



ETHNOLINGUISTIC VOWEL DIFFERENTIATION IN MANITOBA ENGLISH

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Research Goal & Study Foci

GOAL: To document vowel production differences among ethnic groups in the English dialect spoken in Manitoba, Canada.

Phonological processes investigated:

1. Post-coronal /uw/-fronting
2. Pre-nasal and pre-velar raising of /æ/, i.e. *ban*- and *bag*-raising
3. *Canadian Raising* of pre-voiceless /aw/

Research Context

While ethnolinguistic research in Canada is a growing area of study, the Canadian Prairies (Manitoba, Saskatchewan & Alberta) remain under-researched:

- Prior research (Onosson et al., 2019) established that Filipinos in Winnipeg exhibit more lowered/retracted productions of the *Canadian Shift* vowels /æ, ε, ɪ/ than other Winnipeggers, but similar to larger centres e.g. Toronto
- Broader ethnolinguistic variation in Manitoba is mostly unstudied

Mennonite–Manitobans

Mennonites are one of Manitoba’s most important ethno-religious groups:

- After becoming 5th Canadian province in 1870, two “Mennonite Reserves” established in Manitoba, attracting nearly 40% of ≈18,000 late 19th C. Mennonites migrating from Imperial Russia to N. America (Loewen, 2001)
- 25% of all Canadian Mennonites reside in Manitoba (Statistics Canada, 2016)
- German is the second-most widely-spoken L1 in Manitoba at 63,825 speakers

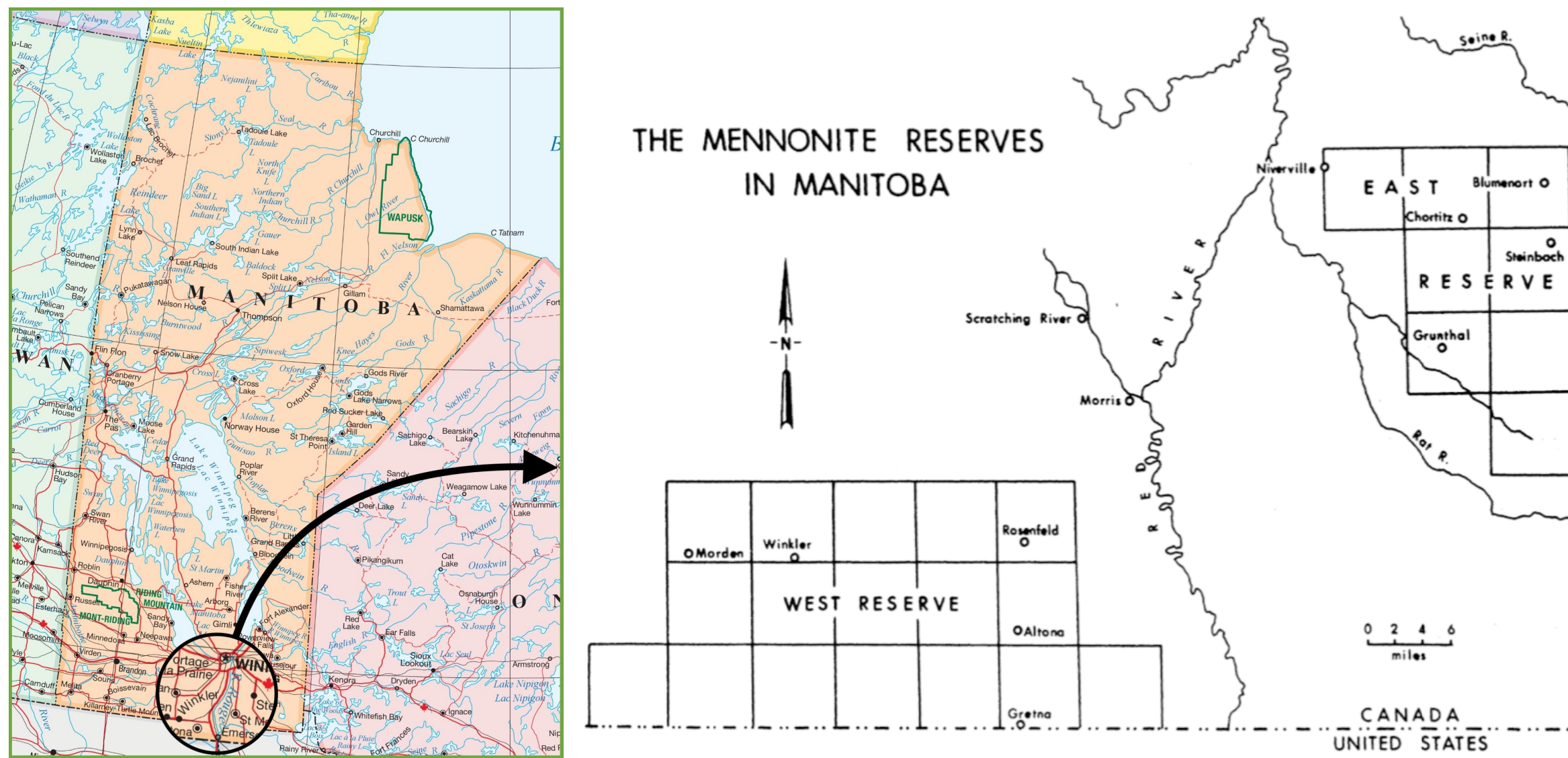


Fig. 1: The Mennonite Reserves in Manitoba (Ledohowski, 2003)

Filipino–Winnipeggers

Filipinos are one of the largest ethnic groups in Manitoba’s capital, Winnipeg:

- Regular migration to Manitoba from the Philippines began in late 1960s; it remains the #1 international source of migrants to the province
- Filipinos make up 9.7% of Winnipeg’s population (cf. 2.3% nationally), with the largest concentration in the north-west quadrant of the city
- Tagalog is the second-most widely-spoken L1 in Winnipeg at 48,530 speakers

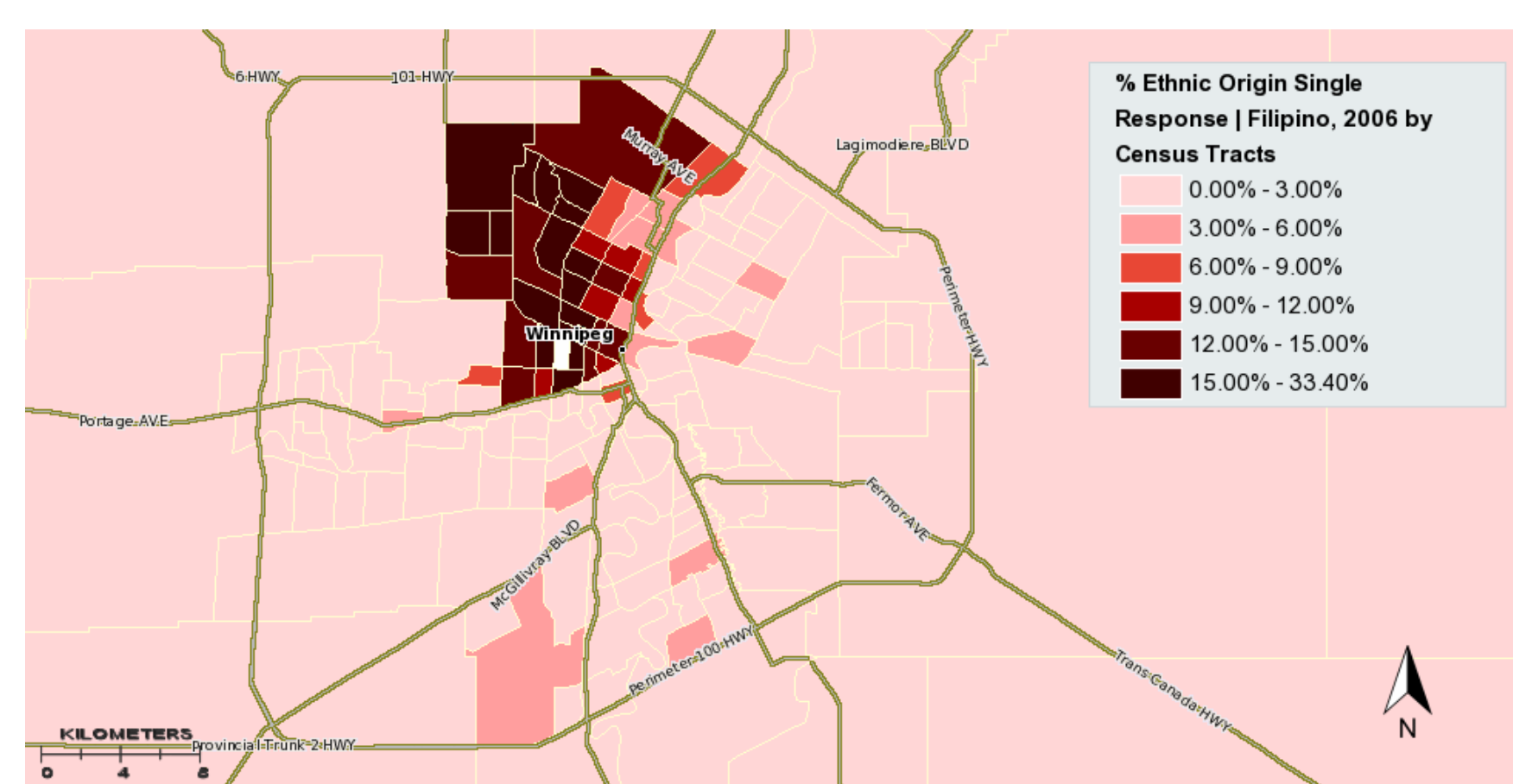


Fig. 2: The Filipino Population in Winnipeg (Kelly, 2007)

Data & Methods

The *Languages In the Prairies Project* (LIPP; Rosen & Skriver, 2015) contains ***N* = 108 transcribed sociolinguistic interviews** with Manitobans: 39 West-Reserve Mennonites, 21 East-Reserve Mennonites, 29 Filipino-Winnipeggers & 19 un-differentiated European-Winnipeggers (i.e. “white”). Audio was processed in FAVE (Rosenfelder et al., 2014), yielding ***n* = 505,870 vowel tokens**. Statistical analysis was conducted in R (R Core Team, 2019), and plots generated with **ggplot2** (Wickham & Winston, 2019).

Post-coronal /uw/-fronting

The *Atlas of North American English* (ANAE; Labov et al., 2006) documented both general and post-coronal fronting of /uw/, [Kuɰ] and [Tuɰ] respectively, throughout Canada. LIPP results indicate that Manitoba speakers lag somewhat behind N. American F2 averages for both [Kuɰ] (LIPP = 1336 Hz vs. ANAE = 1433 Hz) and [Tuɰ] (LIPP = 1730 Hz vs. ANAE = 1811 Hz).

ANOVA of /uw/ F2 distribution by *coda context* and *ethnicity* indicated that Mennonite speakers exhibit significantly (*p*<0.001) greater post-coronal /uw/-fronting than European-Winnipeggers by +45 Hz; Filipino- and European-Winnipeggers /uw/ F2 distributions were not significantly different from each other.

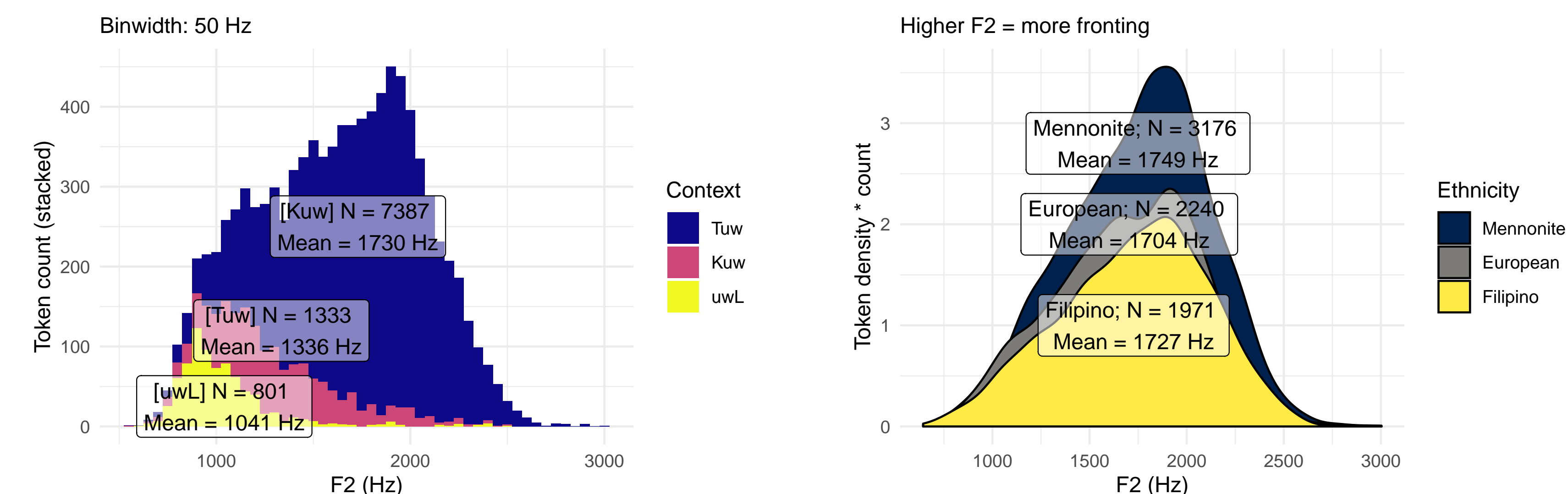


Fig. 3: Distribution of /uw/ F2 by phonological context

Fig. 4: Density of post-coronal /uw/ F2 by ethnicity

Pre-nasal and pre-velar /æ/-raising

Boberg (2008) documented pre-velar /æ/-raising in the Prairies exceeding pre-nasal /æ/-raising, as measured by F1 values, a configuration unique to this region. Most studies of pre-nasal /æ/-raising conflate the three nasal consonants. However, as /m, n, ŋ/ involve radically distinct articulations, there is no *a priori* justification for conflating these; findings from LIPP suggest they should be treated distinctly.

ANOVA of /æ/ F1 distribution by coda segment found that each nasal was significantly different from every other nasal, but /m/ was *not* significantly different from non-nasal codas. The most substantial and significant raising patterns, as compared with non-pre-velar/nasal /æ/, were found for coda /ŋ/ at –93.1 Hz, /g/ at –77.1 Hz, /n/ at –65.5 Hz. These results indicate that /ŋ/ is best classified together with /g/ when discussing pre-velar raising, that /m/ should not be distinguished from non-nasal codas, and that “pre-nasal” /æ/-raising should probably be restricted to coda /n/.

Analysis of /æ/ F1 distributions by *ethnicity* within each coda type found significantly different results only pertaining to coda /n/. Both Mennonite and Filipino speakers exhibited higher F1 values—that is, less *ban*-raising—than European-Winnipeggers, by +10.2 and +15.8 Hz respectively.

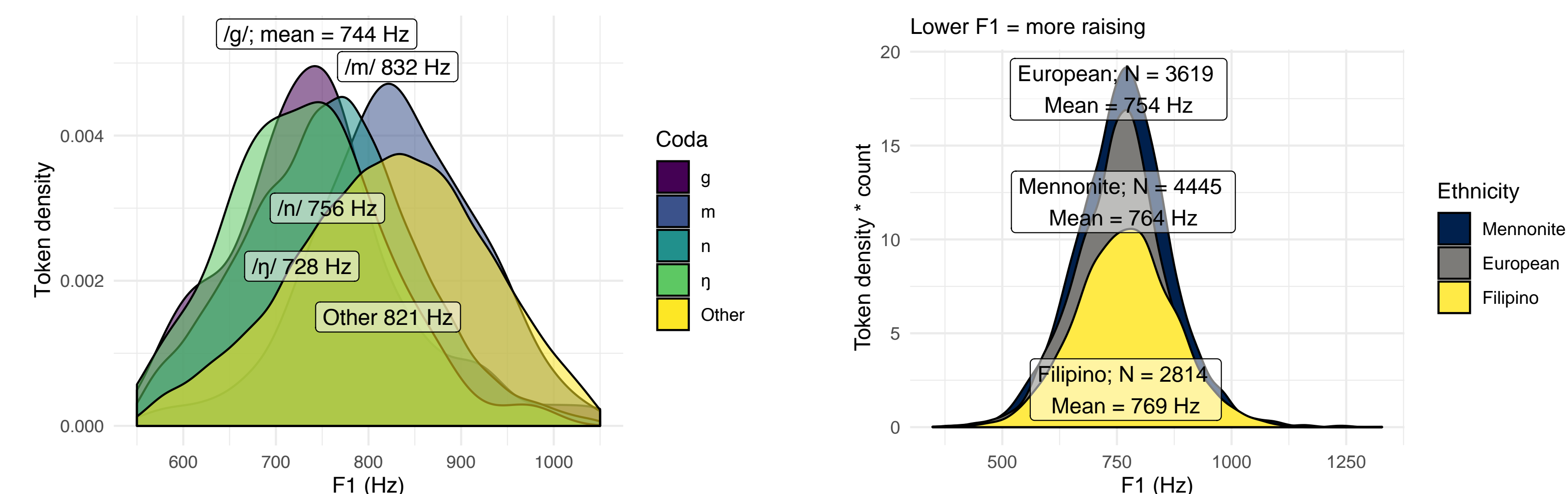


Fig. 5: Distribution of /æ/ F1 by coda

Fig. 6: Distribution of pre-nasal /æ/ F1 (i.e. *ban*-raising) by ethnicity

Canadian Raising of /aw/

Occurrence of Canadian Raising was evaluated using GAMs (Hastie & Tibshirani, 1987) comparisons of formant trajectories across the five intervals provided by FAVE. Unsurprisingly, robust raising of pre-voiceless /aj, aw/ occurred generally in the LIPP data, as measured by F1 trajectory differences.

GAMs comparisons of per-diphthong formant trajectories by *coda voicing* found significant differences between ethnicities only for pre-voiceless /aw/. Mennonites exhibit the greatest degree of raising (lower F1), and Filipinos the least, while Europeans fall in between the two, partially overlapping Filipino production during the initial 1/3 of the diphthong, i.e. the nucleus.

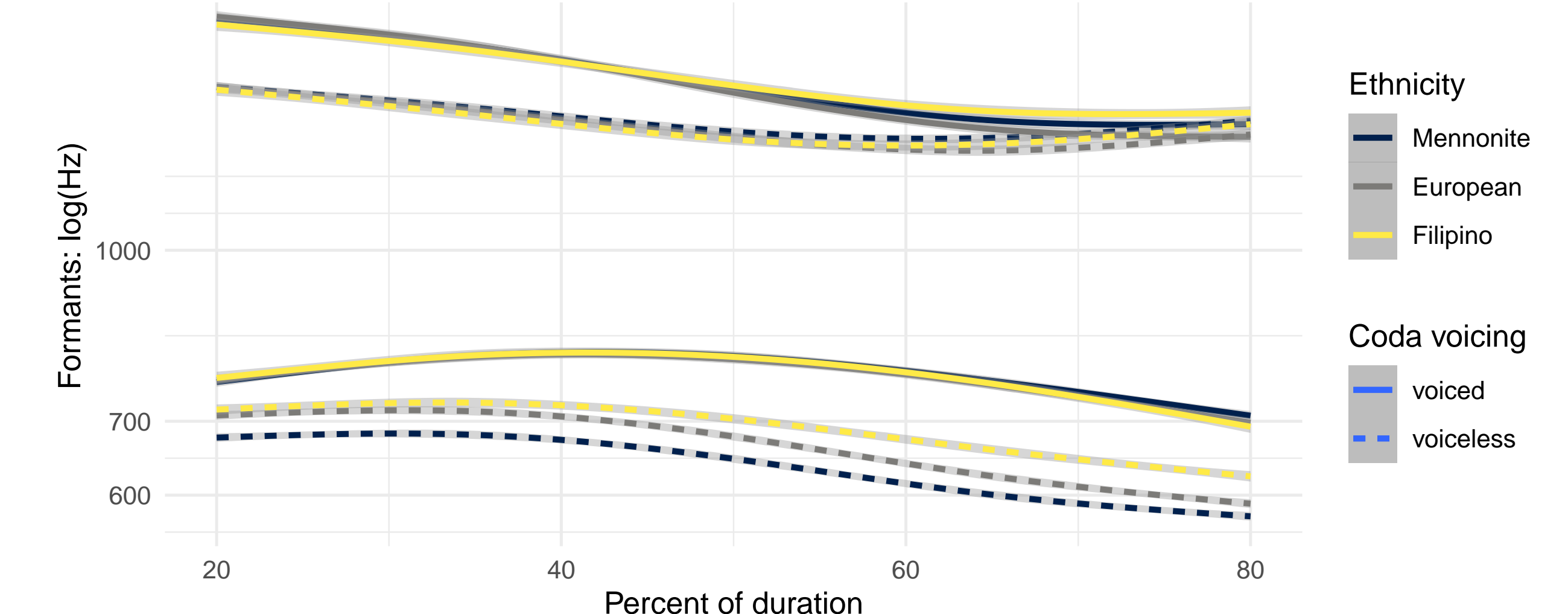


Fig. 7: GAMs comparison: Formants of /aw/ by speaker ethnicity and coda voicing; 95% CIs

Conclusion

The results presented here have identified sometimes subtle, yet significant acoustic vowel production distinctions related to ethnicity among Anglophone Manitobans. Within Canada, Manitoba and the other Prairie provinces are often overlooked in favour of more populous (e.g. Ontario, British Columbia) or historic (Atlantic Canada) anglophone regions. The results garnered thus far from LIPP support further investigation of differences related not only to ethnicity but also locale, urbanity, age, sex/gender, socioeconomic status, and other demographic characteristics, within this vast region of the country.

References

- Boberg, C. (2008). Regional Phonetic Differentiation in Standard Canadian English. *Journal of English Linguistics*, 36(2), 129–154.
- Hastie, T., & Tibshirani, R. (1987). Generalized Additive Models: Some Applications. *Journal of the American Statistical Association*, 82(398), 371–386.
- Kelly, P. (2007). Filipino Migration, Transnationalism and Class Identity. *Asia Research Institute Working Paper Series*, 90.
- Labov, W., Ash, S., & Boberg, C. (2006). *The Atlas of North American English: Phonetics, Phonology and Sound Change*. Berlin, New York: Mouton de Gruyter.
- Ledohowski, E. M. (2003). *The Heritage Landscape of the Crow Wing Study Region of Southeastern Manitoba: A Pilot Project*. Historic Resources Branch: Manitoba Culture, Heritage and Tourism.
- Loewen, R. (2001). *Hidden Worlds: Revisiting the Mennonite Migrants of the 1870s*. Winnipeg: The University of Manitoba Press.
- Onosson, S., Rosen, N., & Li, L. (2019). Ethnolinguistic Differentiation and the Canadian Shift. In *Proceedings of the 19th International Congress of Phonetic Sciences, Melbourne, Australia 2019*, (pp. 1–5).
- R Core Team (2019). R: A language and environment for statistical computing. Programming language. <https://www.r-project.org/>
- Rosen, N., & Skriver, C. (2015). Vowel patterning of Mormons in Southern Alberta, Canada. *Language and Communication*, 42, 104–115.
- Rosenfelder, I., Fruehwald, J., Evanini, K., Seyfarth, S., Gorman, K., Prichard, H., & Yuan, J. (2014). FAVE (Forced Alignment and Vowel Extraction). Program suite. <https://github.com/JoFrhwld/FAVE>
- Statistics Canada (2016). Census Profile, 2016 Census. <https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>
- Wickham, H., & Winston, C. (2019). Create Elegant Data Visualisations Using the Grammar of Graphics. Package ‘ggplot2’, 3.2.1. <https://cran.r-project.org/web/packages/ggplot2/ggplot2.pdf>

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