

## Measuring the rhythm of Accentual Phrases in Acadian French

Traditional measures of rhythm were based on syllable counts (Wenk and Wioland, 1982). In recent years as computer techniques facilitated the acoustic measurement of durations, researchers developed 'rhythm metrics' to capture patterns of timing in speech. These quantitative measures focus on the variability in the durations of intervals such as vowels, consonants, syllables and feet. In this paper, we use both types of measures to compare the rhythm of read and spontaneous speech in a variety of Acadian French. Measurements are based on intervals known as Accentual Phrases (APs) – also called *groupes rythmiques* and *mots prosodiques*. Our hypothesis is that both traditional and current measures of rhythm will show the presence of rhythmic differences between the two speech styles.

Data are from interviews with 12 speakers of Acadian French from the Acadian Peninsula region of northeastern New Brunswick. Interviews followed the protocol of the *Phonologie du français contemporain* project ([www.projet-pfc.net](http://www.projet-pfc.net)) and included reading a story and spontaneously telling a story. Acoustic data were segmented in *Praat*. Approximately 34 minutes of speech were analyzed; about 2,300 APs: 1,112 in the reading texts and 1,237 in the spontaneous speech.

Results confirm the presence of significant rhythmic differences between the two styles. The syllable count measures indicate that reading has longer APs than spontaneous speech (3.71 vs. 3.34 syllables/AP;  $p < .016$ ); this replicates findings by Lucci (1983) but not Astésano (2001). As well, scores on several rhythm metrics show that the durations of APs have greater variability in spontaneous speech than in reading. This latter result replicates – indirectly – Arvaniti (2012) but not Dellwo et al. (2015). The paper discusses a useful complementarity between the two measures of rhythm; specifically, syllable count measures can help to explain some of the higher rhythm metric scores observed in spontaneous speech.

### References

- Arvaniti, A. (2012) "The usefulness of metrics in the quantification of speech rhythm." *Journal of Phonetics* 40: 351-373.
- Astésano, C. (2001) *Rythme et accentuation en français : Invariance et variabilité stylistique*. Paris : L'Harmattan.
- Dellwo, V., Leeman, A. and Kolly, M-J. (2015) "The recognition of read and spontaneous speech in local vernacular: The case of Zurich German." *Journal of Phonetics* 48: 13-28.
- Lucci, V. (1983) *Étude phonétique du français contemporain à travers la variation situationnelle*. Grenoble : Université des langues et lettres de Grenoble.
- Wenk, B.J. and Wioland, F. (1982) "Is French really syllable-timed?" *Journal of Phonetics* 10 : 193-216.