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## Phonetic Portfolio (Walden)

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## PHONETIC PORTFOLIO

MELISSA WALDEN

### Biography

I was born on September 9<sup>th</sup> 1987, in Yellowknife Northwest Territories, therefore I am 24 years old, and Canadian. When I was two years old my family moved to a small town called Deep River in Ontario Canada, where I have spent most of my life. Deep River is located very close to the Ontario Quebec border. Deep River is part of an area called the Ottawa Valley. English speakers in the Ottawa Valley can exhibit somewhat of a unique accent.

English is my native language, but I have been a French as a second language learner my whole life. French as a second language classes are mandatory in Ontario schools from kindergarten up until the ninth grade. I always loved French classes and eighth grade I spent six weeks studying abroad in La Rochelle France, where I attended school and lived with a French family. I continued to take French classes all the way through high school. Well growing up I traveled around Canada (but mainly Ontario and Quebec) often. Some of our travels included trips to visit family in southern Ontario, family vacations to ski in Quebec or out to Eastern Canada, and traveling to ski races, and track meets all around the country.

For the past five years I have been working on my undergraduate degree at Saint Cloud State University in Minnesota. I will graduate this spring with a double major in French and Linguistics, and a minor in Teaching English as a Second Language. As a junior I studied abroad for a semester in Montpellier France. While abroad I was a member of a track club, and became friends with many French people. As a result of these friendships I spoke almost exclusively French while abroad. I have observed some distinct differences in the English dialect spoken in the Ottawa Valley, where I grew up, and that of a Minnesotan. Many of the differences I have observed are lexical. For example, my peers always seemed to notice when I said 'eh'. As a result of their comments, I became subconsciously aware of my speech, and almost completely stopped saying 'eh'. Coming home for Christmas for the first time my freshman year, I was shocked at how noticeable the Canadian 'eh' is, and was surprised that I never previously noticed the stereotypical word. Americans often say 'huh' where a Canadian would use the word 'eh'. Another change observed in my speech since coming to Minnesota is the lengthening of my vowels. I was completely unaware that I had changed the way I said any specific word. However, every once and a while, my mother would comment on the way I said words like 'school', with a 'drowned out' vowel.

Based on my experiences and the length of time I have been in Minnesota, myself and others have observed lexical variations, and lexical changes in my dialect of English. The phonetic variation amongst Canadian and American dialects is less obvious but still existent. Through both my phonology class and my senior project (a four way comparison of acoustic analysis of the vowel sounds of general American English, general Canadian English, my speech, and the speech of a female native English speaker from the Ottawa Valley), I have realized that speakers from different geographical locations, or with different backgrounds, have vowel sounds with unique characteristics.

## 1.0 Introduction

My phonetic portfolio contains three important aspects of phonetic projects that I did for my introduction to phonetic/phonology course, English 473. First, I wrote a short a story that I transcribed phonetically according to the IPA standards. The transcription method that I used can be described as an allophonic method because it represents the various ways I pronounce the same basic phoneme and/or the basic morpheme depending on the environments in which it occurs. The second part of my portfolio compares and contrasts my own vowels with those of General American English (GAE). The data from GAE is taken from Peterson and Barney 1952. For the third and final part of my analysis, I produced the word “wounds” and measured the acoustic correlate pitch, duration, and sonority. All recordings were done in a quiet study room at the Saint Cloud State University library. Recordings were done using a WS-400 Digital Voice Recorder. Recordings were then transferred onto a Saint Cloud State University PC Computer.

## 2.0 IPA Transcription

[ə stóri əbáwt maɪ rən tədə<sup>h</sup>]

*A Story About My Run Today*

[tədə<sup>h</sup> aɪ wɛnt fɔr ə rən ɪn séɪnt kláwd mɪnsɔ̀rə.

*Today I went for a run in Saint Cloud Minnesota.*

wɛn aɪ ópənd maɪ dɔr tu go áwtsájd aɪ sərprájzd tu dlɪskəvə<sup>h</sup> ɪt wəz wɔrm àwt

*When I opened my door to go outside I was surprised to discover it was warm out.*

fɜrst aɪ ræn pæst ðə séɪnt kláwd stét jùnivə̀səri kæmpas ənd ðɛn aɪ krást ðə mɪsəsɪ rɪvə̀

*First, I ran past the Saint Cloud State University campus, and then I crossed the Mississippi river*

ənd ðə brɪdʒ

*on the bridge.*

nɛkst aɪ ræn pæst a park ənd tænd dāwn ənəðə strɪt.

*Next, I ran past a park and turned down another street*

wɛn aɪ kém tu ə set əv ski trélz aɪ dəsajdəd tu rən ənd ðɛm.

*When I came to set of ski trials I decided run on them.*

ðə trɪz ənd ðə trélz lukt bjurəfʊl bɪkəz əv ðə snó ənd ðe braɪt sənʃájɪn

*The trees on the trails looked beautiful because of the snow and the bright sunshine.*

ðə gráwnd wəz ə lítəl slÍpəri bikΛz Λv ðə snó bət ai díld nát fúl

*The ground was a little slippery because of the snow but I did not fall.*

ætə rənɪŋ ãn ðə ski trélz fór ə fju mɪnəts ai sa fór dír

*After running on the ski trails for a few minutes I saw four deer.*

ai stópt ænd trájd tu bi sájlənt so ai cʊd lʊk æt ðə dír

*I stopped and tried to be silent so I could look at the deer.*

tu Λv ðə dír əpɪrd tu bi adəlt fimelz ænd ðə əðə tu simd véri jəŋ

*Two of the deer appeared to be adult females and the other two seemed very young.*

ɔl fór Λv ðə dír stʊd stɪl fór ə fju mɪnəts

*All of the deer stood still for a few minutes.*

wɛn ə láwd kár drɒv dáwn ðə strɪt bəsájd ðə trɛlz ɪtz nɔjz apÍrd tu stárrəl ðə dír

*When a loud car drove down the street beside the trails its noise appeared to startle the deer*

ænd ðe ræn əwe

*and they ran away.*

h tədə wəz ðə fɪrst tájm ai hæv évə sɪn dír wájl rənɪŋ ɪn sént klawd ænd ɪt rɪmájnəd mi

*Today was the first time I have ever seen deer while running in Saint Cloud and it reminded me*

Λv hóm

*of home.*

ai ěm frəm ə smál tawn ænd hæv bɪn ə rənə fór móst Λv maɪ lájf

*I am from a small town and have been a runner for most of my life.*

ɪn maɪ hóm táwn ai hæv kəm akɾs dír ãn ə lət Λv maɪ rɛnz

*In my home town I have come across deer on a lot of runs.*

dír ar bjúərəfʊl énnəməlz ænd əlwéiz apɪr tu bi kam ænd grésfəl

*Deer are beautiful animals and always appear to be calm and graceful.*

æftə rəniŋ əráwnd ðə skí trélz aɪ ɡət bæk ʌn ðə ród ənd ræn bæk tu maɪ apárʔmənt wɪθ

*After running around the ski trails I got back on the road and ran back to my apartment with a big smájl ʌn maɪ féc*

*big smile on my face.*

aɪ kəd nat help bət θɪŋk əbáwt haw læki wi ar tu lɪv ɪn ə pléc wɪθ sətʃ ɪnnərəstɪŋ wájdɪlɪf

*I could not help but think about how lucky we are to live in a place with such interesting wildlife*

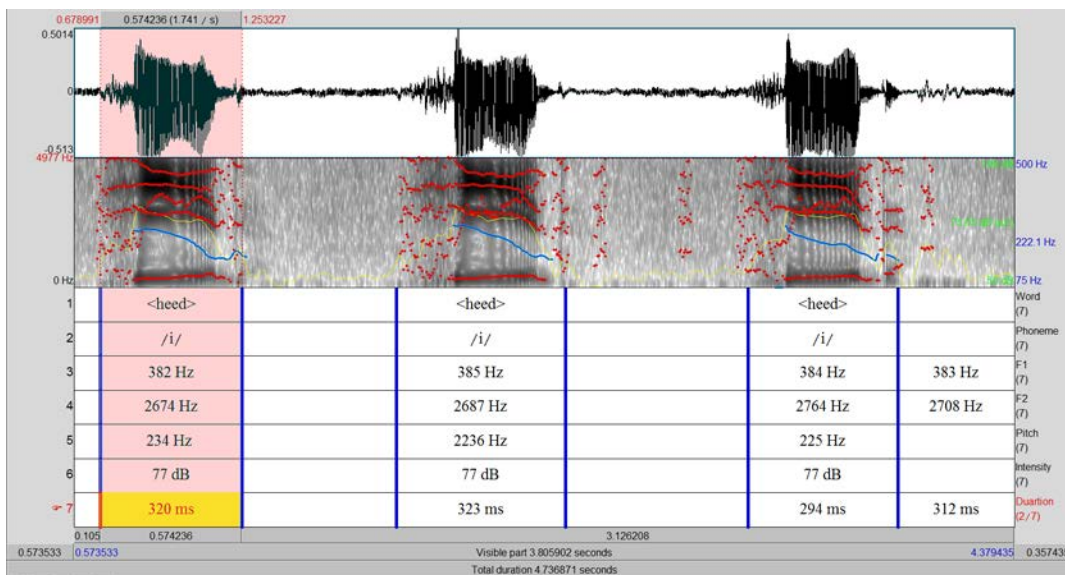
em véri grétfəl rəniŋ hæz ɡɪvən mi ðə tʃəns tu ɛndʒɔɪ mətʃ ʌv ɪt

*and I am very grateful running has given me the chance to enjoy much of it.*

### 3.0 Vowel Project

The acoustic analysis of each of my vowel sounds was done using PRATT. All recordings were done in a quiet study room at the Saint Cloud State University library. Recordings were done using a WS-400 Digital Voice Recorder. Recordings were then transferred onto a Saint Cloud State University PC Computer. Each word represented one of the eleven English phonemic vowel sounds. Every word was repeated three times. Every spectrogram represented one word. Based on the spectrogram, F1, F2, pitch, intensity, and duration measurements were determined. The focus of the project was each sounds F1 and F2 measurements. The F1 value of a vowel is indicative of the height (the higher the vowel the lower the F1 value). The F2 value of a vowel is indicative of the frontness (the more front the vowel the higher the F2 value).

An example of a spectrogram is shown below.



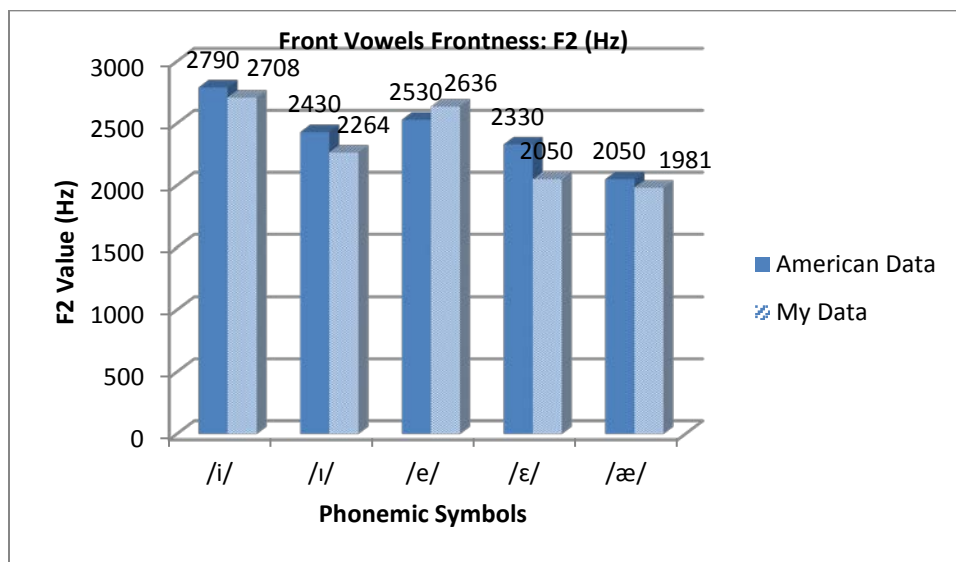
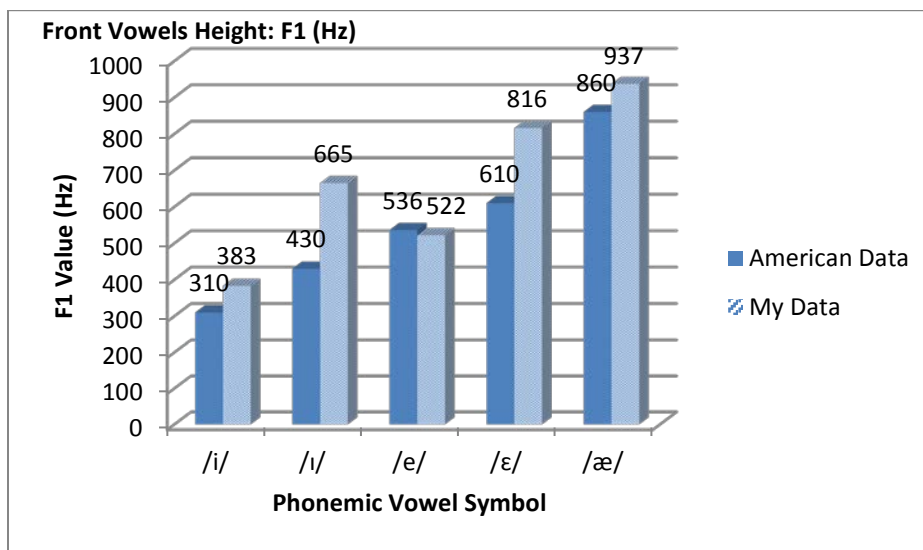
### 1. Raw F1 and F2 Figures for Vowel Sounds

(For my vowel data, used in this chart and graphs that follow see appendix A-K)

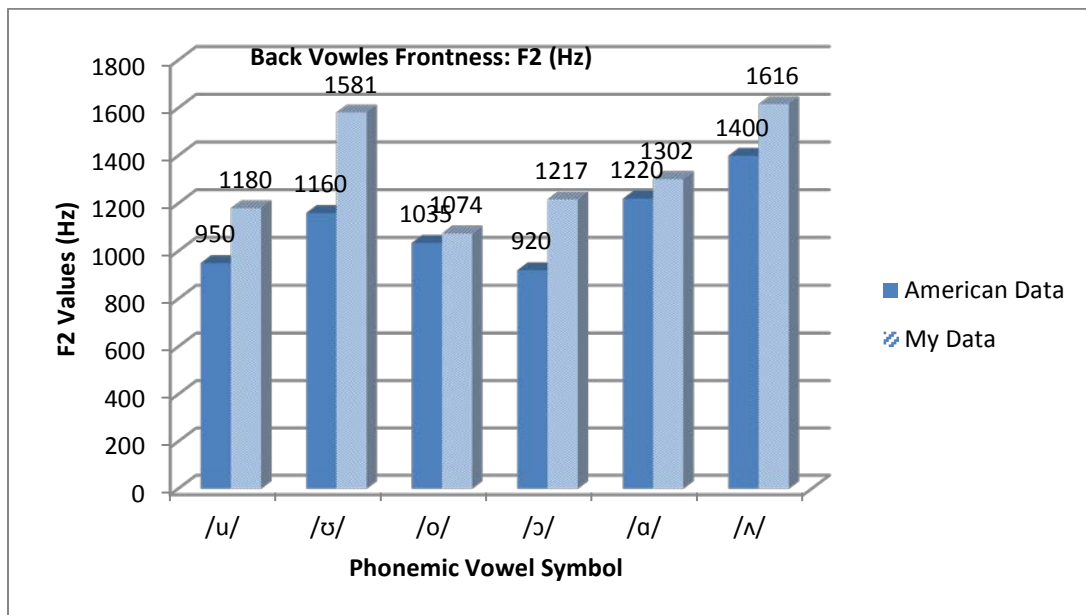
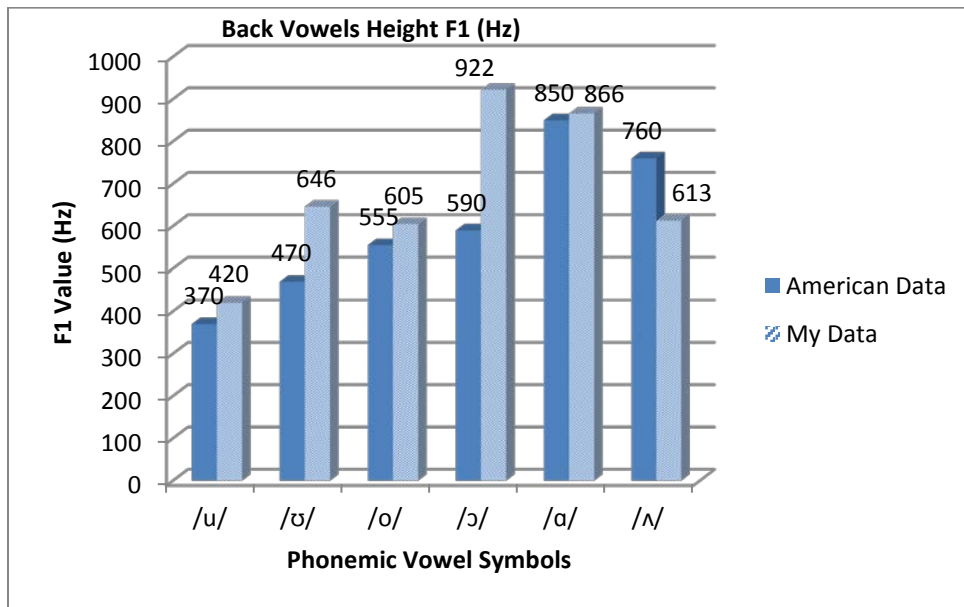
Speaker	Vowel	Context	F1 Value (hertz)	F2 Value (hertz)
Me	<heed>	<heed>	383	2708
U.S.A	<heed>	<heed>	310	2790
Me	<hid>	<hid>	665	2430
U.S.A	<hid>	<hid>	430	2264
Me	<hayed>	<hayed>	522	2636
U.S.A	<hayed>	<hayed>	536	2530
Me	<head>	<head>	816	2050
U.S.A	<head>	<head>	610	2330
Me	<had>	<had>	937	1981
U.S.A	<had>	<had>	860	2050
Me	<who'd>	<who'd>	420	1180
U.S.A	<who'd>	<who'd>	370	950
Me	<hood>	<hood>	646	1581
U.S.A	<hood>	<hood>	470	1160
Me	<hoed>	<hoed>	605	2530
U.S.A	<hoed>	<hoed>	555	1035
Me	<hawed>	<hawed>	922	1217
U.S.A	<hawed>	<hawed>	590	920
Me	<hod>	<hod>	866	1302
U.S.A	<hod>	<hod>	850	1220

Me	<hud>	<hud>	613	1616
U.S.A	<hud>	<hud>	760	1400

## 2. Comparison Graphs for Front Vowels

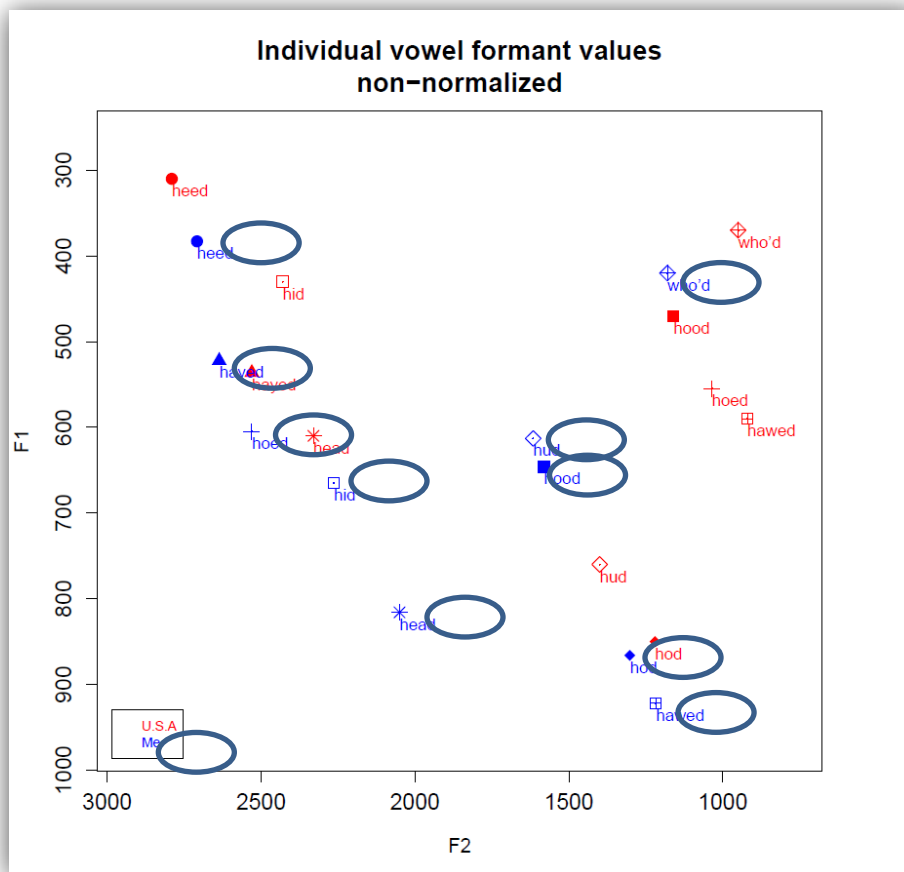


### 3. Comparison Graphs for Back Vowels





## Normalization



### 4.0 Comparison Between My Vowel Sounds and General American English

According to Hagiwara's 1965 study called *Vowel Production in Winnipeg* despite having very similar ranges in the auditory space, general American English vowel sounds tend to be slightly higher than vowels of general Canadian English speakers. With the exception of /e/, general American English front vowels have lower F1 values than my sounds. The lower F1 values for the vowels of general American English speaker's indicates that their vowel sounds are higher than my own.

My /e/ sound has a relatively similar height to the general American English /e/ sound. However, my /e/ sound is higher than my /i/ sound which is not the case in general American English. According to Hagiwara's study, the /e/ sound is in fact higher than the /i/ sound in general Canadian English. There is a significant difference between the heights of the /i/ sound in general American English (430 Hz) and the height of my /i/ sound (665 Hz). Also, there is a significant difference between the heights of the /ε/ sound in general American English (610 Hz), and my /ε/ sound (816 Hz). In Hagiwara's study the F1 value of /ε/ is 712 Hz, making the difference between my /ε/ sound and that of general Canadian English much less significant. The frontness of my front vowels compared with general American English is very similar in all

cases. For each vowel sound except /e/, the general American English vowel sound is slightly more front than my own. The finding that American English front vowels are more front than Canadians (with the exception of /e/) matches the results of Hagiwara's study.

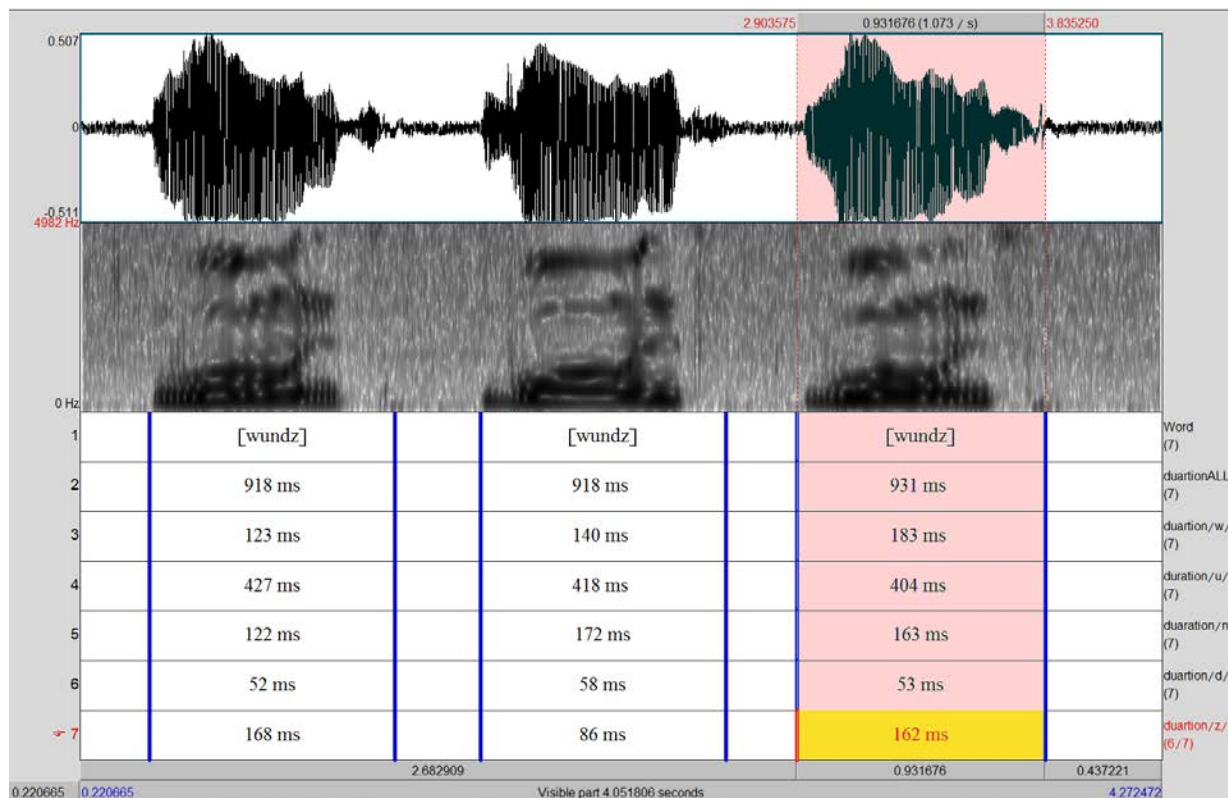
In all cases, with the exception of /ʌ/ the back vowel sounds of general American English speakers are higher than my own. The fact that my /ʌ/ sound has raised higher than the general American /ʌ/ can be explained by the Canadian Raising, a vowel shift that has occurred in Canada in the past century. The Canadian raising has affected multiple vowels including diphthongs /aɪ/, /aʊ/, and the vowel sound /ʌ/. Another notable variation between back vowel heights is my /ɔ/ (922 Hz), and the general American English /ɔ/ (922 Hz). According to Hagiwara's study, the general Canadian English /ɔ/ and /ɑ/ have merged mine; however, show a notable variation (/ɑ/ F1 value is 866 Hz, /ɔ/ F1 value is 922 Hz). Based on the 1983 article by I. Pringle, and E. Padlosky the /aw/ sound (phonetically represented as /ɔ/) is very unique from the rest of Canada. My pronunciation of /ɔ/ deviates significantly from the general American, and general Canadian pronunciation. All of the general American back vowels are slightly more front than my vowels. The most notable variation is /ʊ/ sound, the general American F2 value is 1160 Hz, and my F2 value is 1581 Hz. In Hagiwara's study the general Canadian F2 value of the /ʊ/ sound is 1580, therefore it is assumed that my /ʊ/ matches that of general Canadian English.

The portion of Hagiwara's results that have been compared to my vowel sounds were the vowel sounds of female speakers of similar age to myself. Also, all of Hagiwara's results were derived using the computer program PRATT, the same program my measurements came from. Although general American English vowel sounds seems to be slightly higher and more front than my own, from this project, it can be concluded that the two groups of speaker have similar sounds. All of the deviations between my vowel sounds and general American vowel sounds match Hagiwara's study of general Canadian sounds. The only exception to the above statement is how low my /ɔ/ sound is. It is assumed that the height of my /ɔ/ sound is a trait unique to the Ottawa Valley, my home.

## 5.0 Duration Pitch and Sonority Profile

The purpose of this project was to determine the duration, pitch and sonority profile of my pronunciation of <wounds>.

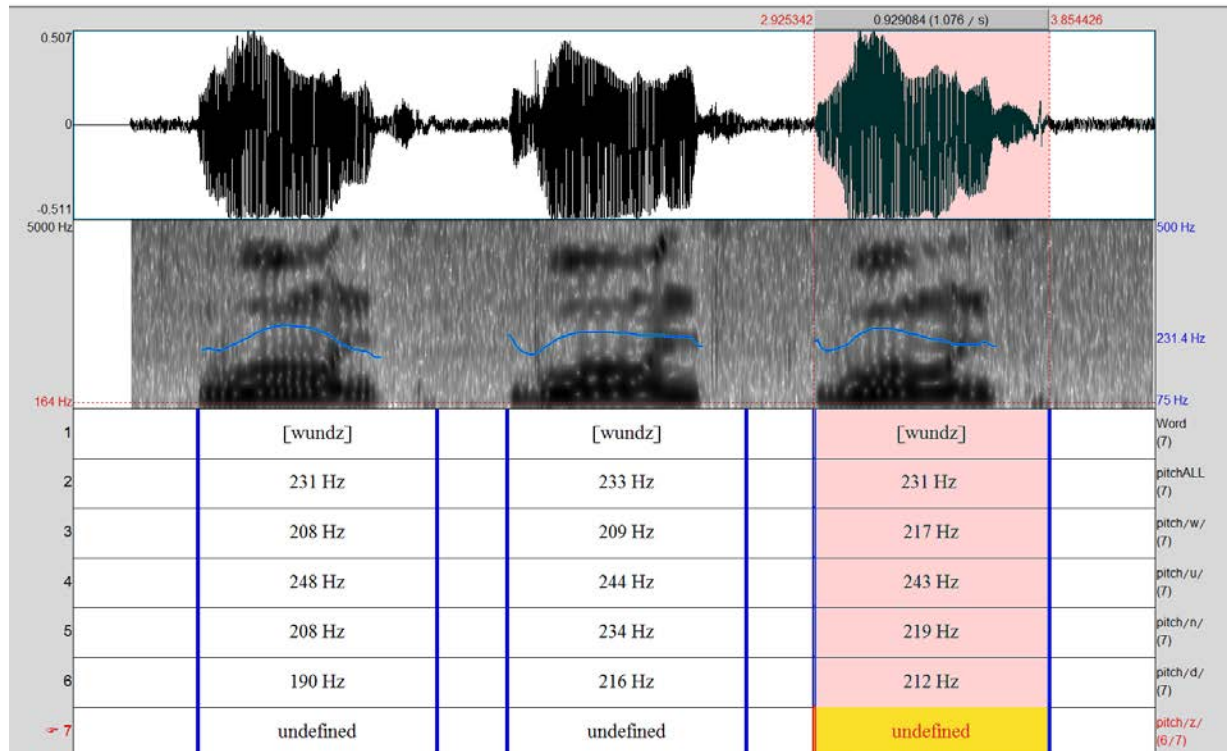
### 5.1 Duration



Mean duration of whole word [wundz]	922ms
Mean duration of /w/	148ms
Mean duration of /u/	416ms
Mean duration of /n/	152ms
Mean duration of /d/	54ms
Mean duration of /z/	138ms

The duration of the initial consonant /w/, a glide has a mean of 148ms, which is very similar to the mean duration of the nasalized consonant /n/, which has a mean duration of 152ms. As expected the vowel sound /u/ had the longest duration. Tensed vowels, such as /u/ are also known as long vowels because they typically last longer than short or lax vowels. The mean duration of the voiced stop /d/ is significantly shorter than all other phonemic sounds, 54ms. The mean duration of the last phonemic sound in the word /z/ is 138ms, and relatively close in length to the initial glide /w/ and nasalized consonant /n/. The longest duration is the vowel sound /u/ 416ms, and the shortest is the voiced stop /d/.

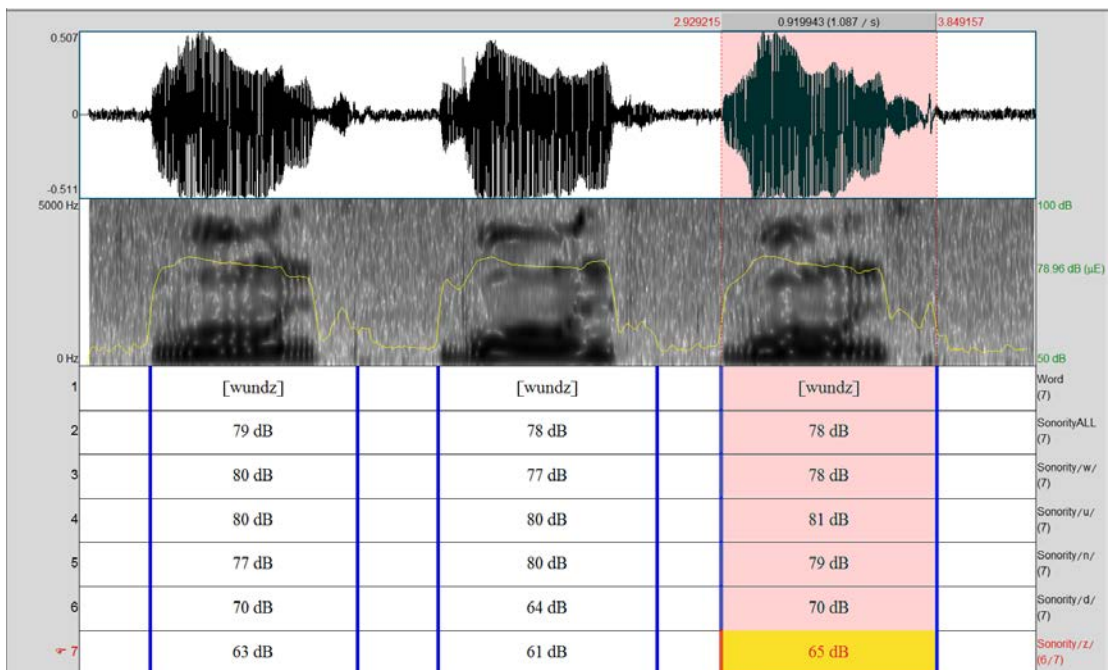
## 5.2 Pitch



Mean pitch of whole word [wundz]	231Hz
Mean pitch of /w/	216Hz
Mean pitch of /u/	245Hz
Mean pitch of /n/	152Hz
Mean pitch of /d/	206Hz
Mean pitch of /z/	Undefined

The mean pitch of the whole word is 231Hz which is typical for women, according to our workbook. The mean pitch of /w/ and /u/ are similar, 216Hz and 245Hz. The mean pitch of the nasalized consonant /n/ drops to 152Hz, and is 206Hz for the voiced stop /d/. The mean pitch of /z/ is undefined. The highest pitch is the tensed vowel /u/ and the lowest is the voiced fricative /z/, which is undefined.

### 5.3 Sonority



Mean sonority of whole word [wundz]	78dB
Mean sonority of /w/	78dB
Mean sonority of /u/	78dB
Mean sonority of /n/	79dB
Mean sonority of /d/	68dB
Mean sonority of /z/	63dB

The mean sonority of the whole word, 78dB is very similar to that of /w/ 78dB, that of /u/ 78db and of /n/ 79dB. The mean sonority of d is 68 dB and of /z/ is 63 dB. The highest sonority is the nasalized consonant /n/ and the lowest is the voiced fricative /z/.

### 6.0 Conclusion

I really enjoyed doing acoustic analysis, especially of my own speech because I learned so much. Since coming to the United States five years ago, I have noticed changes in my speech, however they have all been lexical. For example, I have pretty much completely stopped saying the stereotypical Canadian ‘eh’. Also, upon returning home, I continually get asked why I use the stereotypical Minnesotan phrase ‘you betch’ya’. As a result of these lexical changes I would have assumed that my speech has changed phonetically. However, as one can see from my results, my vowel sounds differ in multiple ways from general American English.

From listening to my fellow classmates present their vowel projects, I learned how much peoples speech can vary based on their acoustic measurements. It was interesting to learn how ones background can measurably affect their speech.

### Works Cited

- Hagiwara, Robert E. "Vowel Production in Winnipeg." *Canadian Journal of Linguistics* 51.2 (2006): 127-41. Print.
- Pringle, Ian, and Enoch Padlosky. "The Linguistic Survey of the Ottawa Valley." *American Speech* 58.4 (1983): 325-44. Print.