Max Planck Institute
for Evolutionary Anthropology

UNIVERSITY OF AMSTERDAM

VolkswagenStiftung

DOBES

On developments in the vowel systems of two Even dialects

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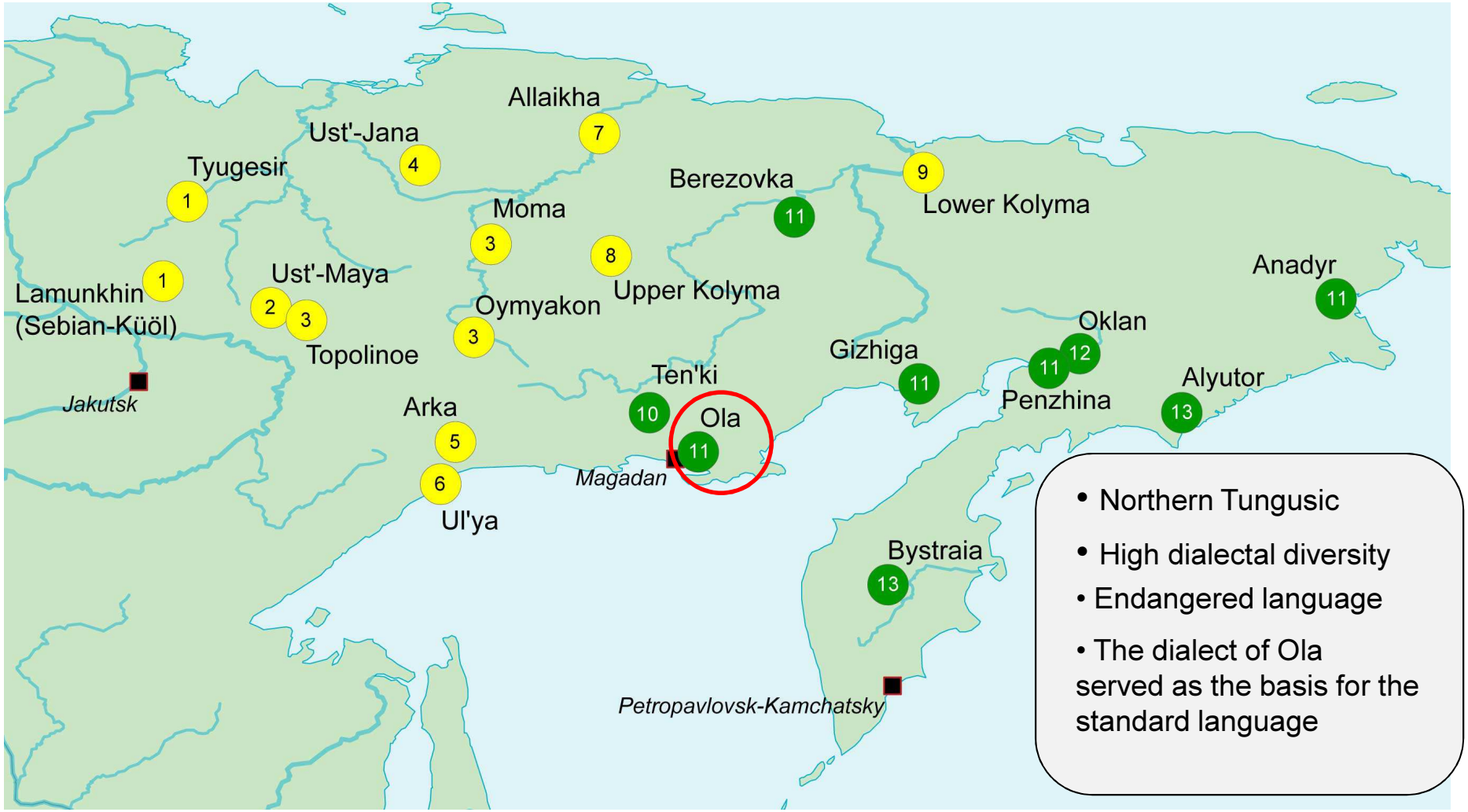
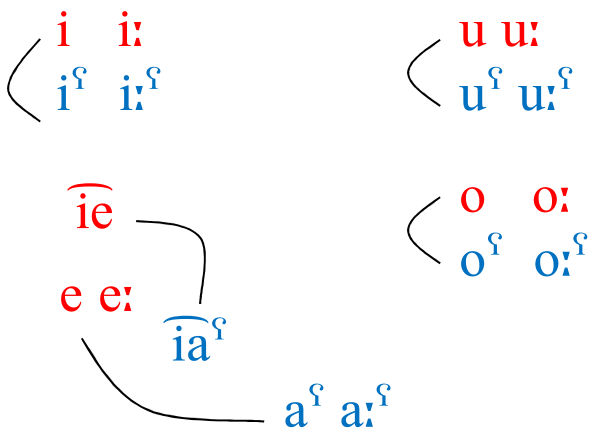
Even: background



Even vowel system

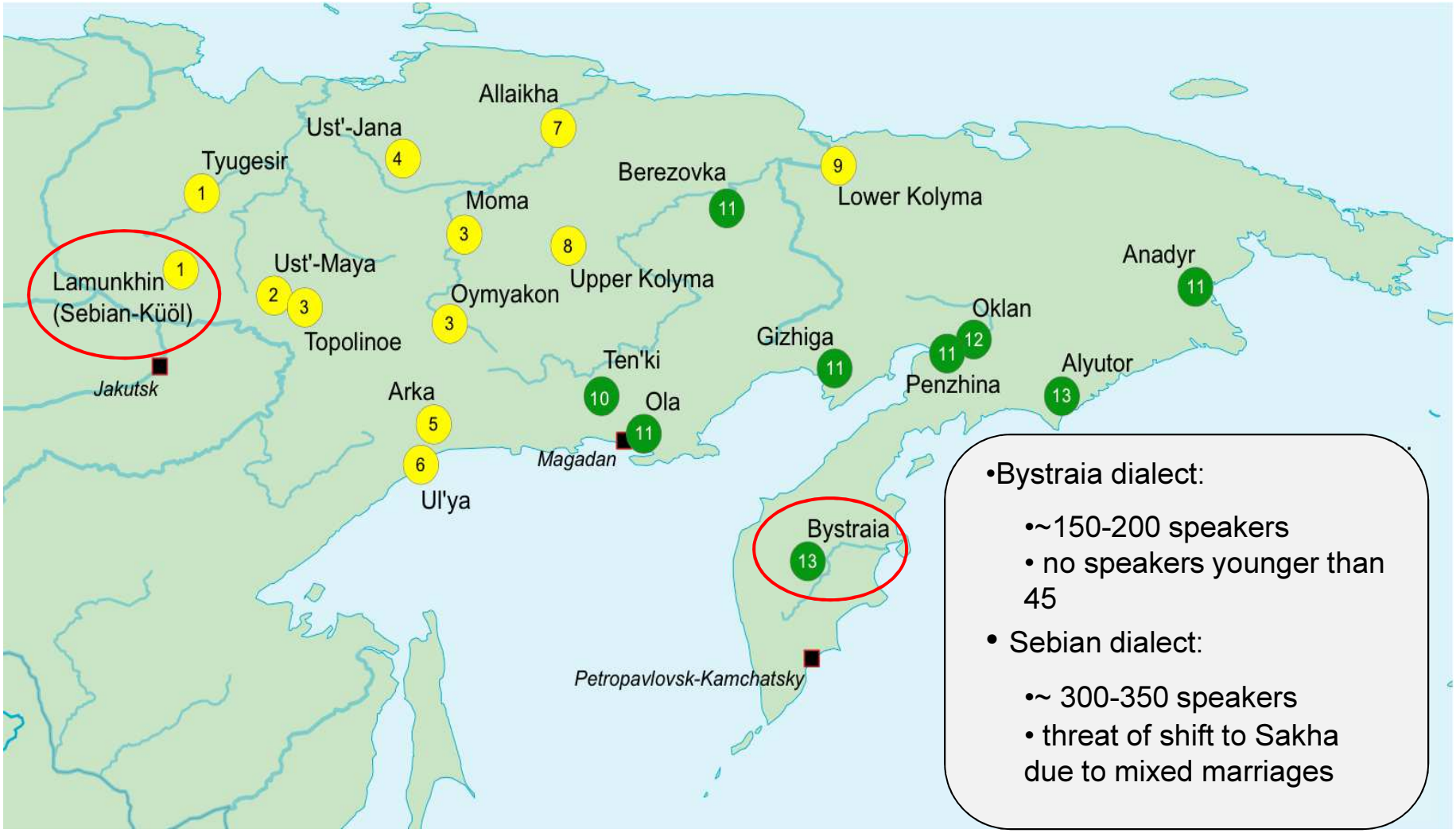
- Novikova (1960): vowels are divided in two vowel sets opposed by pharyngealization (in Ola Even)



- The opposition is realized as root-controlled vowel harmony: /moːle/ ‘in the water’ - /moːˤla/ ‘in the tree’

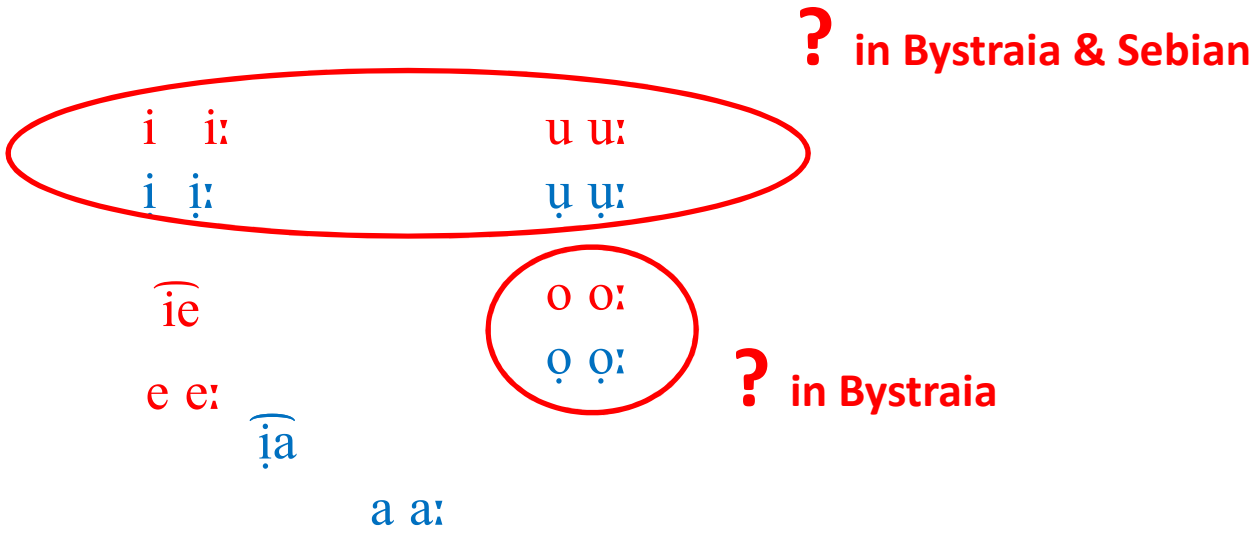
- Later studies re-interpreted the opposition as ATR/RTR (Ard 1980) which is now broadly accepted for Tungusic languages (Li 1996, Kim 2011, Ko 2012).

Sebian Even & Bystraia Even



Research question

- What are the vowel oppositions and the nature of the feature underlying vowel harmony in the dialects under investigation?



Methods

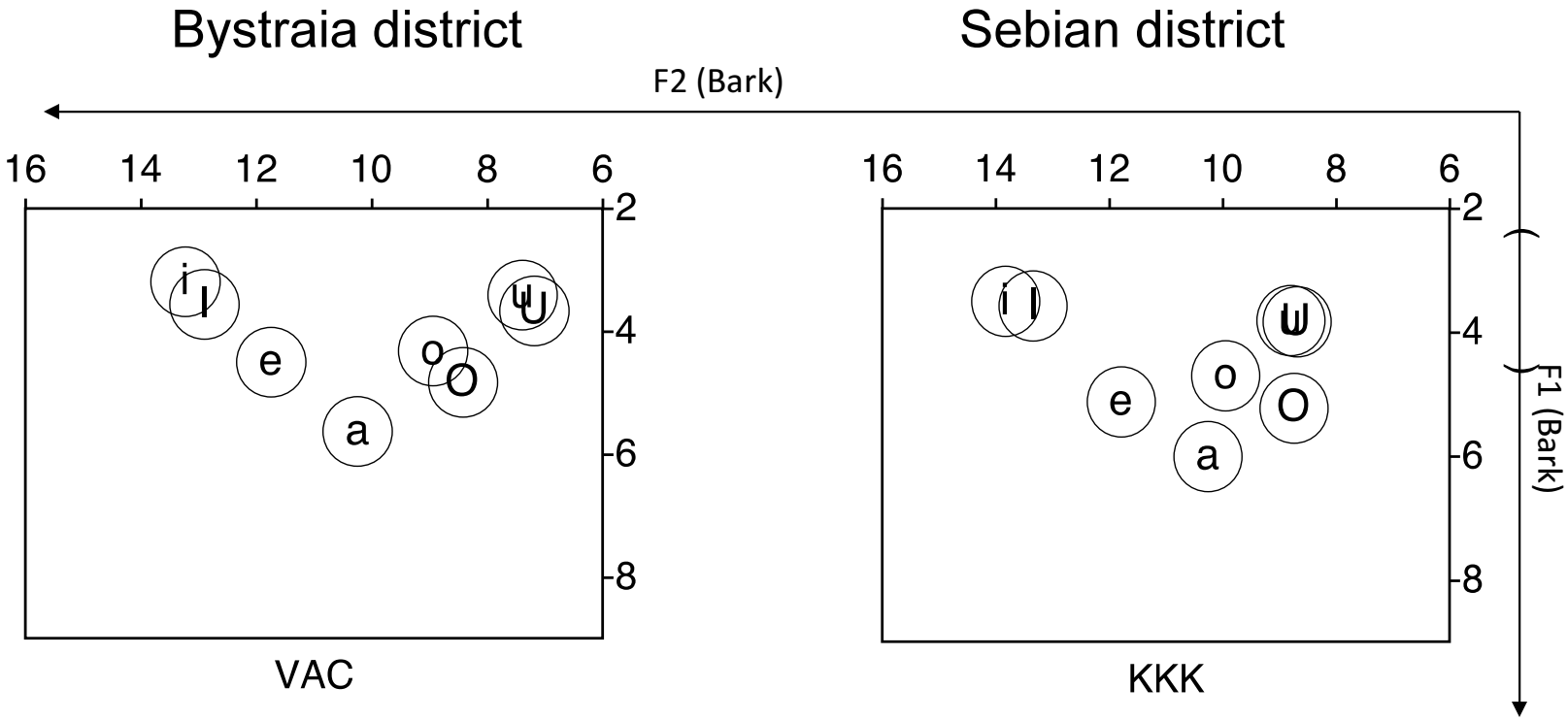
- Acoustic study
  - The overall configuration of vowel space
  - Parameters responsible for ATR/RTR vowel opposition
- Perception study
  - Minimal and quasi-minimal pairs presented to the speakers

Acoustic study: parameters investigated & settings

- F1, F2, F3, spectral slope (A1-A2), duration

- Two male and two female speakers for each dialect
- 63 words for the Bystraia dialect and 76 words for the Sebian dialect
- recorded in isolation and within a carrier phrase (3 times in each context)
- 3367 tokens in total (only monophthongs)

Acoustic study: results



Male speakers

e, i, u, o stand for "+ATR" vowels; a, I, U O stand for "-ATR" vowels

Acoustic study: results

- Vowels overlap a lot in the acoustic space
- However, both in the Bystraia dialect and in the Sebian dialect F1 turned out to be significantly different for vowels of the opposed sets (with one exception, see next)
- Acoustic merger of the high front vowels /i/ and /i̱/ in the Sebian dialect
- Acoustic measurements do not provide evidence for a consistent +/- ATR feature across dialects (Aralova et al. 2011)

Acoustic study: results

	Bystraia dialect				Sebian dialect		
	front	mid	back		front	mid	back
high	i ɨ		u ụ		ɨ		u ụ
mid	e		o ọ		e	o	ọ
low		a				a	

Perception study

- Basic principle
  - Set of minimal and quasi-minimal pairs
  - Each subject was presented with the recording of one member of the pair and two translations
  - Forced choice
- 18 subjects in Bystraia and 9 subjects in Sebian

Perception study

- Example of the stimulus

- to reach

- to tear off

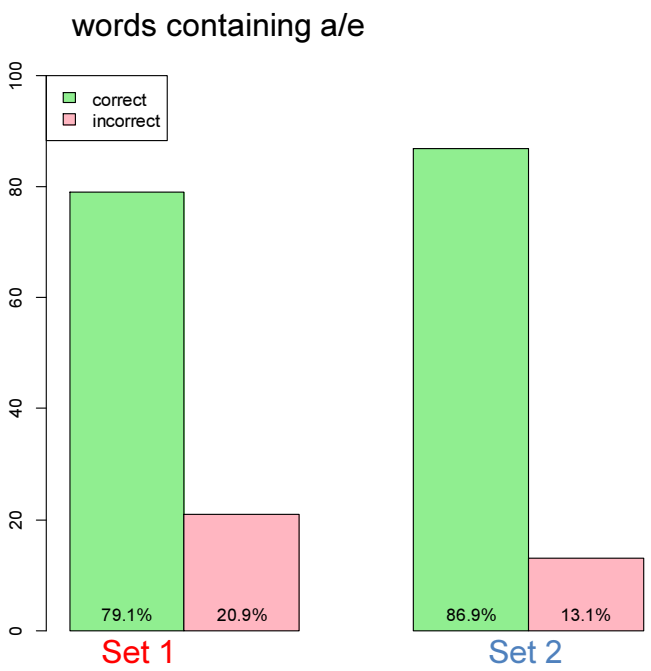
to reach

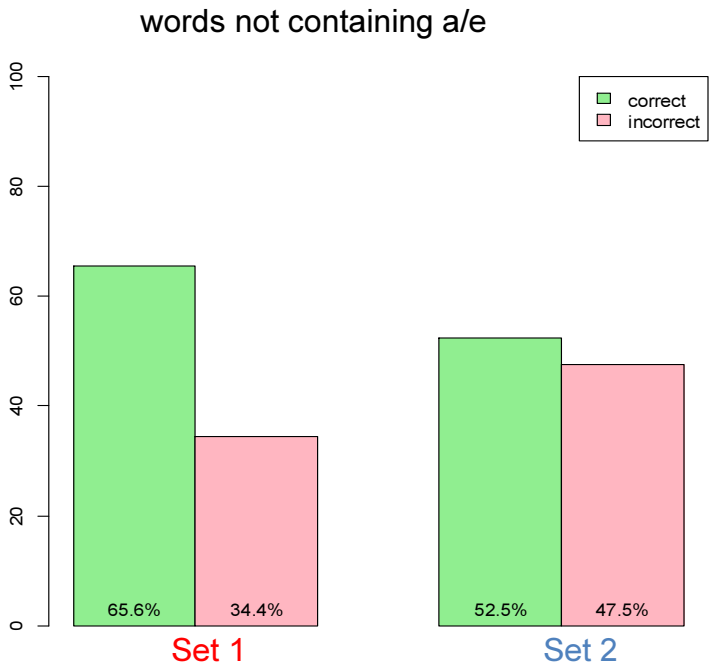
the correct answer is:

Tear off

Perception study: results

- Different results for words containing a/e and not containing them
- In both dialects, recognition of words with only high vowel is problematic

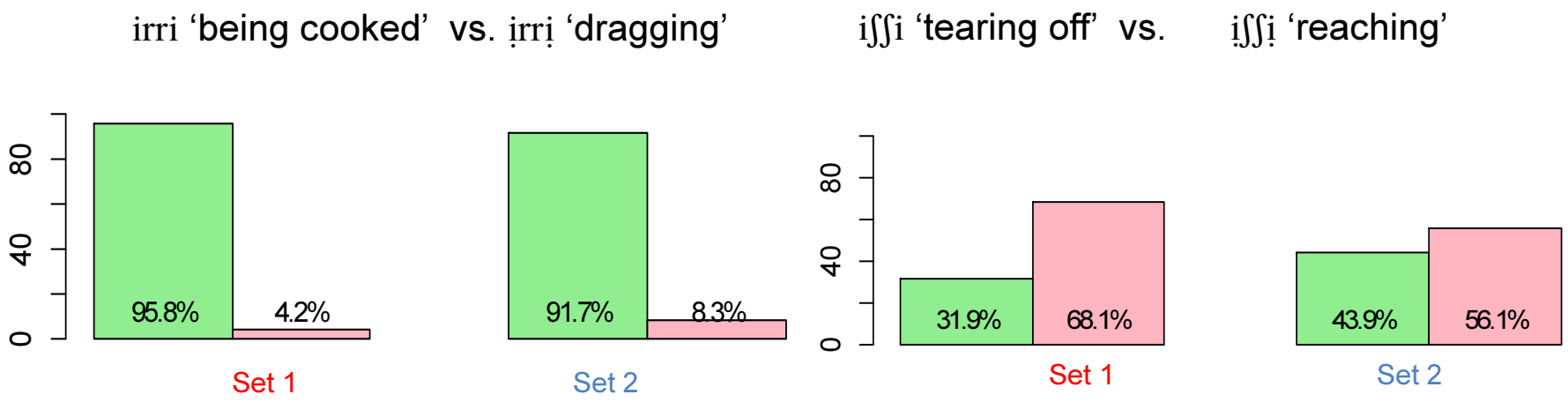




Sebian

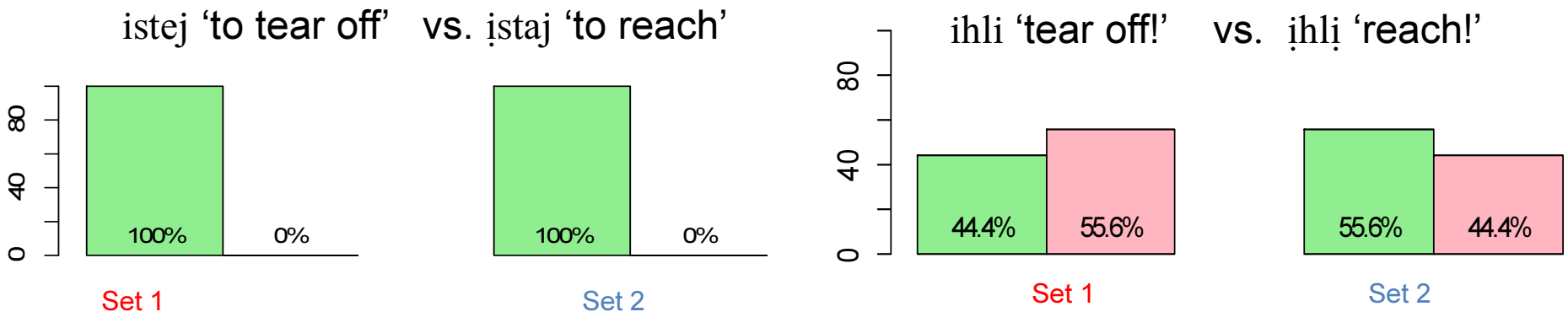
Perception study: results

- Bystraia:
  - words containing only high vowels not recognized
  - some consonantal cues enable better recognition:



Perception study: results

- Sebian:
  - words containing only high vowels not recognized
  - no consonantal cues



Perception study: results

	Bystraia dialect				Sebian dialect		
	front	mid	back		front	mid	back
high	i		u		i		u
mid	e		o		e	o	ọ
low		a				a	

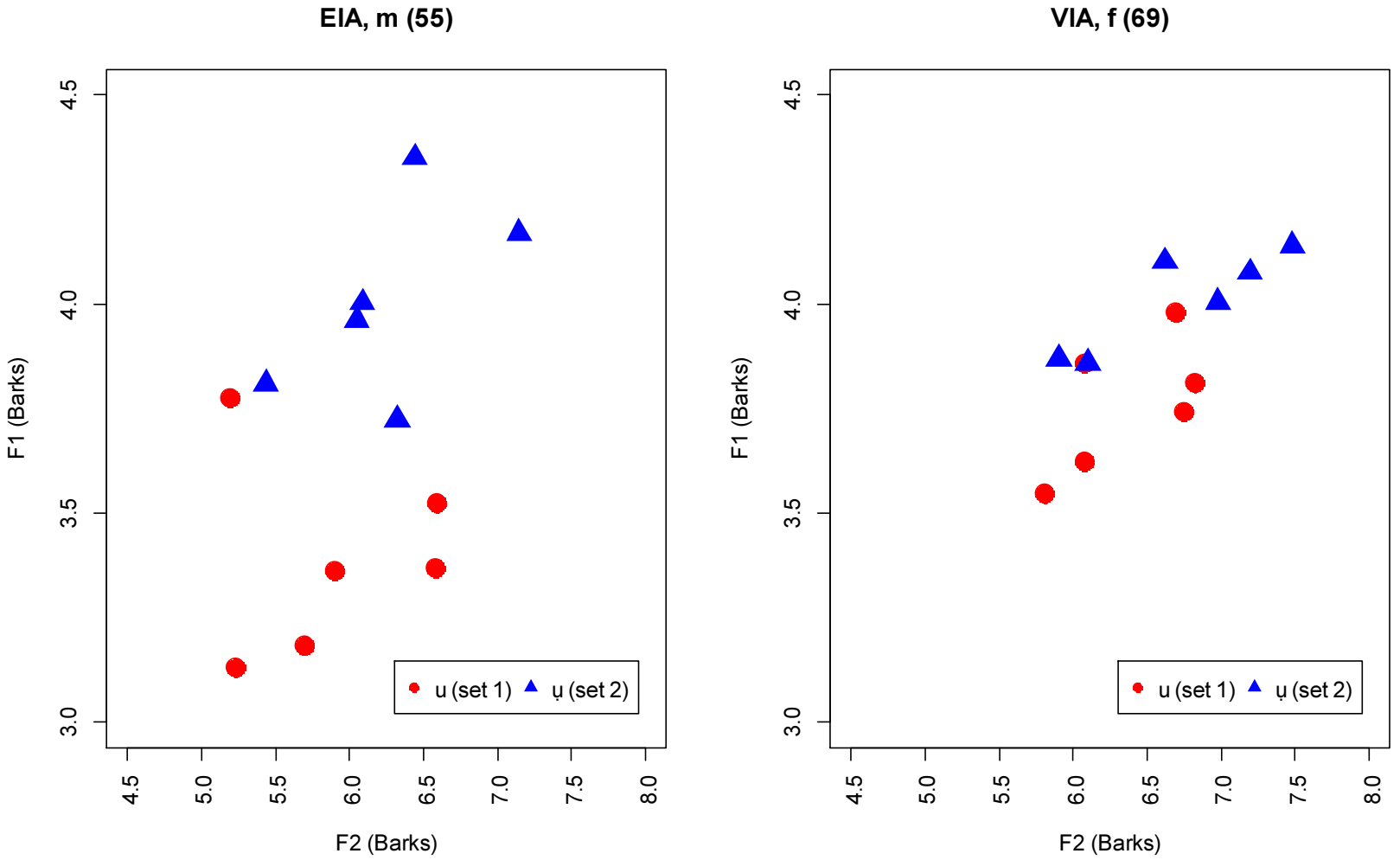
Contradiction

- Despite the consistent difference in F1, perceptual data provide evidence for the merger of of high vowels of different sets in i/i̱ and u/u̱

Solution

- The phenomenon of a near-merger
- Labov et al. (1972) : words perceived as the same showed a statistically significant difference in the pronunciation of their vowels
  - minimal pair test (acoustic measurements + speaker's intuition)
  - commutation test (perception test)
- Near-mergers might develop into full mergers

Applying Labov's methodology to Even data



F1/F2 distribution for the first vowel /ujun/ 'nine' and /u̟ju̟n/ 'ford a river'

Applying Labov's methodology to Even data

EIA's responses to his own stimuli		
	correct	incorrect
set 1 ujun	0	1
set 2 ụjụn	1	0
responses of the others to EIA's stimuli		
set 1 ujun	7	10
set 2 ụjụn	16	1
EIA's responses to VIA's stimuli		
set 1 ujun	1	0
set 2 ụjụn	1	0

VIA's responses to her own stimuli	
correct	incorrect
0	1
1	0
responses of the others to VIA's stimuli	
9	8
12	5
VIA's responses to EIA's stimuli	
1	0
1	0

Applying Labov's methodology to Even data

- Strong variation between the speakers, both with respect to production (some speakers have acoustic mergers) and to the level of perception
- The disagreement in my acoustic results and the results of the perception study can be explained in terms of a near-merger

Further remarks: Bystraia

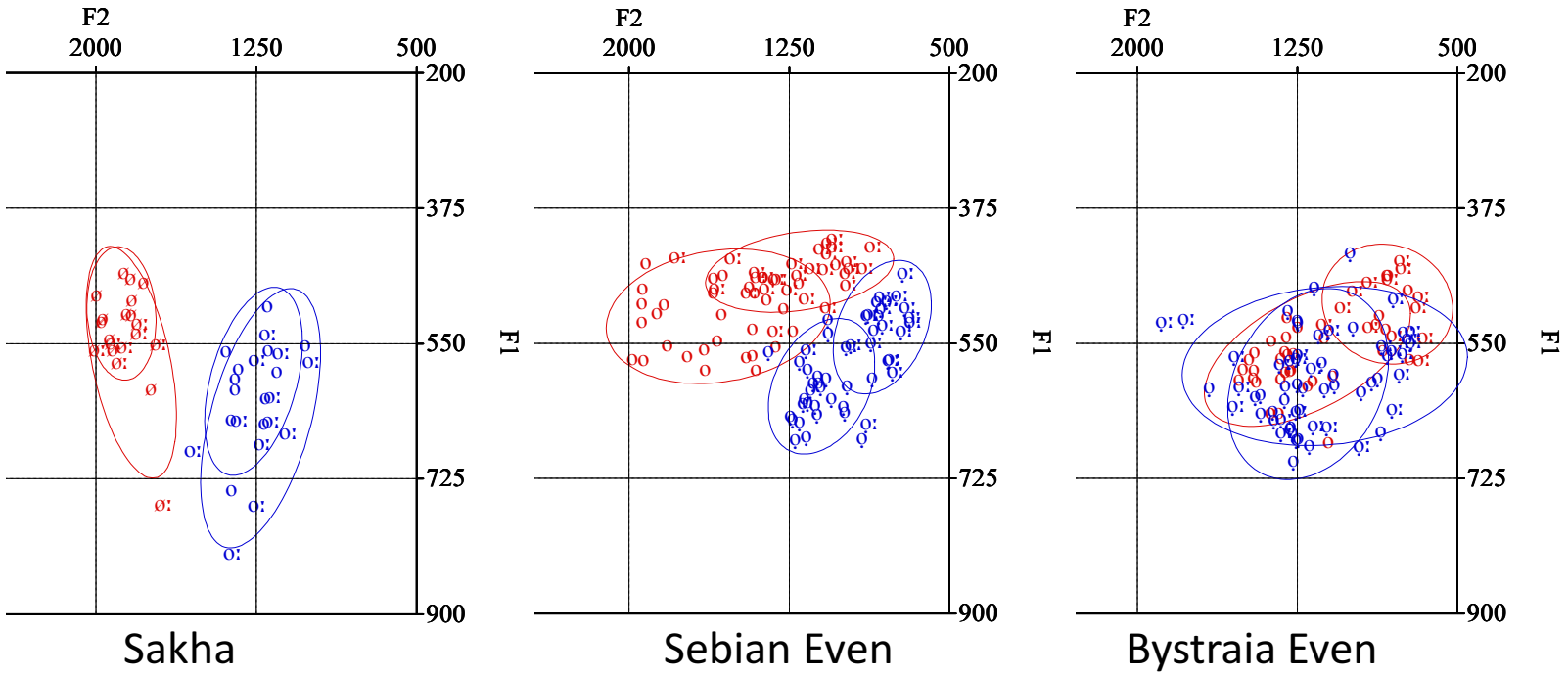
	Bystraia dialect		
	front	mid	back
high	i		u
mid	e		o
low		a	

- Tendency for the loss of vowel harmony
  - reduction of vowel oppositions
  - strong vowel reduction in non-first syllables → no opposition in affixes
  - confusion of the diphthongs i͡e/i͡a: [iakə] ~ [iekə] ‘pot’
  - consonantal cues play an important role for the discrimination between words

Further remarks: Sebian

- Fronted set 1 /o/
- Supported by this opposition in Sakha?

	Sebian dialect		
	front	mid	back
high	i		u
mid	e	o	o̞
low		a	



Conclusions

- Restructuring of the vowel harmony systems in both dialects:
  - Clear opposition is kept only for e/a, o/ọ and ie/ịa in Sebian
  - Tendency towards loss of the vowel harmony and development of consonantal cues in Bystraia
  - In both dialects the suffix alternation is partly lexically specified

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