



What is Scottish Vowel Length Rule? SVLR (Aitken 1981) describes *quasi-phonemic* timing alternations in Scottish English vowels /i ʌ ai/ (Scobbie, Hewlett & Turk 1999; Scobbie & Stuart-Smith 2008) Long vowels occur before voiced fricatives, /r/ or morpheme boundaries; short allophones in other contexts. Minimal pairs are e.g. *crude* vs. *crewed*, *brood* vs. *brewed*.

HYPOTHESES

1. The Dialect Contact Hypothesis

- SVLR is known to undergo change in dialect contact situations:
 - Edinburgh: Hewlett, Matthews & Scobbie (1999);
 - Berwick-upon-Tweed: Watt & Ingham (2000);
 - Tyneside English (Newcastle): Milroy (1995); Llamas et al. (2011)
- SVLR-constraints are often replaced by timing constraints of the so-called **Voicing Effect, VE** (House & Fairbanks 1953; Keating 1985)
 - long allophones before voiced consonants; short allophones before voiceless consonants
 - attested in many varieties of English
 - simplification of grammar constraints is a typical consequence of contact (Trudgill 1986)

2. The Prosodic Timing Hypothesis

- Timing is also used to mark prosodic hierarchy (Beckman & Edwards 1990; Whitman et al. 1992):
 - accentual/phrase-final lengthening
- Prosodic hierarchy shapes sound changes (Beckman et al. 1992; Myers and Hansen 2007; Nakai 2013)
 - phrase-medial positions give rise to lenited changes
 - phrase-final accented positions reach durational ceiling, thus triggering positional neutralisations
- SVLR may interact with prosodic timing as it does in many quantity languages:
 - **prosody > quantity:** quantity neutralisation in phrase-final positions (Myers and Hansen 2007; Nakai 2013);
 - **quantity > prosody:** marginal prosodic timing effects due to the high functional load of duration for phonology (Nakai et al. 2012; Remijsen & Gilley 2008; White & Mády 2008)

METHODS

- 16 speakers was specified as either *low-contact* or *high-contact* (i.e. travels to, prolonged stays in England, relatives living in England)
- For each speaker, all fluently spoken, unreduced tokens containing /i ʌ/ were annotated:
 - SVLR-context (*long* vs. *short*)
 - VE-context (*long* vs. *short* vs. *unspecified*, i.e. followed by a morpheme boundary)

- Large-scale database
- Glaswegian vernacular
- Real- and Apparent-Time



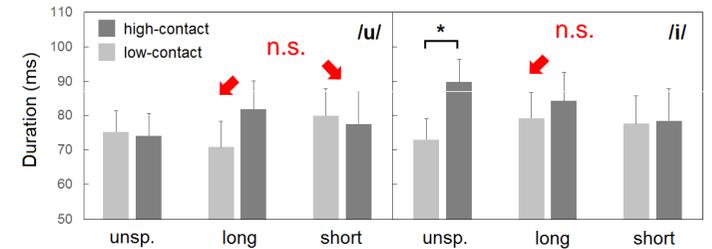
- oral history interviews
- sociolinguistic interviews
- conversations among peers
- TV/radio documentaries

| Targeted Structure of the Corpus (under construction) (this sample) | Age and Gender of Speakers | | | | | | | | | |
|---|---------------------------------------|---|------|--|-------|------|---|-------|------|-------|
| | "Old" intended as 67-90 yr-olds | | | "Middle" intended as 40-55 yr-olds | | | "Young" intended as 10-17 yr-olds | | | |
| | M | F | Born | M | F | Born | M | F | Born | |
| Real-Time Period | 1970s | 6 | 6 | 1890s | 6 (4) | 6 | 1920s | 6 (4) | 6 | 1960s |
| | 1980s | 6 | 6 | 1900s | 6 | 6 | 1930s | 6 | 6 | 1970s |
| | 1990s | 6 | 6 | 1910s | 6 | 6 | 1940s | 6 | 6 | 1980s |
| | 2000s | 6 | 6 | 1920s | 6 (4) | 6 | 1950s | 6 (4) | 6 | 1990s |

- Time-aligned transcriptions stored in the LaBB-CAT database (Fromont & Hay 2012)
 - Phonemic transcriptions available via CELEX dictionary
- Forced alignment of segmental boundaries with audio recordings using HTK
 - Multi-layered searches for stress/word position/phonemic environment

- Prosodic hierarchy specified as:
 - *phrase-medial* vs. *phrase-final* (i.e. the last syllable of a prosodic phrase)
 - *stressed* vs. *accented* (i.e. carrying a pitch accent)
- LMEMs included (1) SVLR, vowel, speaker group, phrasal position, prominence, VE as fixed effects; (2) number of segments, lexical frequency as covariates; (3) speaker, word as random effects

OUTCOMES



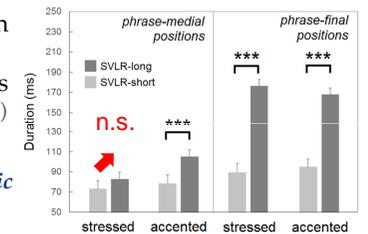
Estimates for vowel*VE*contact ($\chi^2(2) = 8.0, p < 0.05$)

Predicted shortening before voiceless consonants and lengthening before voiced consonants was present only numerically (but n.s.) and only for /ʌ/ (but not /i/)

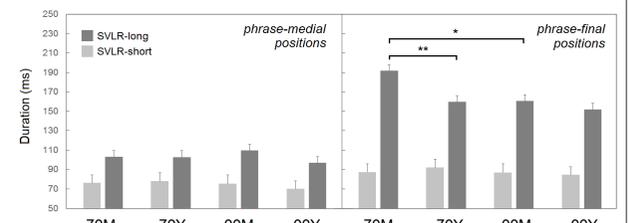
- These data partially support *the Dialect Contact Hypothesis*. How do we define high contact?

SVLR is weakened in phrase-medial, unaccented positions (cf. Beckman et al. 1992)

- These data strongly support *the Prosodic Timing Hypothesis*



Estimates for SVLR*prominence*phrasal position ($\chi^2(1) = 3.2, p = 0.075$)



Estimates for group*SVLR*phrasal position ($\chi^2(3) = 16.2, p < 0.01$)

SVLR is weakened in phrase-final positions (cf. Myers and Hansen 2007; Nakai 2013). Innovators: speakers born in 1950-60s