CANADIAN PRAIRIE DIALECTS: AN EXPLORATION OF ALBERTA AND SASKATCHEWAN VOWELS

Bryce Jacob Wittrock*[1] and Benjamin V. Tucker†[1]
[1]Department of Linguistics, University of Alberta, Edmonton

1 Introduction

Large-scale studies on Canadian English dialects have parsed three or five major groupings including an Inland/Prairie dialect spanning approximately from the Rocky Mountains to Northern/Western Ontario.[1,2] Focussing on this region, investigations in Southern Alberta have explored phonetic phenomena such as pre-velar raising [3,4] and realizations of the Canadian Shift [5]. It is to this specific body of literature and the broader context of the acoustic characteristics of Canadian dialects that this study aims to contribute. The present study has two research goals: (1) Describe a corpus of Southern Alberta and Saskatchewan English (SASE) and (2) Investigate the acoustic properties of SASE monophthongs and compare them to those of other speaker groups, particularly Central Alberta or Edmonton English (EE).

2 Method

2.1 Participants

The SASE corpus consists of audio recordings of 24 native English speakers (22 monolinguals) from Southern Alberta and Southern Saskatchewan. 13 participants indicated a home community in Southern Alberta, 9 in Southern Saskatchewan, and 2 participants considered themselves to have grown up in the southern part of both provinces. Collecting from both sides of a provincial border was not judged to be problematic since the divided populations are very similar in terms of lifestyle, especially in rural communities. Further, the boundary marks only one noted isogloss, the weakest division among any two provinces [6]. The participant pool consists of 5 men over 40, 7 men under 40, 6 women over 40, and 6 women under 40, forming four gender/age categories. Although such an absolute age boundary can be misleading (a 39-year-old and a 41-year old would not be expected to differ much by age) these age groups were minimally about a generation apart. The youngest over-40 male and the oldest under-40 male are separated by 15 years. Participants were recruited via word-of-mouth and personal relationships and acted freely as non-compensated volunteers.

2.2 Data Collection

Recordings took place in quiet and controlled yet comfortable environments, not uncommonly in participants' own homes. Each recording is approximately 25 minutes long, consisting primarily of a 20-minute interview targeting "the style in which the minimum attention is given to the monitoring of speech."[7] Discussions were free, light, and conversational, often branching from summer holiday plans or leisure activities in an attempt to elicit maximally naturalistic vernacular. Following the interview, participants read a 129-item word list containing hVd and words selected to highlight dialectal differences. Finally, participants read two standardized passages described in [8] and [9].

Our understanding of EE is sketched from two data sets. Thomson's data [10] reflects mean F1 and F2 values for EE monophthongs (including /e/ and /o/) drawn from 20 local participants each producing 20 real or nonce word syllables. The other EE data comes from an unpublished 2014 data set called CoSMIL assembled at the University of Alberta. The CoSMIL EE data consists of 11 native English speaking students (one male) who grew up in or near Edmonton reciting hVd tokens which were extracted and measured as a part of this project.

2.3 Data Analysis

The SASE data was transcribed and word list vowels were segmented and labeled by hand in Praat. All SASE vowel measurements come from the word list readings. Instances of 'hawed' (denoting /ɔ/) are excluded from figures due to the low-back merger and are indistinguishable from /ɑ/ in SASE and both EE pools. Vowelplots were generated using [11]. Figure 1 compares mean formant values for the vowels of SASE and both EE groups. Figure 2 draws from hVd tokens to express the overlap of /ɑ/ and /ʌ/ in SASE and CoSMIL EE.

3 Results and Discussion

The data illustrated in Figure 1 presents /ɪ/ and /ɛ/ closer in SASE than EE. This evidence suggests a potential pin/pen merger in SASE. Alternatively, this data could coincide with the retracting of /ɪ/, /ɛ/, and /æ/ of the Canadian Shift, first explored by [12] and documented in Southern Alberta by [5]. This hypothesis would not however predict /ɪ/ and /ɛ/ converging.

/u/ is similarly fronted in both SASE and EE, aligning with general trends in Canadian English [13] as well as shifts in the Southwestern United States [14] which interestingly also involve a retraction of /ɪ/ and /ɛ/.

All three groups front /ʌ/, distinguishing themselves from the Northern Cities Shift which also describes /u/-fronting but instead predicts a backing of /ʌ/ [1]. Instances of /ʊ/ are fronted remarkably more in the CoSMIL EE data than

* wittrock@ualberta.ca
† bvtucker@ualberta.ca

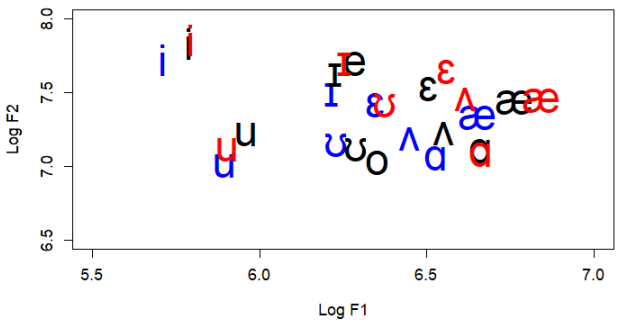

Figure 1: SASE (blue), Thomson EE (black), and CoSMIL (red)

the Thomson EE or SASE data. Given that the EE accounts should in principle, overwhelmingly agree, this curiosity in the CoSMIL data may be explained by two possibilities. Either this difference is a measured shift in the EE vowelspace within the seven years between these projects, or it is an error due to the relatively small data pool. /ʌ/ is also further front in the CoSMIL EE data than both Thomson's EE and SASE which accrue in a central-back place. Depending on future measurements, /ʊ/ and /ʌ/ may be better classed as central vowels for one or both of these English varieties.

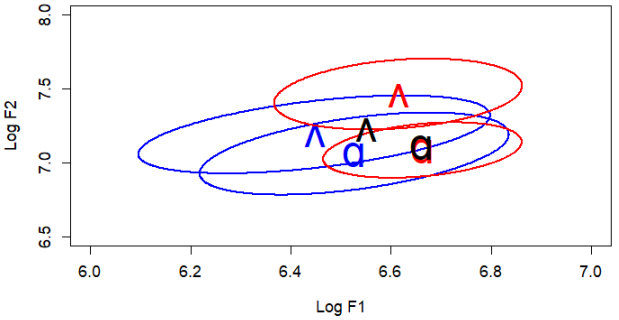

Figure 2: Overlap of /ɑ/ and /ʌ/ in SASE (blue) and CoSMIL (red) hVd tokens with Thomson EE (black) means as reference points

Figure 2 visualizes the degree to which /ɑ/ and /ʌ/ are acoustically distinct among the two dialects. When calculating Pillai scores for this data as first used in vowel overlap by [15], we observe that these two phonemes are strikingly more separate in EE than in SASE where significant overlap occurs. These phonemes generate a Pillai score of 0.524 in SASE compared to 0.81 in EE. We also note that the SASE means of these vowels are closer than in the EE groups.

4 Conclusion

This project has attested acoustic differences in the vowel spaces of two populations within the Inland/Prairie dialect grouping of previous Canadian Dialectology literature. The dialects of Southern Alberta and Saskatchewan English and Edmonton English display measurable differences in realizations of /ʊ/, /ɪ/ and /ɛ/, as well as /ɑ/ and /ʌ/. Future research will expand upon the relationships between these latter two phoneme pairs and work to further explore the diversity of English dialects within Canada.

Acknowledgments

The authors would like to thank Matthew C. Kelley, Scott Perry, and Ryan Podlubny along with members of the Alberta Phonetics Laboratory for their advice and support. We also deeply thank the volunteer participants for their time and hospitality.

References

[1] Labov, W., Ash, S. & Boberg, C. (2006). Canada. *The Atlas of North American English.* Berlin, Boston: Mouton de Gruyter.

[2] Boberg, C. (2008). Regional phonetic differentiation in standard Canadian English. *Journal of English Linguistics*, *36*(2), 129-154.

[3] Jones, J. (2015). *I bag your pardon: The Albertan æ/ɛ vowel shift as a window into community grammars* (Doctoral dissertation, University of Calgary).

[4] Rosen, N., & Skriver, C. (2015). Vowel patterning of Mormons in southern Alberta, Canada. *Language & Communication*, *42*, 104-115.

[5] Rosen, N., & Heinrichs, M. (2014). Canadian Shift in Southern Alberta. *New ways of analyzing variation (NWAV), 43.*

[6] Boberg, C. (2005). The North American regional vocabulary survey: New variables and methods in the study of North American English. *American Speech*, *80*(1), 22-60.

[7] Labov, W. (1972). *Sociolinguistic patterns* (No. 4). University of Pennsylvania Press.

[8] Kendall, T. (2013). *Speech rate, pause and sociolinguistic variation: studies in corpus sociophonetics*. Springer.

[9] Deshpande, S., Chikkerur, S., & Govindaraju, V. (2005). Accent classification in speech. In *Fourth IEEE Workshop on Automatic Identification Advanced Technologies (AutoID'05)* (pp. 139-143). IEEE.

[10] Thomson, R. I. (2008). *Modeling L1/L2 interactions in the perception and production of English vowels by Mandarin L1 speakers: A training study*. ProQuest.

[11] Barreda, S. (2015). phonTools: Functions for phonetics in R. *R package version 0.2-2.1.*

[12] Clarke, S., Elms, F., & Youssef, A. (1995). The third dialect of English: Some Canadian evidence. *Language Variation and Change*, *7*(2), 209-228.

[13] Boberg, C. (2011). Reshaping the vowel system: An index of phonetic innovation in Canadian English. *University of Pennsylvania Working Papers in Linguistics*, *17*(2), 4.

[14] Clopper, C. G., Pisoni, D. B., & De Jong, K. (2005). Acoustic characteristics of the vowel systems of six regional varieties of American English. *The Journal of the Acoustical society of America*, *118*(3), 1661-1676.

[15] Hay, J., Warren, P., & Drager, K. (2006). Factors influencing speech perception in the context of a merger-in-progress. *Journal of phonetics*, *34*(4), 458-484.