0568931	0.0187508	**3.034**

Figure 9: interview, education and position
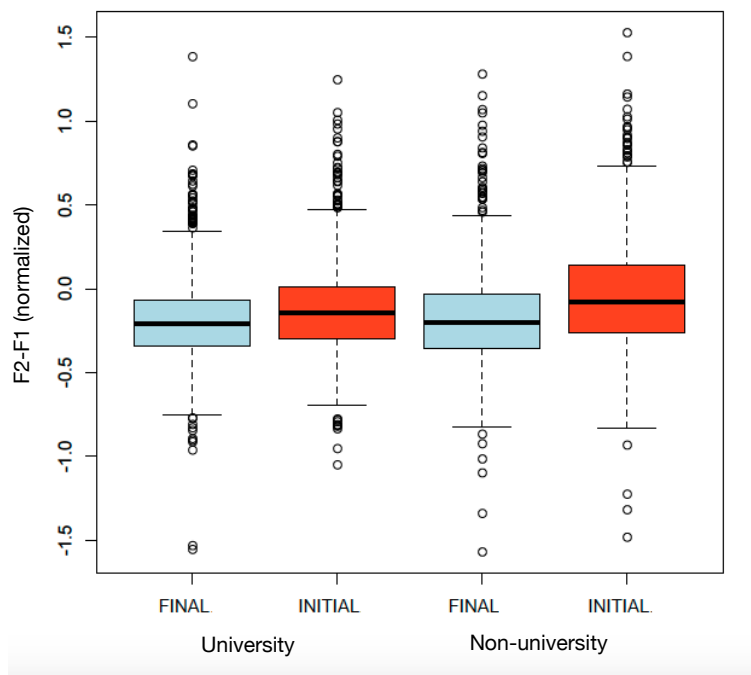
In addition to position as a linguistic factor, the effect of the quality of surrounding vowels on /l/ darkness was also tested. Both preceding and following vowels were considered, which included front (i, ɪ, e, ɛ, and æ), back (u, ʊ, ʌ, o, and ɑ), and reduced vowels (ə), as well as consonants and phrase boundaries. The on-glide of a diphthong was considered for following

segments, and the off-glide for preceding segments. This means that /aɪ/, for example, was classified as a back vowel when following an /l/, but a front vowel when preceding one.

To test the effect of these contexts, I added preceding and following vowel separately to the model with position (model: lmer(normF2.F1 ~ position + (1|participant) + (1|word)), since it has already been determined as the major contributing factor to the model. P-values were obtained by running an ANOVA test between the model with only position as a factor, and models with position and preceding and following vowel, separately. Significance was determined at p<0.05. Using the model: lmer(normF2.F1 ~ position + precedingvowel + (1|participant) + (1|word), preceding vowel is not significant (p=0.08478). Following vowel is significant at p=0.002887, using model: lmer(normF2.F1 ~ position + followingvowel + (1|participant) + (1|word). Table 6 and Table 7 display the results from these tests for both vowel contexts.

Table 6: interview, effects of preceding vowel

Fixed Effects	Estimate	Std Error	t value
(Intercept)	-0.13087	0.03515	-3.724
Initial position	0.10739	0.01547	**6.943**
Front vowel	-0.04416	0.02736	-1.614
Back vowel	-0.03905	0.03034	-1.287
Reduced vowel	-0.06895	0.02773	-2.487
Consonant (few tokens)	-0.05467	0.02508	-2.180

Table 7: interview, effects of following vowel

Fixed Effects	Estimate	Std Error	t value
(Intercept)	-0.21400	0.02692	-7.950
Initial position	0.12713	0.01773	**7.171**
Front vowel	0.02298	0.02015	1.140
Back vowel	0.00860	0.02344	0.367
Reduced vowel (few tokens)	-0.05625	0.03755	-1.498
Consonant	0.05010	0.01730	2.897

A problem arises in this data set when considering the effect of an adjacent consonant or phrase boundary on an /l/ token. An interaction between position and following segment cannot be tested on this data set, since all /l/s followed by consonants and phrase boundaries are in final position. In order to deal with this problem, and to make the vowel contexts of the two positions comparable to one another, all tokens with a following phrase boundary or consonant were eliminated. Additionally, because this leaves an imbalance in the number of final and initial tokens in the data (491 final and 1750 initial), all /l/s preceded by these segments were also eliminated. In other words, a reduced data set is considered to test for the interaction of position and following vowel, containing only intervocalic /l/ tokens. This leaves 479 final and 708 initial /l/s, with evenly balanced social factor groups (age, gender, and education) as well. It is necessary to also test the effects of social factors on this reduced set, in case the mismatch caused by consonants and word boundaries creates skewed variation patterns. The following results come from this more evenly distributed data set.

Like in the complete data set above, final /l/s remain significantly darker than initial /l/s in the more balanced set, according to a t-test with a p-value of 1.386e-11. Figure 10 shows box plots for the two /l/ positions.

Figure 10: reduced data, position
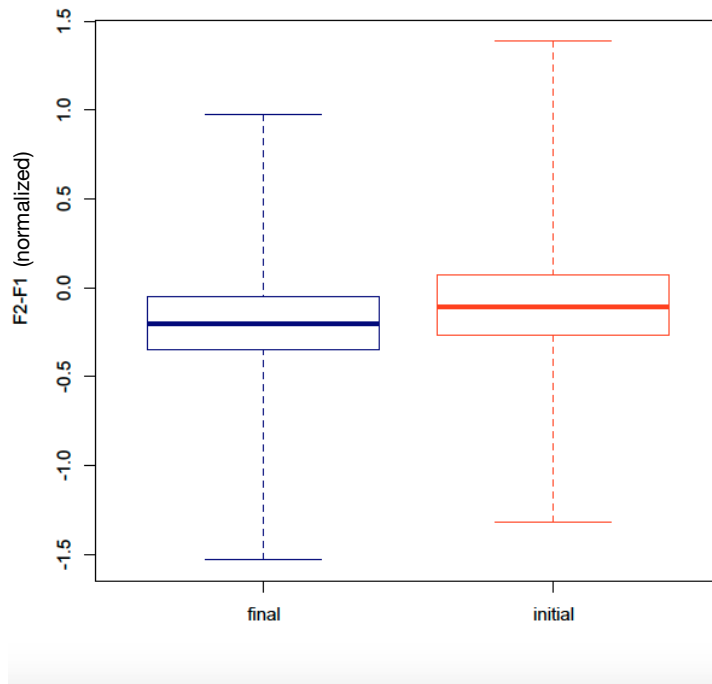
Position is also submitted to a mixed effect linear regression model (model: normF2.F1 ~ position + (1 | participant) + (1 | word)) as a factor. When compared to a model without position as factor using an ANOVA, position contributes significantly to the model with a p-value of 6.405e-09. This makes position very significant to the model in comparison to a model that does not include it as a factor (model: normF2.F1 ~ 1 + (1 | participant) + (1 | word)).

In regards to social factors, both gender and age interact significantly with position in the mixed effect regression model, while education does not have an effect. The best fit model is: lmer(normF2.F1 ~ position*age + position*gender + (1|participant) + (1|word), data=data). Table 8 displays these results.

Table 8: reduced data, social factors

Fixed Effects	Estimate	Std Error	t value
(Intercept)	-0.328025	0.111990	-2.929
Initial position	0.119362	0.075739	**1.576**
Age	0.002611	0.002919	0.894
Male	0.061238	0.050106	1.222
Initial position:age	0.002746	0.001945	**1.412**
Intial position:male	-0.185540	0.032986	**-5.625**

As is seen in the previous results in regards to gender, males are slightly lighter than females overall, but when broken down into position they are darker than females in initial position. This means that males make less of a distinction between positions than females do. In other words, females again follow a pattern more like the standard Canadian /l/ pattern, as is seen in Figure 8. Below, in Figure 11, is a box plot representing the differences between the genders, in regards to position.

Figure 11: reduced data, gender and position
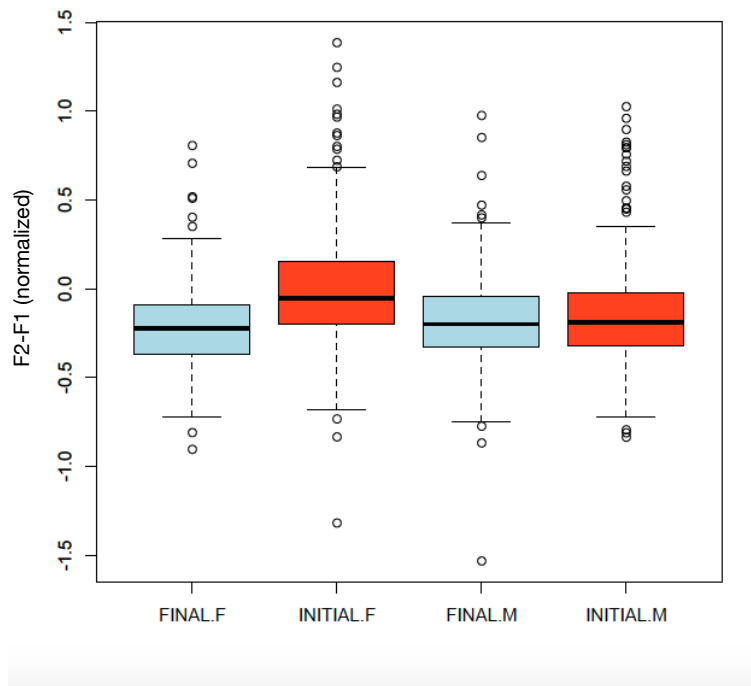
The age effect in this model shows that the older a participant is, the lighter his/her /l/s are. The interaction with position means that this is especially true of initial position, which increases in lightness more than final /l/, the older a participant is. This is displayed in Figure 12, which also illustrates the stability of final /l/ darkness in apparent time.

Figure 12: reduced data, age effect
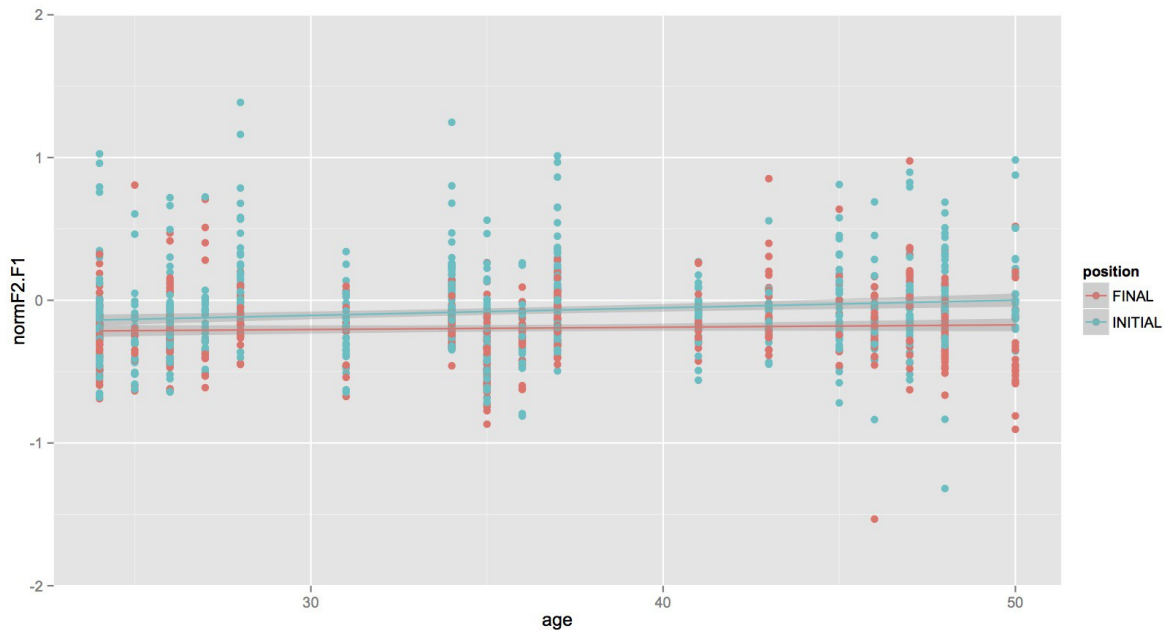
Following vowels do not have an effect on /l/ darkness overall, nor do they interact with

position. This was determined by testing the model: lmer(normF2.F1 ~ position*followingvowel

+ (1|participant) + (1|word)) against the model: lmer(normF2.F1 ~ position + (1|participant) + (1|

word)). The results of this test are displayed in Table 9. The significant interaction between

position and following vowel that exists in the complete data set above must be due to the

inclusion of following consonants and phrase boundaries in the surrounding vowel contexts. This

could indicate an effect of these environments on /l/ darkness, but it could also be a reflection of

the imbalance of tokens in relation to position.

35

Table 9: reduced data, effects of following vowel

Fixed Effects	Estimate	Std Error	t value
(Intercept)	-0.20645	0.02772	-7.446
Initial position	0.15141	0.02494	**6.072**
Following vowel back	0.03354	0.03134	1.070
Following vowel reduced	-0.03797	0.04377	-0.868
Initial:following vowel back	-0.07466	0.04044	-1.846
Initial:following vowel reduced	-0.10926	0.08860	-1.233

Even though preceding vowel is not significant in the complete data set, I tested its effect in the reduced set to see if there is a difference. Using the same method of comparing the model: lmer(normF2.F1 ~ position*precedingvowel + (1|participant) + (1|word)), against the model: lmer(normF2.F1 ~ position + (1|participant) + (1|word)), preceding vowels were found to not have an impact on the darkness of /l/. There was also no interaction found between preceding vowel and position. Table 10 shows these results.

Table 10: reduced data, effects of preceding vowel

Fixed Effects	Estimate	Std Error	t value
(Intercept)	-0.19373	0.03425	-5.656
Initial position	0.13259	0.03205	**4.137**
Preceding vowel back	-0.01362	0.03786	-0.360
Preceding vowel reduced	-0.01100	0.03497	-0.314
Initial:preceding vowel back	0.02372	0.05185	0.457
Initial:preceding vowel reduced	-0.03500	0.04305	-0.813

To summarize the results from the interview data, Figure 13 shows the effects of age, divided by gender to demonstrate the differences between male and female participants. As the figure shows, males of each age group do not display much of a difference between initial and final /l/s. Both positions are darker for younger males than for older ones. Women, on the other hand, have distinct /l/s in the older age group and more similar ones in younger age groups. Again, final /l/ darkness remains relatively stable across age groups for both genders.

Figure 13: reduced data, effects of age and gender
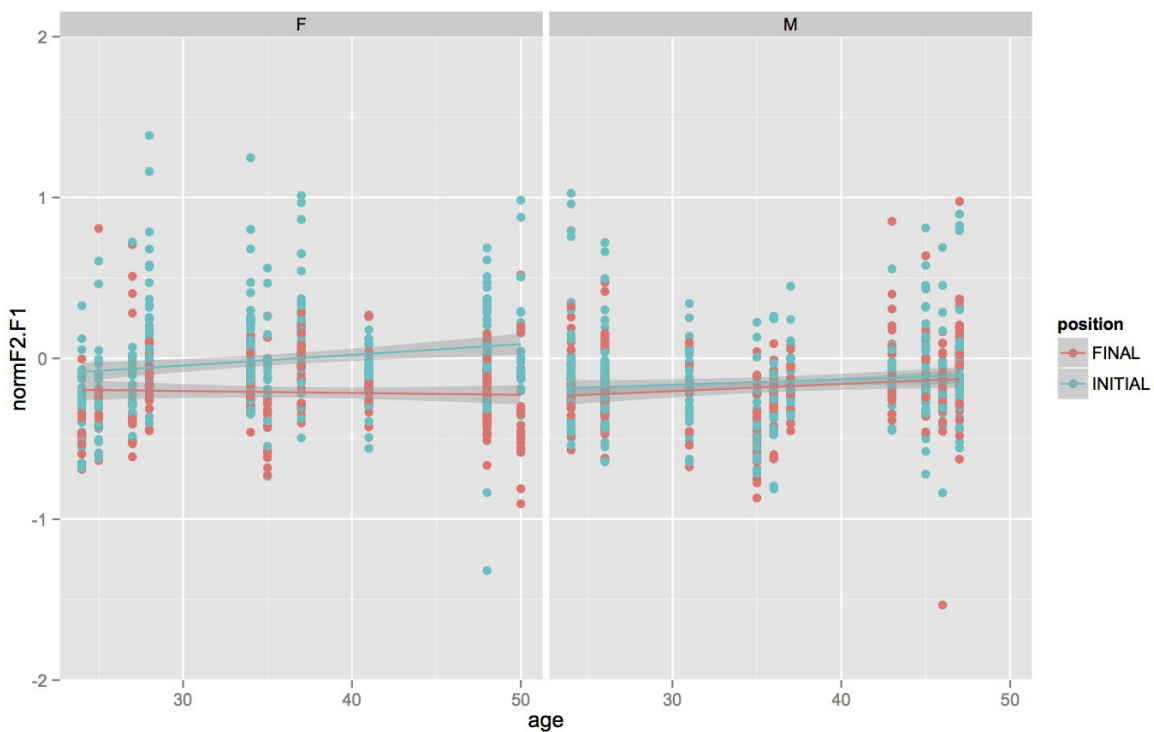
The fact that there is a difference between the results of the complete and the reduced data sets further justifies the need to examine the social factors of the reduced set. The tokens with adjacent consonants and phrase boundaries do, in fact, skew the data and show different patterns than the intervocalic tokens.

3.2.2: Word List

The word list yields 1218 tokens in total, including 619 final /l/s and 599 initial /l/s. There are 610 from the female participants and 608 from the males; 660 from the university educated speakers and 558 from the non-university educated. The three age groups have 407, 458, and 353 tokens from the youngest group to the oldest.

The word list data, like the interview data above, also shows a distinct difference in darkness between final and initial tokens: final /l/s being significantly darker than initial ones ($p<2.2e-16$). This result is shown in the box plot in Figure 14.

Figure 14: word list, all participants
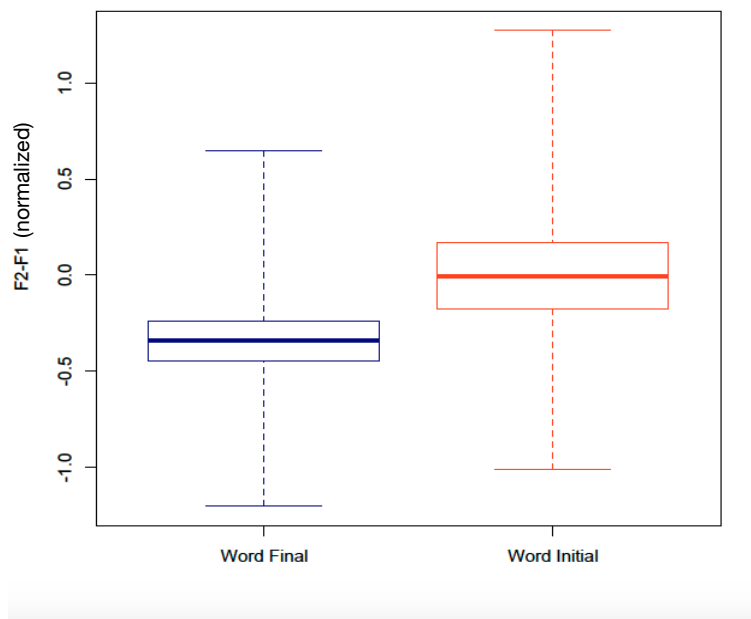
In fact, participants show a greater distinction in this task than they do in the interview. As can be expected, individual differences exist in this data set, however, every participant (except for one) has significantly different final and initial /l/s in the word list. This means that even the participants that do not have a distinction between /l/ positions in the interview do have a

distinction in the word list task. Figure 15 displays an example of the difference between the two

tasks for participant 24. T-tests comparing the final and initial positions of this participant found

a significant difference in the wordlist (p=7.342e-09) but not in the interview (p=0.8345).

Figure 15: interview vs. word list, participant 24

Table 11 gives the results of t-tests between final and initial position, for each participant,

in the interview and word list. A significant p-value is presented in bold, which means that final

and initial positions for that speaker are significantly different from each other. It can be seen that
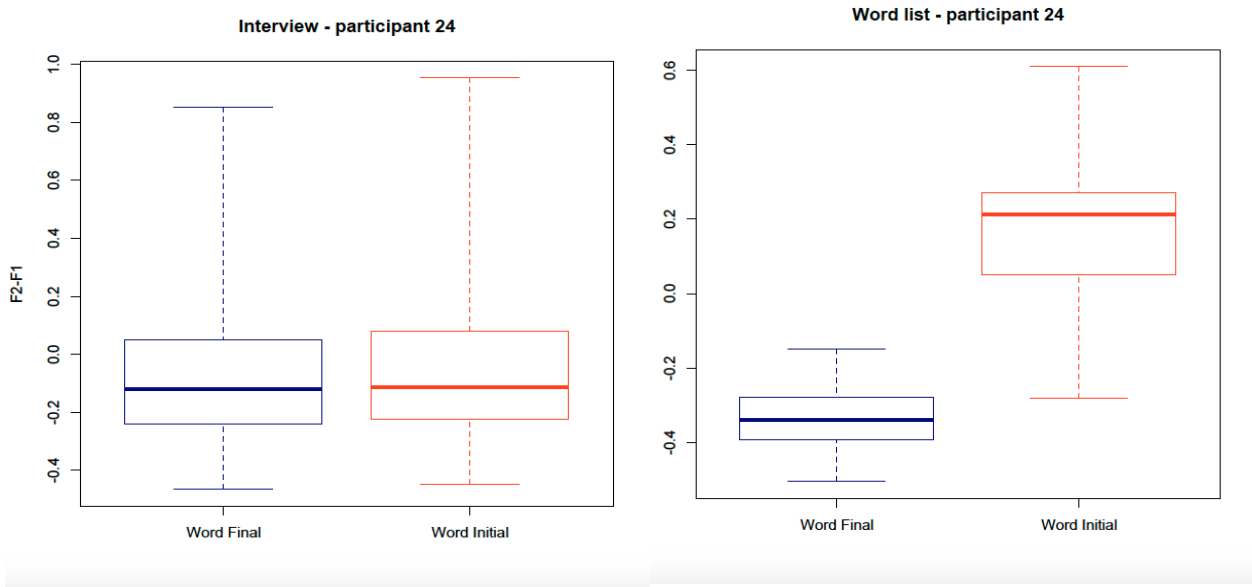
almost every word list value is bolded, while this is not the case for the interview values.

Table 11: interview and word list results by participant, final vs initial position

Particpant #	Interview			Word List		
	Mean F2-F1: Initial	Mean F2-F1: Final	P-value	Mean F2-F1: Initial	Mean F2-F1: Final	P-value
1	-0.1902500	-0.2904933	**0.01578**	-0.1082400	-0.4696538	**3.903e-10**
2	-0.1419889	-0.2308485	**0.0284**	-0.1466400	-0.4008846	**2.665e-07**
3	-0.1591053	-0.2651970	**0.02305**	-0.2440000	-0.4599615	**0.006391**
4	-0.2621094	-0.2219383	0.2517	0.0525200	-0.3457692	**3.48e-11**
5	-0.2508765	-0.2881467	0.3517	-0.1512800	-0.3731923	**1.618e-06**
6	-0.1882545	-0.3098077	**0.03341**	-0.2056800	-0.3691538	**0.0347**
7	-0.2135000	-0.2305469	0.6466	-0.0537600	-0.5456923	**5.188e-16**
8	-0.0680	-0.1615	**0.007429**	0.0319600	-0.1895769	**4.747e-07**
9	0.03276364	-0.27459574	**9.503e-08**	0.15092	-0.35020	**1.088e-07**
10	-0.09863953	-0.20145455	**0.01429**	-0.34328	-0.00832	**4.475e-07**
11	-0.05953125	-0.15611429	0.1523	0.07256	-0.40468	**6.652e-07**
12	0.09080822	-0.03217391	**0.008052**	-0.0142400	-0.1831538	**0.04554**
13	0.14651316	-0.03810638	**7.498e-05**	0.2376000	-0.2884615	**1.522e-09**
14	-0.06483529	-0.15168354	**0.004018**	-0.0519200	-0.2633462	**1.159e-05**
15	-0.1179559	-0.2769200	**0.003086**	-0.1768000	-0.2796923	0.1591
16	-0.1176579	-0.2197857	**0.01002**	-0.0744000	-0.3321538	**4.631e-05**
17	-0.124082	-0.106240	0.6366	0.0571200	-0.2715385	**1.59e-08**
18	0.02355714	-0.04137931	0.1864	-0.0274400	-0.2783077	**0.0001117**
19	0.1612258	-0.0646250	**7.033e-06**	0.3644400	-0.2281538	**8.378e-11**
20	-0.3770500	-0.4270875	0.1793	-0.1582000	-0.4792692	**4.222e-06**
21	0.1710448	-0.2119157	**3.055e-13**	0.2432800	-0.2752692	**2.931e-07**
22	-0.1059733	-0.1377286	0.5191	0.0624400	-0.3789167	**3.942e-08**
23	-0.1182333	-0.0555750	0.2626	0.1043600	-0.2517308	**0.0002771**
24	-0.05800000	-0.06870886	0.8345	0.199875	-0.338500	**3.316e-12**

In regard to social factors, age is the only one to predict the darkness of an /l/ token in the word list. The older the participant, the lighter the /l/ token. Age also interacts with position,

which, in this case, means that initial /l/s increase in lightness as age increases, more so than final /l/s do, as Figure 16 shows. The figure is also divided by gender to show that there is no significant difference between males and females, unlike in the interview data.

Figure 16: word list, age effect divided by gender
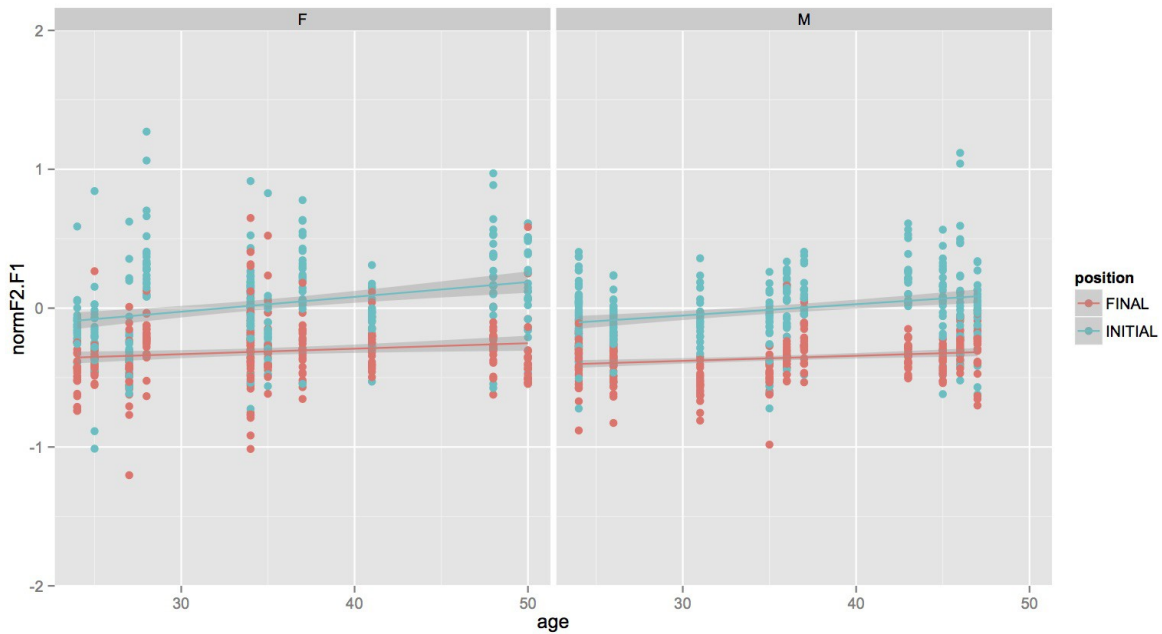
This result was determined by comparing the model: lmer(normF2.F1 ~ position*age + (1| participant) + (1|word)), to the model without the interaction: lmer(normF2.F1 ~ position + (1| participant) + (1|word)). Using an ANOVA, the interaction was found to be significant to the model. Gender and education, on the other hand, do not play a role in the darkness of /l/s in the word list task. Table 12 shows the results from the model, with significant values in bold.

Table 12: word list, social factors

Fixed Effects	Estimate	Std Error	t value
(Intercept)	-0.460200	0.091813	-5.012
Initial position	0.143935	0.057698	**2.495**
Age	0.003761	0.002438	**1.543**
Male	-0.046896	0.038409	-1.221
Non-university	0.038818	0.038544	1.007
Initial position:age	0.005668	0.001479	**3.833**

Additionally, linguistic factors (other than position) do not appear to have an effect on /l/s in this task. The effects of preceding and following vowels were tested, and neither predicts /l/ darkness. Of course, the nature of the environments of these /l/s should be considered, since each of the words was produced in isolation and not in connected speech, either preceded or followed by a pause (word boundary). This means that the effects of following vowels can only be tested in initial tokens, while preceding vowel influence can only be applied to final tokens. For this reason, interactions between vowel contexts and /l/ position were not tested. Table 13 shows the effects of following vowel on initial /l/s, which is not significant at p=0.8206, and Table 14 shows the effect of preceding vowel on final /l/s, which is also not significant at p= 0.4733. It should be noted that Table 13 contains only a comparison between /l/s with following front and back vowels because there are no words in the list that have /l/s with following reduced vowels. The values in the tables were determined by using ANOVAs comparing the models with preceding and following vowels (model: lmer(normF2.F1 ~ followingvowel + (1|participant) + (1|word)); model: lmer(normF2.F1 ~ preceding vowel + (1|participant) + (1|word))) to that without them (model: lmer(normF2.F1 ~ 1 + (1|participant) + (1|word))).

Table 13: word list, effect of following vowel on initial /l/

Fixed Effects	Estimate	Std Error	t value
(Intercept)	0.011586	0.042190	0.275
Following vowel back	-0.009386	0.042089	-0.223

Table 14: word list, effect of preceding vowel on final /l/

Fixed Effects	Estimate	Std Error	t value
(Intercept)	-0.33464	0.14339	-3.319
Preceding vowel back	-0.01079	0.03387	-0.318
Preceding vowel reduced	0.05971	0.05833	1.024

Chapter 4: Discussion

This chapter contains a discussion of the previously presented results. Here, some possible interpretations of the results of these experiments are outlined and placed in the context of the existing literature on the topic. The pattern of /l/ allophony in this speech community is also presented in consideration of the rest of the province and NLE, as well as Standard Canadian English as a whole. Additionally, the results of the production and perception experiments are discussed in relation to each other, since the overall darkening of /l/ and its perceptual salience are most likely linked. Furthermore, some limitations of the findings are presented here.

4.1: Perception

The results from the perception experiment suggest that the participants are not only able to hear the difference between dark and light /l/, but that they also identify the light variant as a feature of Newfoundland English. Also, the participants consider the dark post-vocalic /l/ to be more prestigious than the light post-vocalic /l/. This result is not entirely unexpected because it is in keeping with Clarke (1982), who reports that non-standard dialects of NLE were ranked lower in social status than a Standard Canadian and a RP variety. In that study, however, the non-standard NLE dialects were, in turn, ranked higher in social attractiveness than the standard dialects, which is not the case here.

The lower status ranking and the neutral attractiveness ranking of post-vocalic light /l/ suggest that there is a lack of pride or prestige in this feature. As Van Herk (2011) reports, the non-standard features of NLE that thrive tend to be the ones that evoke loyalty or solidarity, which does not appear to be the case for post-vocalic light /l/. As mentioned above, features such as TH-stopping or verbal -S marking are still prevalent in NLE today and continue to be used by younger populations, often as markers of a Newfoundland identity (Van Herk 2011). The use of

45

post-vocalic light /l/ in the comedic impersonations described in an earlier section, however, do not necessarily display local pride. The characters in the songs and sketches often portray a negative stereotype in some way: being of low socioeconomic status and taking part in activities such as drinking, smoking, and gambling. Thus, the stigma of light post-vocalic /l/ is used to evoke a Newfoundland identity, but not necessarily a positive one.

As is shown in the results section, none of the social factors considered in this study have a significant impact on how participants rank the different /l/ variants. There is no group that feels stronger about the status or attractiveness of the variants than the others. If the age groups in this study are considered as different stages of the language in apparent time, the fact that age is not a significant factor in the ranking suggests that the social evaluation of the variants has remained stable over a number of decades.

4.2: Production

According to the results reported in this study, the dark post-vocalic /l/ is a well-established and stable norm in SJE. Aside from individual variation, the participants follow the standard Canadian pattern of /l/ production, in which initial /l/s are lighter than final ones. Based on the results of the reduced data from the interview, it is initial /l/ that is more socially stratified when it comes to age and gender, while final /l/ darkness stays relatively stable.

The linguistic factors of preceding and following vowel do not have much of an impact on the darkness of /l/s, whether they are final or initial. This is contrary to other studies that do find significant effects of surrounding vowels (Dalston 1975; Recasens & Espinosa 2005), possibly due to the fact that only final and initial, and not word-medial, positions are considered here. Another possible explanation is that this lack of vowel effect could be linked to the darkening of /l/s overall. According to Recasens (2004), because of the articulatory complexity of dark /l/, it

is resistant to coarticulation with adjacent vowels. If /l/s in SJE are becoming darker, then perhaps they are also becoming less susceptible to the effects of surrounding vowels. An examination of /l/s in different morphological positions is needed to further interpret this finding.

Age, as Figure 12 shows, is a significant factor in /l/ production in the interviews since older participants have lighter /l/s than younger participants overall (while each age group maintains a distinction between initial and final /l/s, with finals being darker than initials). Again, this variation applies more dramatically in initial position, with final /l/s remaining relatively stable. This results in the initial and final /l/s of the younger participants being more similar to each other. If this pattern is considered a change in apparent time, it appears that initial /l/s are becoming darker. Thirty years ago, the SSSJE reported that the norm in terms of post-vocalic /l/ had shifted from light to dark, most likely after Newfoundland had joined Canada (in 1949) (Clarke 2012). Clarke reports that in that study, younger speakers were using the standard Canadian/English pattern for /l/, but only post-vocalic /l/s were taken into account. In this current study, whose participants are from the generations that came of age after the SSSJE, the norm for post-vocalic /l/ remains dark. Thus, to answer the original question of this research: yes, according to the results displayed here, the post-vocalic light /l/ has continued its decline, and the dark norm remains. Has /l/ stabilized entirely into the expected standard Canadian norm? No. As is shown above, most of the social variation that exists in this data is seen in /l/s in initial position. This pattern is not consistent with Clarke's (2012) finding that younger speakers are becoming more standard in their /l/ productions. Younger speakers' /l/s are, in fact, becoming more similar to each other, contrary to the expected standard of having clearly distinct initial and final /l/s in terms of darkness. Thus, the dark /l/ appears to carry prestige in both positions in SJE.

As shown above in the interview results, women have a more standard /l/ allophony pattern than men, in that their final and initial /l/s are more distinct from each other. Women have lighter

initial /l/s, while men's initial /l/s are similar in darkness to their final /l/s. When taken together with age, shown in Figure 13, women's initial /l/s have a more dramatic darkening pattern in apparent time than men's initial /l/s. Both genders over time have relatively stable dark final /l/s. This change over time displayed by the women in this study could indicate that women are aiming for the male /l/ pattern of having darker /l/s across positions. As shown above, there is prestige associated with having darker /l/s overall in SJE. The typical sociolinguistic pattern of women leading sound change (Labov 2001), therefore, does not apply in this study. It appears that men are ahead of women in this darkening pattern, and that women are now catching up.

Although the variation of initial /l/ does not fit exactly with the expected Canadian norm, there is not enough evidence to say that the /l/ pattern in SJE is moving away from the Canadian or English pattern. This is because there has not been recent research done in Canada to investigate a darkening of /l/ overall (that I know of), so it is not possible to confirm at this time whether SJE is conforming to a larger change or if the change is local. Also, it is not clear at this time if other parts of Newfoundland are experiencing this type of variation. Again, more research is needed to determine where the /l/ pattern in SJE fits in with the rest of the province and the country. Furthermore, the initial /l/ results are not possible to compare with the SSSJE, which only reports on the darkness of post-vocalic /l/. Thus, this is a new finding on /l/ variation in this community.

Unlike in the interview, the only factor to play a role in the variation of /l/ in word list productions is age. This again shows that older participants use lighter /l/s than younger participants overall, and especially so in word-initial position. This coincides with the interview result of younger speakers having more similar word-initial and -final /l/s than their older counterparts.

As the evidence above suggests, dark post-vocalic /l/ is the prestige norm and in the more formal word list task, all participants aim for this norm. All participants are aware to some extent that having dark final /l/s is the "correct" way to speak in this context. This adheres to the Labovian principle (Labov 1966; Labov 1972; Labov 2001) that speakers are more standard the more formal the task, or the more attention they are paying to their own speech (which is said to be the case in a word list task). According to Labov (1966; 1972; 2001), the standard in this case is seen as the more "correct" way of speaking, and should thus be spoken in more formal settings. Non-standard speech is seen as more acceptable in an interview setting where, ideally, speakers are more comfortable and less self-conscious about the way they talk. Although the standard /l/ pattern exists in this group as a whole, the shift in styles between tasks further suggests that having a distinction between initial and final /l/ positions remains the prestige norm in SJE.

Interestingly, the difference in styles does not match the results of the SSSJE. Clarke (2012) reports that /l/ did not undergo a stylistic shift between the interview and the word list in that study. This fact, as discussed above, was the reason for Clarke's claim that the decrease in use of post-vocalic light /l/ was going unnoticed. Based on the findings from both elements of this study, however, awareness of this feature does exist. The discrepancy between Clarke's findings and those of this study are most likely a result of methodological differences. Since this study used acoustic measurements, it is possible to take subtler differences in /l/ darkness into account that might not be heard in an impressionistic analysis. Also, Clarke (2012) only reports on the darkness of post-vocalic /l/s in the SSSJE, while in this study it is initial /l/s that display the most dramatic effects of style shift. Whatever the case, Clarke's (2012) reasoning for deeming the light post-vocalic /l/ as not salient does not apply in this study.

4.3: General Discussion

The darkening of /l/s, shown in the production experiment, and the stigma associated with light post-vocalic /l/, in the perception experiment, are likely linked. As mentioned above, both the speaker and the listener play a role in sound change (Ohala 1981; Drager 2011), since the stigma or prestige associated with a particular sound is often the driving force behind a change. If there is an aversion to light /l/ in one position, then it could extend to /l/s in other positions. Again, further investigation of word-medial /l/s in this community would shed light on this analysis.

As shown above, the social factors of the participants play a role in /l/ production, but not in /l/ perception. This result can be explained by the fact that, in general, people's perceptions are much more flexible than their productions. That is, people have to accommodate to different kinds of speakers with different varieties of English, and this allows them to accept variants of sounds that they do not use in their own speech. Research in this area has shown that humans have the ability to rapidly adjust to variation in the speech signal. This means that speakers can interpret a wide range of productions, even if they do not match their own (Maye, Aslin & Tanenhaus 2008; Bradlow & Bent 2008; van der Zande, Jesse & Cutler 2014).

In the case of this research, the participants all ranked the /l/ variants equally, even though they themselves vary in their /l/ productions. This means that they, despite their productions, have been exposed to the light post-vocalic /l/ and have formed an association with that way of speaking, be it negative in terms of social status, or neutral for social attractiveness. The fact that this association has not changed over time suggests that the light variant still exists to some extent in the speech community, even though the dark norm has persisted. One would presume that if the feature had disappeared, then younger speakers would not associate it with St. John's and would not likely attribute any particular local meaning to it.

One social factor that is consistent across experiments and tasks is the indicator of SES, the level of education of the participants. This factor does not play a significant role in any portion of this study. These results do not provide enough evidence to conclude that SES does not have an effect on /l/ in SJE, since a simplified SES index is used here. More research is required to determine the role of SES, and what elements are important in comprising such an index, since education alone does not predict the evaluation or darkness of /l/s for speakers of SJE.

Chapter 5: Conclusion

This study shows that the dark post-vocalic /l/ remains the stable norm in SJE, while /l/s in initial position undergo significant variation. Some features of NLE have declined in the past and have seen a resurgence in more recent years (Clarke 2012; Van Herk 2011), but for light post-vocalic /l/, the decline seen in the early 1980s has continued and has leveled off. Based on the darkening found in initial /l/s, however, it is not the case that the /l/ allophony pattern in SJE is becoming more standard, as the SSSJE results suggest. Additionally, despite the results from the SSSJE that suggest low social awareness of light post-vocalic /l/, the findings of this perception experiment indicate that the feature is not only salient, but also that it carries stigma. Also contrary to the SSSJE, the participants of this study demonstrate a style shift in the darkness of their /l/ productions, which further supports the claim that awareness of this feature exists among the participants.

There are many ways in which the scope of this research could be expanded. First of all, this study only looks at /l/s in final and initial positions, when there is likely a great deal of variation in the different categories of word-medial /l/s. These positions should be examined as well, in order to determine if those /l/s are becoming darker, and to complete the picture of /l/ allophony in this dialect.

Additionally, in order to clarify the context of the apparent darkening of initial /l/ in SJE, future research could investigate whether /l/s are changing in other parts of the province (both those with light and those with dark post-vocalic /l/s) (such as Mackenzie, De Decker & Pierson 2015), and also in Standard Canadian English. As we have seen, NLE is distinct from the rest of Canada in many ways: not just in the language varieties of our settlers, but also in contemporary language change. This sort of investigation could further contribute to the research on whether

NLE is moving towards one homogenous variety of English, or whether it is maintaining and creating distinct characteristics.

In terms of other local features of SJE, there are many that do not get as much attention as TH-stopping and verbal -S marking in terms of language change and stability. The SSSJE examined 25 different features (Clarke 2012), all impressionistically. Since more than thirty years have past since that very thorough investigation, the technology of sociolinguistic research has changed dramatically. Every one of the features of that study could be re-examined in present-day St. John's, using acoustic (or many other kinds of) analysis, in order to update the knowledge and information available about this dialect. The perception and evaluation of any of these features could also be examined, not to mention any other new feature of the dialect that was not included or has developed in the past thirty years.

In sum, this research shows that the current state of post-vocalic /l/ in SJE is relatively stable, while the pre-vocalic /l/ is not. Also, salience and stigma exist when it comes to post-vocalic light /l/, which could be the driving force behind the general darkening of /l/ in this dialect.

Appendix A

Participant demographics			
Participant	**Age**	**Gender**	**Education**
1	24	F	A (university)
2	26	M	A
3	27	F	A
4	36	M	A
5	26	M	A
6	25	F	B (non-university)
7	31	M	A
8	34	F	A
9	50	F	A
10	24	M	B
11	48	F	B
12	34	F	A
13	37	F	B
14	41	F	A
15	35	F	B
16	24	M	B
17	37	M	B
18	47	M	B
19	28	F	B
20	35	M	B
21	48	F	B
22	45	M	B
23	46	M	A
24	43	M	A

Appendix B

Word list

Lustrous	Haul	Phone
Without	Loss	Howl
Orange	Pill	Button
Foghorn	Bury	Accounting
Mull	Bathroom	Something
Lack	Back	Load
Leak	Pull	Charcoal
Fell	Dune-buggy	Barstool
Bellyful	Pam	Idea
Lousy	Annul	Litre
Scale	Coffee	Zipper
Fuzzy	Laboratory	Petal
Mouth	Dream	Goal
Molehill	Dare	Fishcakes
Boil	Sauce	Cigar
Handball	Ghoul	Government
Edging	Prefer	Heel
Look	Parasol	Loiter
John	Stocking	Weather
Impale	Creation	Eighty
Keyboard	Looker	Lint
Bottle	Logan	Let
Beer	Habit	Dancing
Parallel	Moon	Stupid
Laundry	Limber	Gal
Tomatoes	Line	Withdrawal
Ears	Lug	Bothered
Loin	Unpeel	Lakers
Faith	Guarded	Nothing
Book	New	Late
Loot	Legendary	Loud
Ludicrous	Fetching	Mile
Exercise	Evening	Ghosts
Eating		

Reading passage

My friend Bill has a lot of strange relatives. Yesterday, Bill's cousin Faith went into the new hospital to see the doctor. For more than three months, she says, she'd been having a pain over her right eye. Paul, her youngest boy, who is still a student, could drive her in because he had a day off school. Her daughter-in-law, Edith from Carbonear, went along for the ride.

When she got there, she went right over past the elevators to check the cafeteria. "Tis not like the old General" she said to Edith. "You know, I've always loved the big posts they've got holding that place up, big enough to be able to hide behind. But the food here is not bad. I think I'll buy myself a lovely meal with dessert before it's time for my appointment. And I'll pick up a knife, fork and spoon for my silverware collection."

After eating her lunch, Faith told Edith, "That was good, but I can't eat my roll. I'll just take that home. It would have been better if the tea was hot, but that's more than I'd get over to the house."

Pat, Bill's brother, was telling me last night about how Faith's husband, Harry, is just as odd as his wife. He stands every night at the bottom of the lane looking at timber he cut five years ago to build a boat. He won't say why but after spending nearly six months cutting it, he then decided to let the wood rot. Faith wouldn't get him his morning cup of coffee for thirteen days because she said their garden looked like a dump. On the thirteenth day, he said "If there's no coffee on the table by 8 o'clock, I'll throw all our cups out through the window." One of the cups got Edith on the forehead, and that's when she started complaining about the pain over her eye.

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