

“Fax it up?”
“Yes it does rather...”

The fax-fucks merger in spontaneous speech in Aberystwyth English

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Introduction

The TRAP / STRUT merger (Fax/Fucks merger)

- Vowels /a/ and /ʌ/ seem to overlap
 - First documented as part of RP (Fabricius 2007; Wells 1982, 291-292)
 - Diachronically, /a/ has been produced further and further back (Fabricius 2007)
 - Uncertain if it exists
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- But what about other dialect varieties?
 - Welsh English, Aberystwyth (Hejná 2015, 292; Hejná 2018)
 - but very limited evidence
 - “some Southwestern Scots speakers” Hall-Lew et al. (2017, 345)

Previous studies

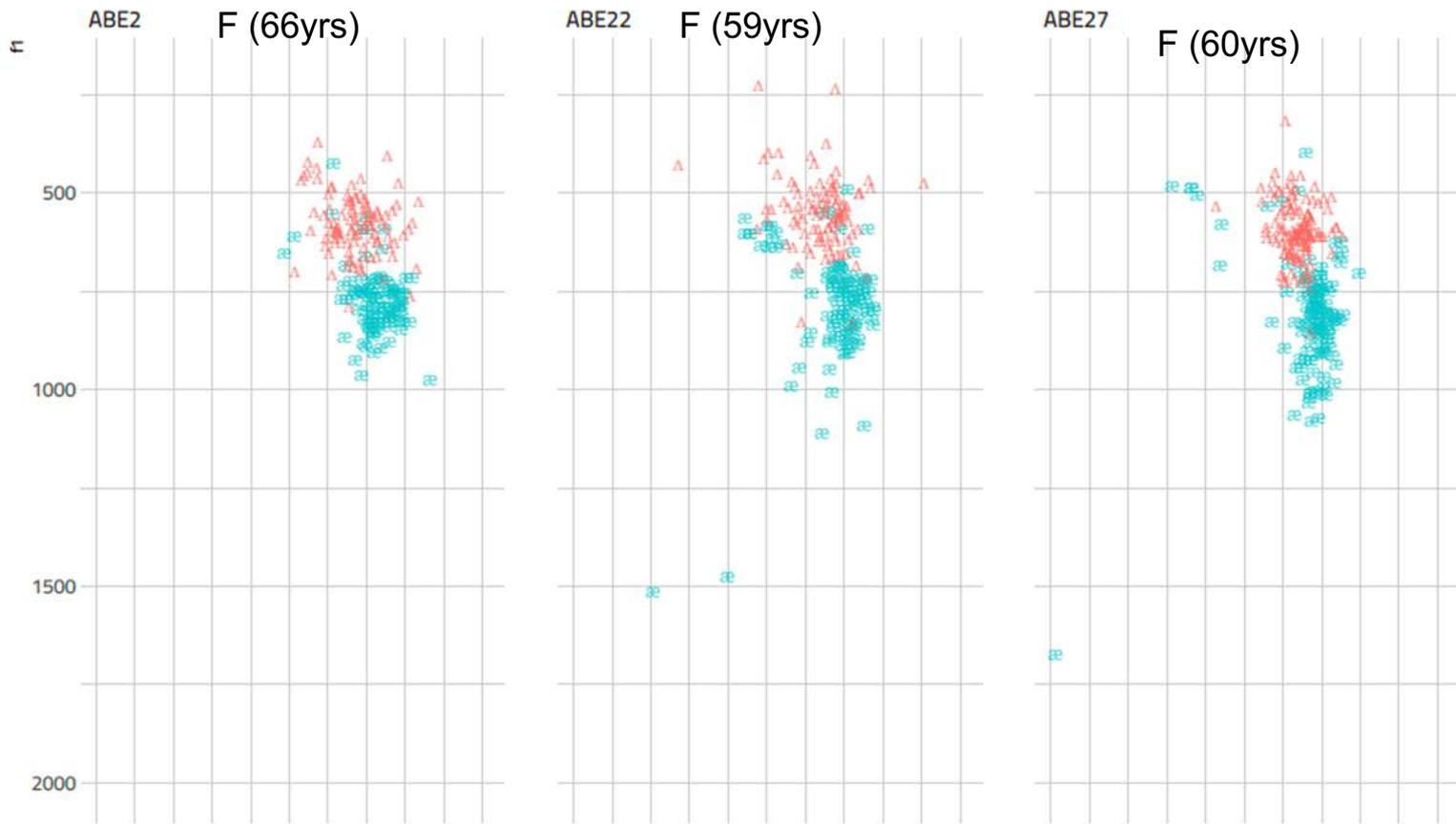
- Fabricius (2007)
 - Took F1 and F2 measurements of a fixed set of TRAP/STRUT words from analogue recordings of RP English spanning several years. (1909-1981)
 - Concluded that TRAP and STRUT vowels have indeed moved closer over time, but cannot say why this has occurred.
 - Did not happen with all speakers.
 - No clear evidence of a merger.
- Hejná (2018)
 - Looked at F1 and F2 again, as well as vowel duration and breathiness, as candidates for phonetic correlates of the TRAP-STRUT contrast
 - Concluded that F2, vowel duration, and breathiness “do not contribute to the phonetic implementation” of the contrast
 - Was done with word-list data → one of the most formal speaking tasks.
 - F1 seems to be the main correlate. At least in wordlist production data.

Current study

What about spontaneous speech?

- **Participants**
 - 10 Aberystwyth English speakers
 - 8 females (17-66 yrs), 2 males (15 & 59 yrs)
 - 9 L1 Welsh speakers; proficient in English
 - 1 L1 English speaker; not proficient in Welsh (but can understand it)
- **Materials**
 - Sociolinguistic interviews lasting cca between 20-60 minutes
 - All TRAP and STRUT cases manually identified & annotated
 - Lexical & grammatical items
- **Procedure**
 - F1 & F2 extracted at vowel interval midpoint (Riebold 2013 & Kaźmierski 2019)
 - duration also extracted
 - Today: raw formant results for the 10 individual speakers

Results: ½ of speakers unmerged on F1 (F2 all merged)

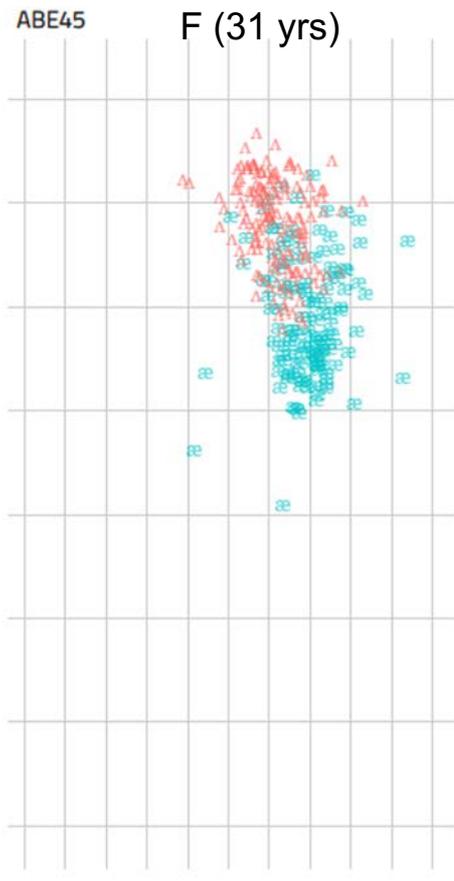
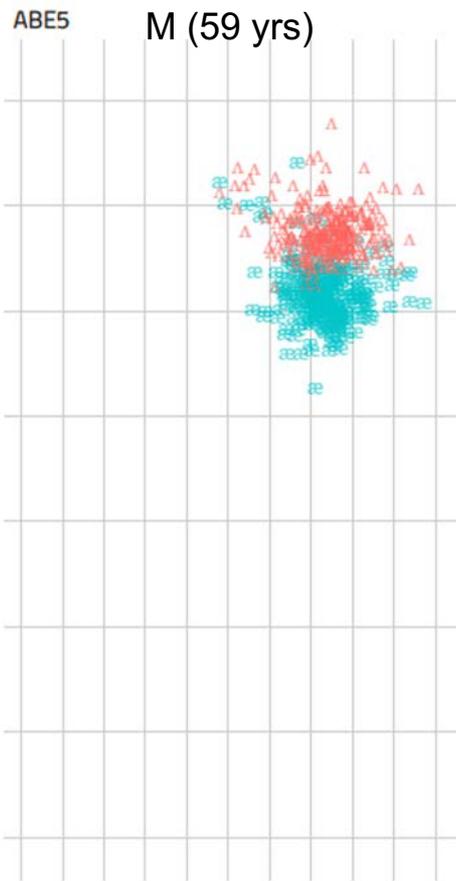
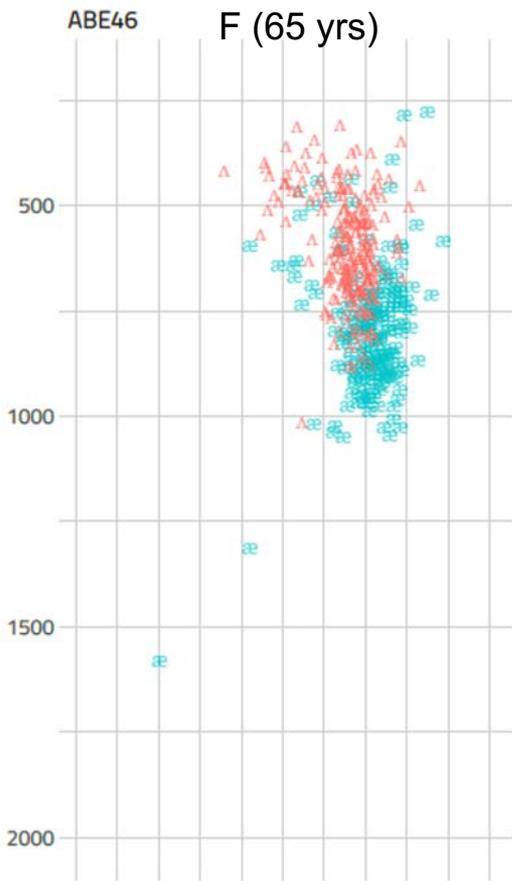


Also:

ABE55 (20 yrs)

ABE56 (18 yrs)

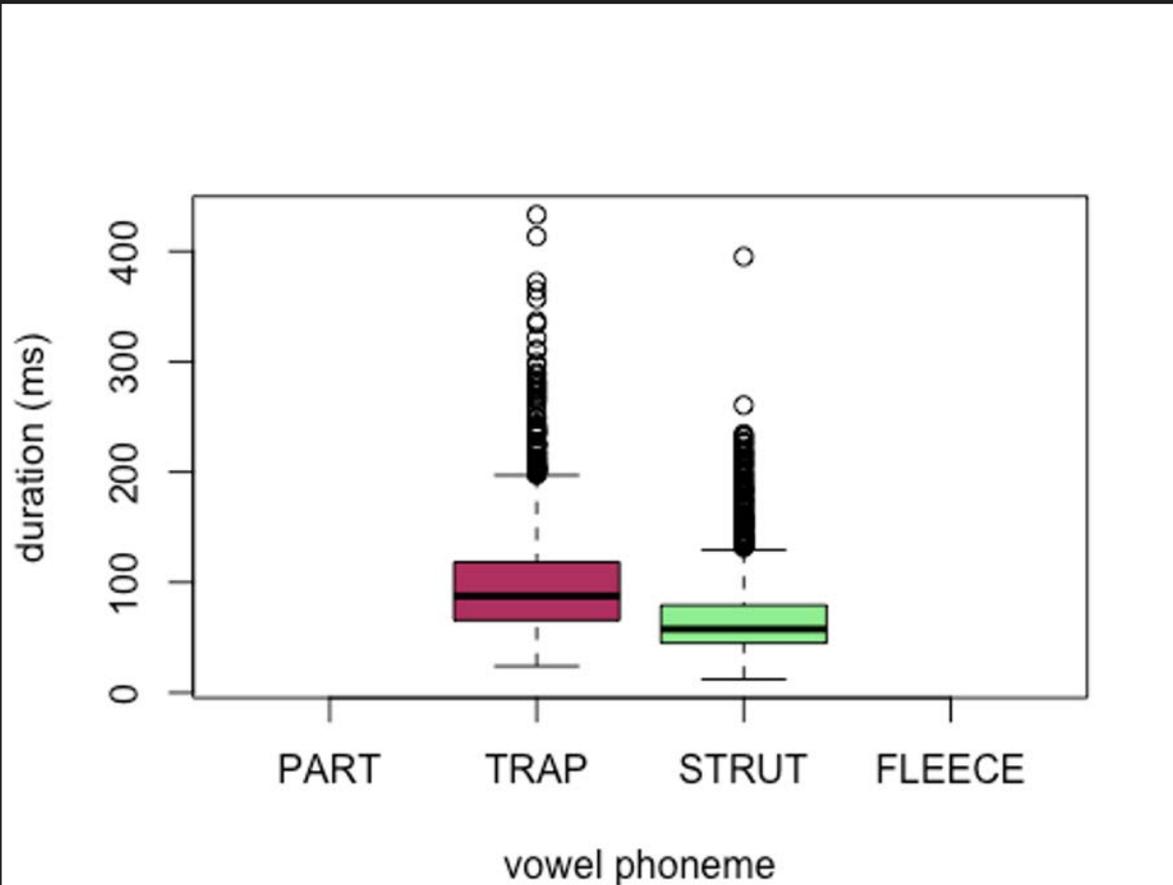
Results: some speakers show a (bit) more overlap



Results: heatmap approach

You'll be taken to a pdf file now...

Results: very preliminary look at duration



What do the results indicate?

- The two phonemes are identical on F2 dimension
- F1 serves as a correlate of the contrast, but not F2
 - But its strength is likely to vary by speakers
 - most speakers don't really show an overlap
 - but some do, and some more so than others
- There is NOT a complete merger
 - But for some speakers there does seem to be a *partial* one

Future study

- Production aspects
 - Vowel formants to be normalised
 - Pillai scores to be used to quantify the potential presence of a merger
 - A statistic that looks at two variables simultaneously and outputs the degree of overlap and its significance (Nycz & Hall-Lew 2013, 5)
 - Durational analyses
 - Even in cases of vowel quality mergers, duration can be the main correlate (e.g. Labov & Baranowski 2006)
- We need a perception study as well!
 - To establish whether the things we (might've) discovered are reflected in perception
 - To see if it is a purely production-related phenomenon (unlikely, but not unheard of)
 - Production studies have so far been inconclusive

Sources

Fabricius, A (2007). Variation and change in the TRAP and STRUT vowels of RP: a real time comparison of five acoustic data sets. *Journal of the International Phonetic Association* 37, 3: 293-320.

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