A Phonetic Analysis of the Englishes at The University of British Columbia

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Canadian English is typically divided into three dialects: (1) The Maritimes, (2) Quebec, and (3) everything west of Ottawa (Boberg, 2008). These parameters have been refined, but still all of Western Canada is lumped into the category of "the West" in standard descriptions of North American English Dialects (e.g., Labov, Ash, & Boberg, 2006). Recent work in the Pacific Northwest has shown that there may be very subtle differences between the English spoken by monolinguals in Vancouver and Seattle (Swan, 2016). These dialect descriptions might make a naive reader to conclude that listeners in Canada hear very little accent variation. However, given these dialect descriptions are typically based on urban individuals and focus only on monolinguals (Boberg, 2008; Chambers, 1998), the true accent diversity available for auditory experience is overlooked. Given that exposure to different accents can facilitate comprehension of new voices (e.g., Baese-Berk et al., 2013), knowing the extent of accent variation in the linguistic milieu can be of practical importance.

The speech community that receives our focus is the undergraduate population at the University of British Columbia (UBC). Nearly 25% of UBC's undergraduates are international students (UBC Planning and Institutional Research, 2018), bringing with them native and nonnative varieties of English. On a slightly larger scale, in the Metropolitan Vancouver Area, roughly 14% of the population identifies their mother tongue to be Mandarin (Statistics Canada, 2016). In this paper, we achieve three goals: (1) we describe our corpus of the Voices of UBC; (2) provide an approximate quantification of the pronunciation variation in our sample of 90 speakers (67 = female, 23 = male), focusing on the well studied Foreign /æ/, /æɡ/, and GOOSE fronting (e.g., Boberg 2010; Sadlier-Brown 2012); and (3) we provide a more focused comparison of local native speakers of English (n = 36) to individuals whose first language is Mandarin (n = 19) and acquired English between the ages of 3 - 15. Participants were recorded via a head-mounted microphone connected to a USBPre2 and a PC computer and sound files were digitized at 44.1kHz sampling rate. Participants read a list of 246 words off of a computer monitor, where each word was presented individually for 1500 milliseconds before the program moved to the next word. The word list was cycled through three times, resulting in 738 word productions. Following the word list, participants were asked to read a Canadian children's story, namely *The Paper Bag Princess*. (Munsch, 1980). The sound files were orthographically transcribed and force-aligned (McAuliffe et al., 2017). While our analysis is ongoing, the basic empirical description of accent variation at UBC will provide a proxy to the amount of phonetic variability local listeners are exposed to, which can lead to predictions about perceptual flexibility. Moreover, the comparison of Mandarin L1 and native English speakers will contribute to our understanding of phonetic adaptability and age of acquisition in sequential bilinguals (e.g., Flege et al., 1999).

References:

Baese-Berk, M. M., Bradlow, A. R., & Wright, B. A. (2013). Accent-independent adaptation to foreign accented speech. *The Journal of the Acoustical Society of America*, *133*(3), EL174-EL180.

Boberg, Charles. (2008) Regional phonetic differentiation in Standard Canadian English" *Journal of Linguistics* vol 36, *no 2*, pp 129-154.

Boberg, Charles. (2010) *The English Language in Canada: Status, History, and Comparative Analysis.* New York: Cambridge University Press.

Flege, J. E., MacKay, I. R., & Meador, D. (1999). Native Italian speakers' perception and production of English vowels. *The Journal of the Acoustical Society of America*, *106*(5), 2973-2987.

Labov, William., Ash, Sharon., Boberg, Charles. (2006) The Atlas of North American English: Phonetics, Phonology, and Sound Change : *a Multimedia Reference Tool, Volume 1*. Walter de Gruyter.

McAuliffe, M., Socolof, M., Mihuc, S., Wagner, M., & Sonderegger, M. (2017). Montreal Forced Aligner: trainable text-speech alignment using Kaldi. In *Proceedings of Interspeech*.

Munsch, Robert., Martchenko, Michael. (1980) The Paper Bag Princess. Annick Press.

Sadlier-Brown, Emily. (2012) Homogeneity and autonomy of Canadian Raising. *World Englishes* vol 31, no 4, pp 534-548.

Statistics Canada. (2016). "Census Profile, 2016 Census - Vancouver [Census metropolitan area], British Columbia". Available at https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CMACA&Code1=933&Geo2=PR&Code2=59&Data=Count&SearchText=Vancouver&SearchType=Begins&SearchPR=01&B1=All&TABID=1 (Last viewed February 1, 2019).

Swan, Julia T. (2016) *Canadian English in the Pacific Northwest: A Phonetic comparison of Vancouver, B.C and Seattle, WA.* University of Chicago. https://works.bepress.com/julia-swan/16/

UBC Planning and Institutional Research. (2018). "2018 Demongraphics Overview of International Students" Available at http://pair.ubc.ca/student-demographics/demographics/ (Last viewed February 1, 2019).