
### Acoustic features analyzed w/ FAVE:
- *Measurement point & FAVE*
  - SCVE: Synchoronic Corpus of Victoria English (D’Arcy 2018)
  - PCE: Phonetics of Canadian English (Boberg 2008, 2010)
- *Bandwidth*: Monophthongs (SCVE)
- *Accurate analysis of yod*: Mixed methods (SCVE)

### Victoria, BC (SCVE) vs. Pan-Canadian Average

Apparent time comparison of vowel production across studies is informative, but not so straightforward. FAVE options: fourth, third, mid, lenning, anae, maxint

- Harmonics (F0) in the speech also play a role in speech
- Formants are arranged from where they are

### FAVE bandwidth & FAVE

FAVE facilitates only minimal adjustment of measurement point.

### Introduction

This paper 1) provides observations on using FAVE to measure vowel formants with respect to systemic change and 2) suggests an approach to automatic analysis of yod that incorporates FAVE.

FAVE measures formant values at 20%, a reasonable approximation. All possible vowel-yod sequences were tagged as a single segment, and so treated as a unitary vowel by FAVE—essentially a hack, but it works!

FAVE output allowed us to determine yod retention rates in the SCVE, revealing that Victoria retains yod in a rate at a high rate of 92.5%, which is monolithic stable across gender and age, despite increased yod loss generally throughout Canada (in the U.S. it is essentially complete).

### Bandwidth & FAVE

- More tokens; less accuracy

FAVE finds vowels with less resolution, whereas the FAVE finds vowels with more resolution.

### Monophthongs: FAVE provides F1, F2, F3 bandwidth for single-point measurement.

#### Bandwidth accuracy example: BJ29m (SCVE)

- Fig. 8: A vinyl record shows dynamic bandwidth (in red) of a single vowel.

#### Bandwidth: High bandwidth—lacks precision

- The difference between the upper and lower frequencies in a contiguous set of frequencies (ASA 1994).

### Analysing Yod-dropping

#### Identification of yod—no pre-existing metric

Yod refers variability in pronunciation of the single-glides, in Canadian English a subset of coronal-initial contexts e.g. new, tune, student etc. (hereafter non-standard variable occurs yod, e.g. [juv] vs. [ju:v]).

Studies which have examined yod variation in Canada almost invariably use self-reporting (e.g. Pringle 1985; Chambers 1990) or auditory analysis (e.g. Clarke 1993; Woods 1999) rather than replicable acoustic metrics.

#### Glide-vowel sequences problematic for segmentation (manual or automatic)

Yod, among glides, is particularly vowel-like (Gick 2003; Podgata 2008). Because of this and the lack of existing metrics, we (Roeder at al 2018) required a methodology for its identification in Canadian.

To classify tokens for yod occurrence, a random subset of SCVE were audited by three trained sociophoneticians and classified for yod presence or absence. Inter-rater agreement was high at 81.2%, considered reliable (Coppier 2011).

Acoustic analysis of yod-V sequences from these tokens revealed that the greatest point of difference between yod retention vs. loss was the value of F2 at 25% of duration. SSANOVA comparisons confirm this finding.

#### Points to consider in study design

- More provides formant output at 5 discrete points: 20%, 35%, 50%, 65% and 80% of duration.
- For certain types of highly sonorous, vowel-adjacent segments such as glides and liquids, the characteristics best distinguishing vowel may vary in different positions.
- FAVE’s output may or may not always be graminable to the particular of a given research question.
- Failure to account for this in planning stages may lead to unsatisfactory results, wasted time, etc.

### References
