REGIONAL VARIATION OF SATERLAND FRISIAN VOWELS

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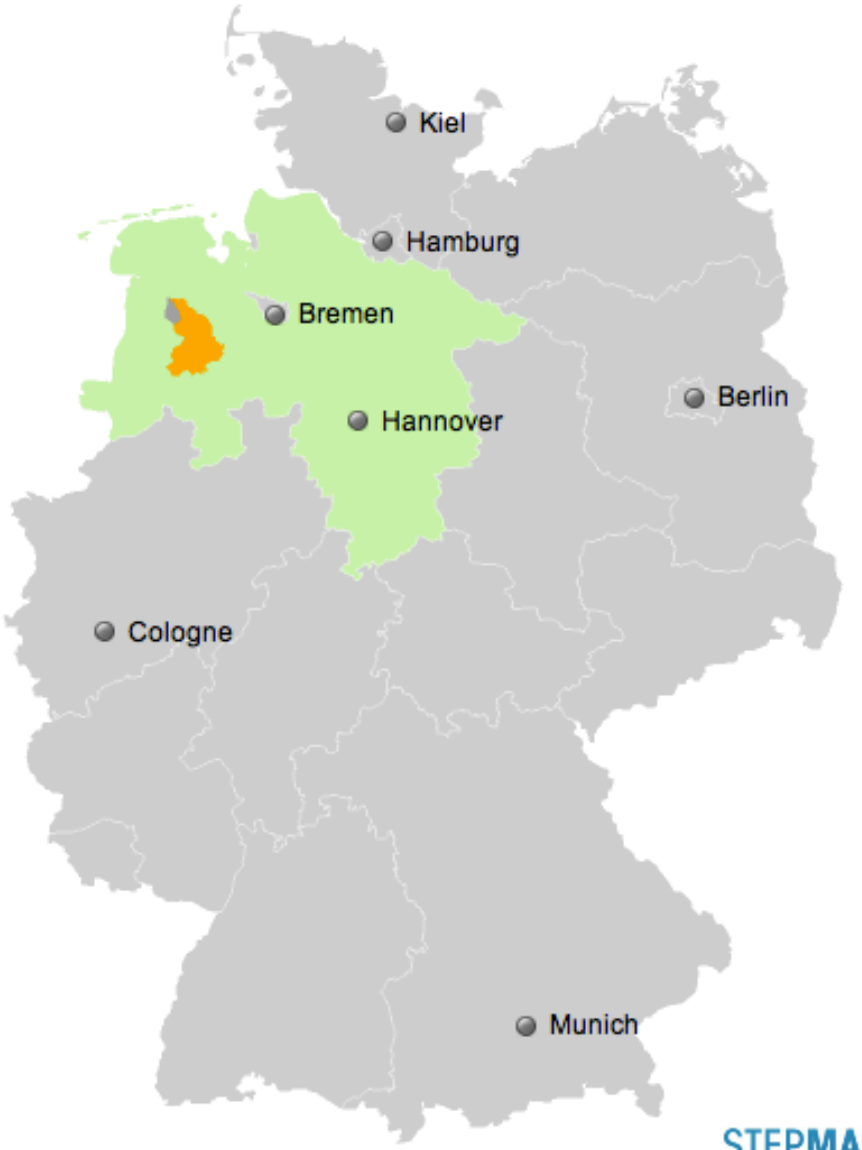
Saterland Frisian

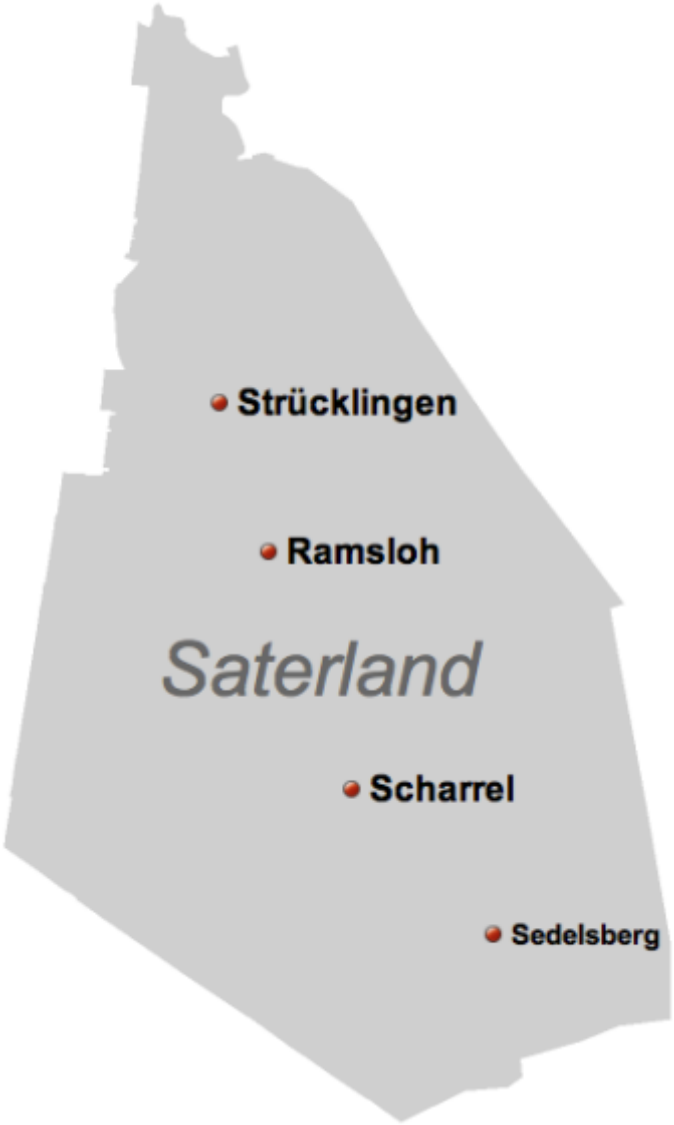


STEPMAP

Saterland Frisian

- last remaining variety of East Frisian
- endangered minority language
- about 2250 native speakers

- Saterland Frisian spoken in Ramsloh, Scharrel, Strücklingen perceived as three distinct regional varieties
  - ➡ use of different vowel qualities
  - ➡ vocalic durations
  - ➡ speech rate
- Scharrel reported as most divergent, Ramsloh as most conservative



Saterland Frisian – Vowel Inventory

Vowels of Saterland Frisian adapted from Fort (2015: XV f), including unstressed /ə/

20 stressed monophthongs

	front	central	back
close	i y		u
	i: y:		u:
close-mid	ɪ ʏ		ʊ
	e: ø:		o:
open-mid	ɛ œ		ɔ
	ɛ: œ:	(ə)	ɔ:
open		a a:	

16 diphthongs

y:i̯	u:i̯	i:u̯(w)	ɛ:u̯(w)
œ:i̯	o:i̯	iu̯(w)	ɛu̯(w)
ɛ:i̯	ɔ:i̯	ɪu̯(w)	o:u̯
a:i̯	ɔy̯	e:u̯(w)	a:u̯

Vowel length is not linked to tenseness:

- /i: y: u:/ - /i y u/ - /ɪ ʏ ʊ/
- /ɛ: œ: ɔ:/ - /ɛ œ ɔ/

Number of diphthongs disputed: 16 (Fort 2015), 14 (Fort 1980), 8 (Kramer 1982) 6 (Bussmann 2004)

Aim of the Study

Acoustic analysis of the complete inventory of Saterland Frisian vowels and its regional variation.

In particular, we examine

(1) the depicted inventory and possible mergers

(1) supplementary acoustic dimensions that support vowel distinction
(cf. phonetic feature enhancement, Clements & Ridouane 2006)

- f0(-dynamics) & additional centralization
- vowel dynamics (i.e. VISC, Nearey & Assmann 1986)
- acoustic vowel duration

(3) regional variation

- static & dynamic spectral features
- acoustic vowel duration
- vowel space

Method

Participants

- 35 male native speakers aged between 50 and 75: 13 from Ramsloh, 11 from Scharrel, 11 from Strücklingen
- all born in Saterland and grown up in the respective village

Elicitation

- monosyllabic /hVt/ context
- elicitation via rhymes (cf. Bohn 2004)
- local native speakers as instructors
- controlled randomization
- each sequence was presented twice

Method

Poot? ‘Pfote’

Poot?

H_t.

Moite? ‘Mühe’

Moite?

Moit?

Moite?

Moit?

H_t.

Analyses

Done in Praat (Boersma & Weenink 2014), variables considered:

- F1 & F2 at 20%, 50%, 80%, Lobanov (1971) normalization
- vowel duration
- dynamic spectral features (Fox & Jacewicz 2009, cf. Jin & Liu 2013)
  - VISC
    amount of spectral change calculated as the sum of the Euclidean distances between three measurement points (20%, 50%, 80%) in F1 & F2
  - spectral rate of change
    the amount of VISC within the central 60% devided by its duration

<u>Statistical processing:</u>

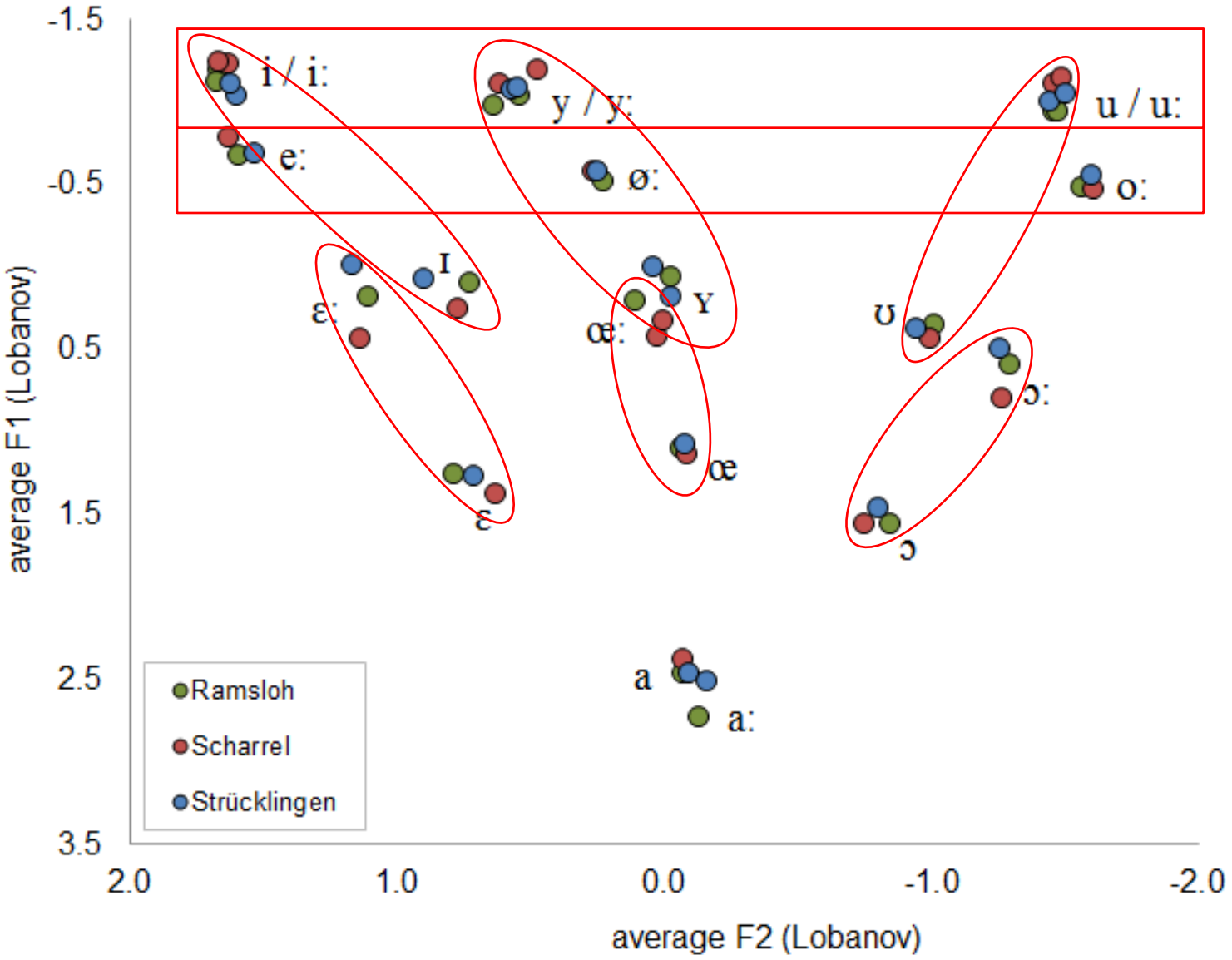
- linear mixed effect models
- dependent variables: duration, F1/F2 at 20%, 50%, 80%, amount of VISC, spectral rate of change

Mergers

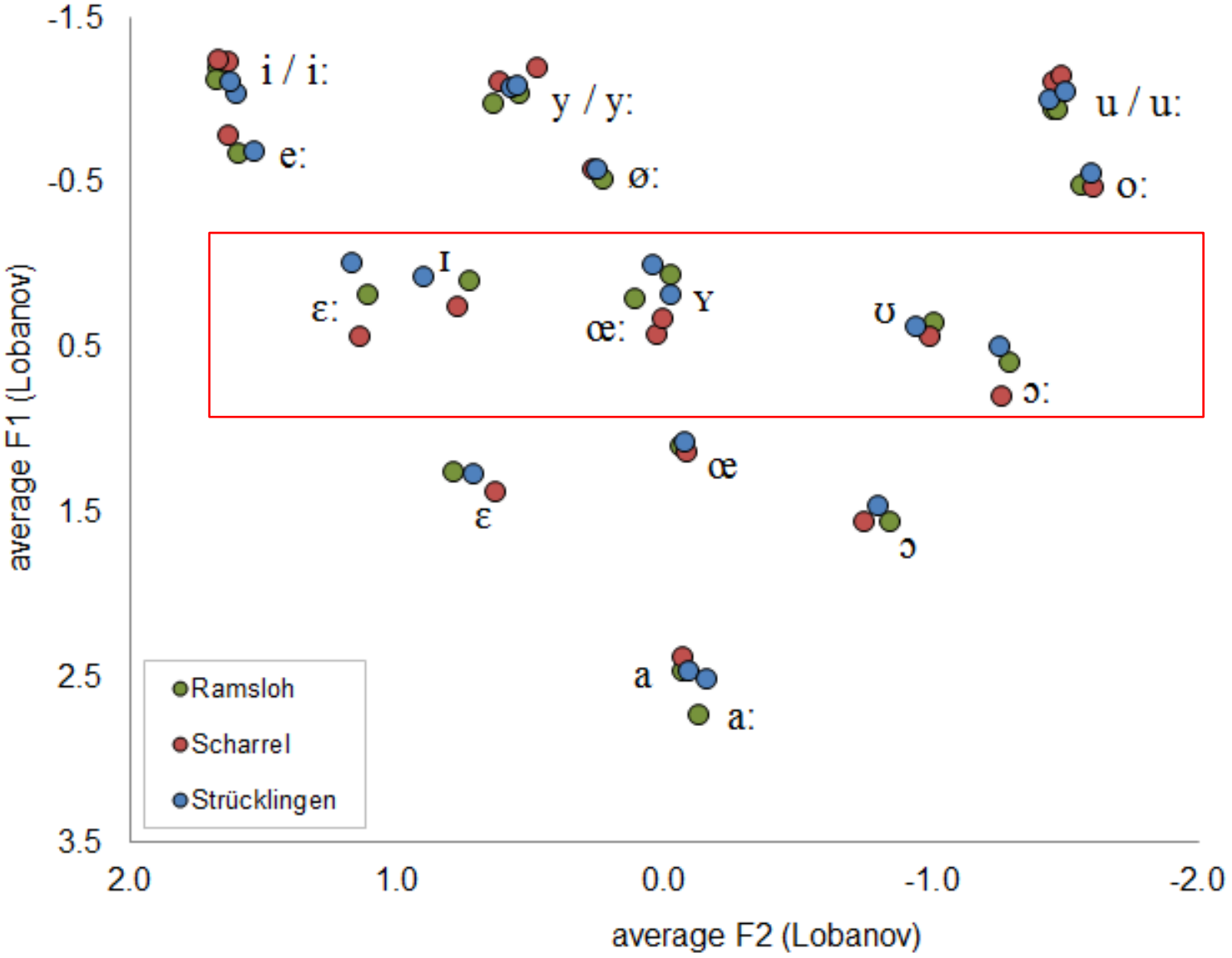
	monophthongs merged	diphthongs merged	vowels not elicited
Scharrel	/i/-/iː/ /y/-/yː/ /u/-/uː/	/ɪu̯w/-/iu̯w/	/aː/ /yːi̯/, /uːi̯/
Strücklingen	/i/-/iː/ /y/-/yː/ /u/-/uː/	/ɪu̯w/-/iu̯w/ /ɪu̯w/-/iːu̯w/	/yːi̯/, /uːi̯/
Ramsloh	/i/-/iː/ /y/-/yː/ /u/-/uː/	/ɪu̯w/-/iu̯w/ /iːu̯w/-/iu̯w/ /ɛu̯w/-/ɛːu̯w/ /oːi̯/-/ɔːi̯/	/yːi̯/, /uːi̯/

- closed tense vowels have merged → twofold distinction of lax versus tense monophthongs
- merger of /ɪu̯w/ and /iu̯w/ in all varieties
- Ramsloh shows most mergers

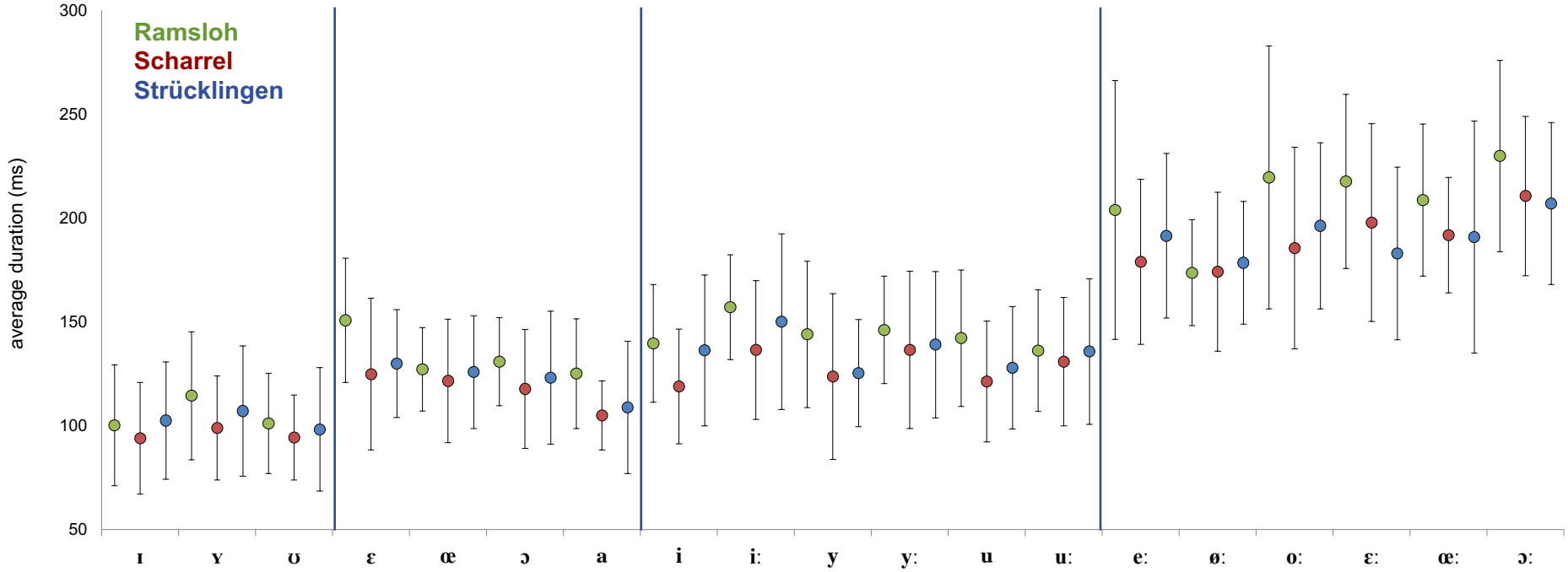
Monophthongs



Monophthongs – Regional Variation

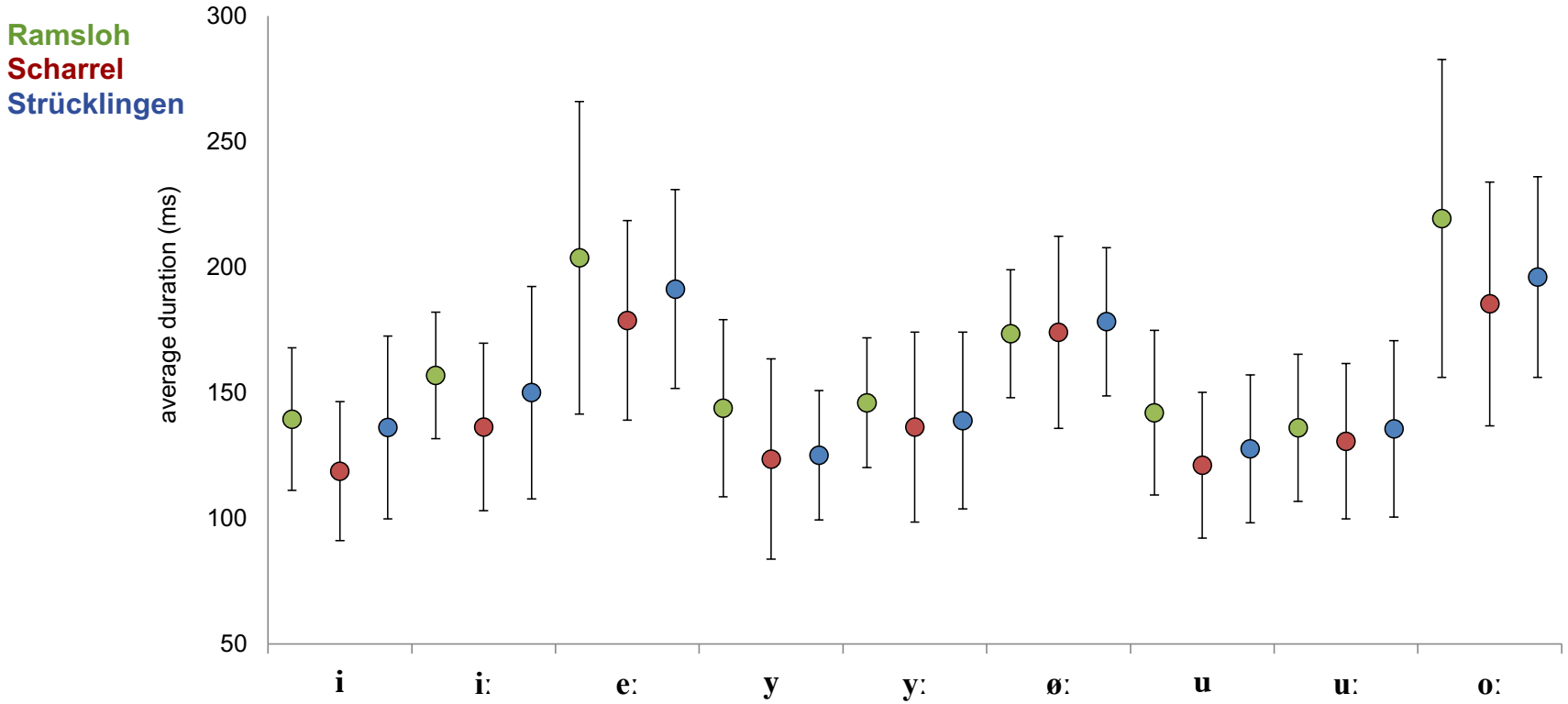


Monophthongs - Duration



- durational distinction between phonologically short and long monophthongs
- transition from short to long consistent with the universal phenomenon of intrinsic vowel duration (Lehiste 1970)
- no cross-dialectal differences in vowel duration

Monophthongs - Duration

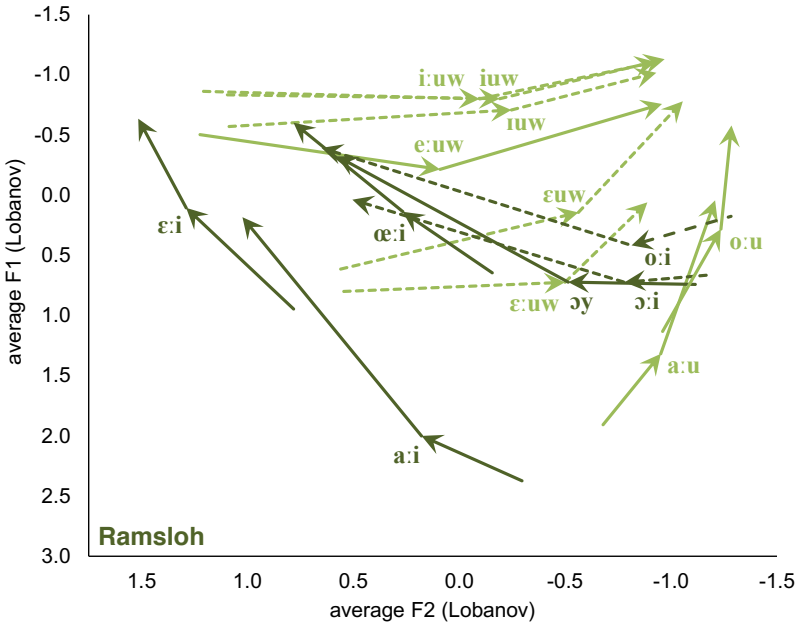


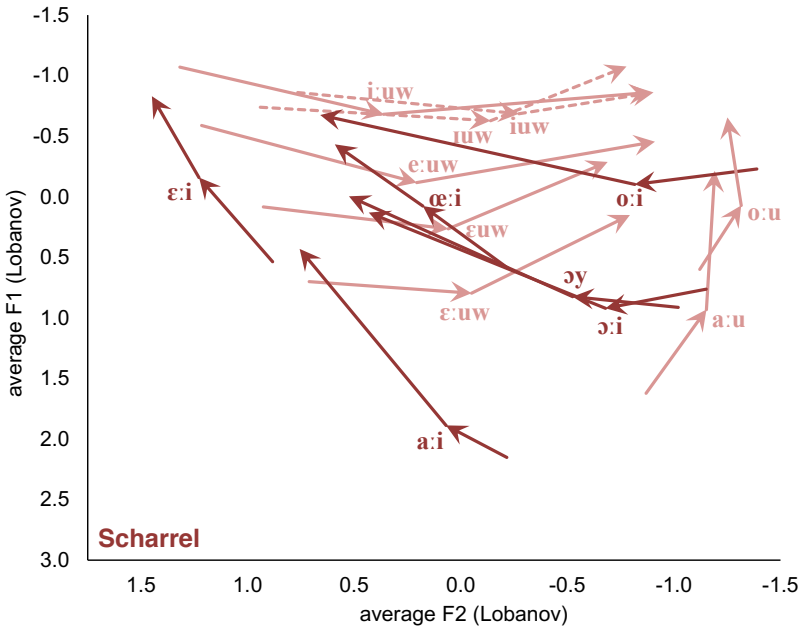
- F1 difference of /i: y: u:/ and /e: ø: o:/ is accompanied by a significant difference in acoustic vowel duration (except for /y:/-/ø:/ distinction in Ramsloh)

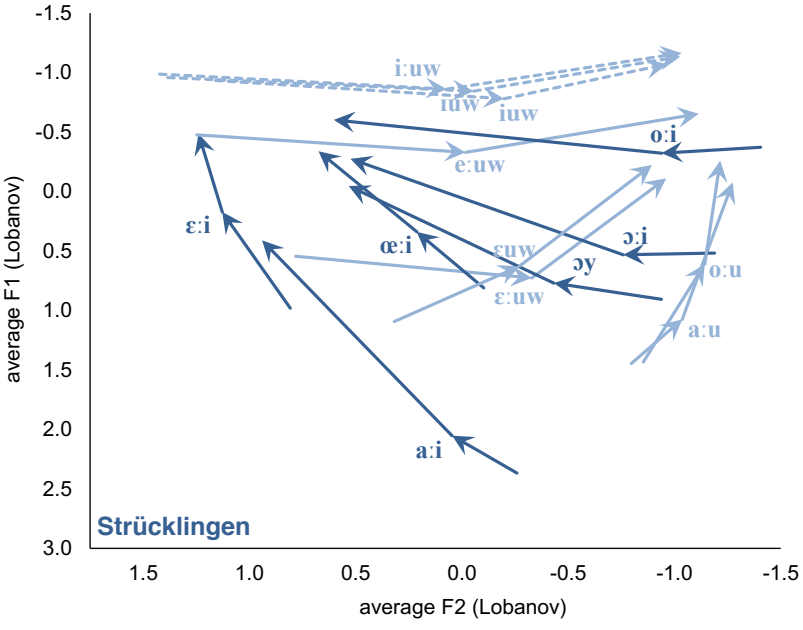
→ may reflect a tendency of Saterland Frisian to exploit the phenomenon of intrinsic vowel duration as an enhancing factor (cf. Bohn 2004)

Diphthongs – Regional Variation

- different mergers for the varieties
- Scharrel showed sign. lower F1 onset values (all diphthongs)
- no consistent pattern of qual. differences in comparison of single categories
- no durational differences







Dynamic Spectral Features

Monophthongs

no regional differences in the cross-dialectal comparison of dynamic spectral features

Diphthongs

regional differences in the cross-dialectal comparison of mean trajectory lengths: the least VISC in Scharrel diphthongs

Conclusion

(1) Inventory and possible mergers

- complex inventory but not all categories obtained: /aː/, /uːi/, and /yːi/
- merger of /i y u/ with /iː yː uː/
- differences in the number of diphthongs: Ramsloh shows the most mergers

(2) supplementary acoustic dimensions that support vowel distinction

- dynamic spectral cues do not increase vowel differentiation (mirrored by LDA analysis)
- vowel duration as an enhancing factor among high tense vowels (cf. Bohn 2004)
- f0 might contribute to vowel distinction

(3) regional variation

- Scharrel deviates the most:
  → mid-closed monophthongs more centralized in F1
  → shorter mean trajectory lengths for diphthongs
- perceived temporal differences not accounted for by our data
- difference in dispersion within vowel spaces of regional varieties

Thank you!

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