

Some rhythmic and timing patterns in contact varieties of Canadian French

Rhythmic properties of contact varieties often show a transfer of prosodic features. Studies have found that contact varieties of a “stress-timed” language such as English tend to be less stress-timed than varieties spoken by monolingual speakers of American or British English (e.g. Fuchs 2016, Szakay 2008). Similarly, contact varieties of a “syllable-timed” language such as French or Spanish can be less syllable-timed than non-contact varieties (e.g. Fagyal & Torgerson 2018, Kireva & Gabriel 2015). This paper examines rhythmic variation in French spoken in three localities in Canada that are situated in regions with different French-English contact situations. In Quebec City, located in the *laurentien* dialect region, French is the majority language and there is very little contact with English; in Windsor (Ontario), speakers of the *ontarien* variety live in an area where French is a minority language both locally and regionally; in Tracadie (New Brunswick) where the *acadien* variety is spoken, French is the majority language locally but a minority language in the larger region (where English is the majority language). Our main research question asks whether these different contact situations are related to differences in speech rhythm, specifically whether greater contact is associated with less syllable-timing. Our analyses are based on rhythm metrics (Dellwo 2006, Grabe & Low 2002, Low et al. 2000, Ramus et al. 1999, White & Mattys 2007), which have been used in characterizing timing differences among regional varieties.

Materials are readings of a text passage by 21 speakers from Quebec City, Windsor and Tracadie who were recorded in the context of interviews for the PFC (*Phonologie du français contemporain*) survey (Durand et al. 2009). Segmentation of the data was done automatically and manually in Praat. Rhythm metrics were calculated for each speaker, and each metric was analyzed with mixed-effects modeling that had locality, age and gender as predictor factors. In this paper we present results for five metrics – %V, ΔV , rPVI-V, ΔC , and rPVI-C – where locality was a significant effect.

The results suggest that, among the three localities, Quebec City has the most “syllable-timed” rhythm. Speakers from this locality have the highest proportion of vocalic intervals (%V), the lowest standard deviation of vocalic interval durations (ΔV) and of consonantal interval durations (ΔC), and the lowest pairwise absolute difference between consecutive vowel (rPVI-V) and consecutive consonant intervals (rPVI-C). Speakers from the two contact varieties show less syllable-timed rhythm patterns, but these patterns differ between localities. Tracadie has high variability consonant durations (the lowest %V, highest ΔC and rPVI-C). The pattern for Windsor is characterized by high variability of vowel durations (highest ΔV and rPVI-V).

These results for Canadian French confirm earlier findings that contact varieties of a “syllable-timed” language tend to have a less syllable-timed rhythm. However, even though these varieties are related they can exhibit different timing patterns. An interesting footnote of this research is that while recent studies raise questions about the reliability and validity of rhythm metrics (see, inter alia: Arvaniti 2012, White & Malisz 2020), these metrics remain a useful tool to explore variability in timing across varieties of the same language.

References

- Arvaniti, A. 2012. The usefulness of metrics in the quantification of speech rhythm. *Journal of Phonetics* 40 : 351-373.

- Dellwo V. 2006. Rhythm and speech rate: A variation coefficient for deltaC. In P. Karnowski & I. Szigeti (eds.) *Language and language-Processing: Proceedings of the 38th Linguistic Colloquium* (August, 2003). Piliscsaba. Hungary. Frankfurt am Main: Peter Lang. 231-241.
- Durand, J., B. Laks & C. Lyche. (2009). Le projet PFC: une source de données primaires structurées. In J. Durand, B. Laks & C. Lyche (eds.) *Phonologie, variation et accents du français*. Paris : Hermès. 19-61.
- Fagyal, Z. & E. Torgerson. 2018. Prosodic rhythm, cultural background, and interaction in adolescent urban vernaculars in Paris: case studies and comparisons. *Journal of French Language Studies* 29: 165-179.
- Fuchs, R. 2016. *Speech Rhythm in Varieties of English: Evidence from Educated Indian English and British English*. Singapore: Springer.
- Grabe, E. & Ee Ling Low. 2002. Durational variability in speech and the rhythm class hypothesis. In C. Gussenhoven & N. Warner (eds.) *Papers in Laboratory Phonology 7*. Berlin: Mouton de Gruyter. 515-546.
- Kireva, E. & C. Gabriel. 2015. Rhythmic properties of a contact variety: Comparing read and semi-spontaneous speech in Argentinean Porteño Spanish. In E. Delais-Roussaire, M. Avanzi & S. Herment (eds.) *Prosody and Language in Contact: L2 Acquisition, Attrition and Languages in Multilingual Situations*. Berlin: Springer. 149-168.
- Low Ee Ling, E. Grabe & F. Nolan. 2000. Quantitative characterizations of speech rhythm: Syllable-timing in Singapore English. *Language and Speech* 43(4): 377-401.
- Ramus, F., M. Nespó & J. Mehler. 1999. Correlates of linguistic rhythm in the speech signal. *Cognition* 73(3): 265-292.
- Szakay, A. 2008. *Ethnic Dialect Identification in New Zealand*. Saarbrücken: VDM Verlag Dr Müller.
- White, L. & S. L. Mattys. 2007. Rhythmic typology and variation in first and second languages. In P. Prieto, J. Mascaró & M.-J. Solé (eds.) *Segmental and prosodic issues in Romance Phonology*. Amsterdam: John Benjamins. 237-257.
- White, L. & Z. Malisz. 2020. Speech rhythm and timing. In C. Gussenhoven & A. Chen (eds.) *The Oxford Handbook of Language Prosody*. Oxford: Oxford University Press. 166-179.