

Gender and vowel shifts in Tsat: structural and social forces

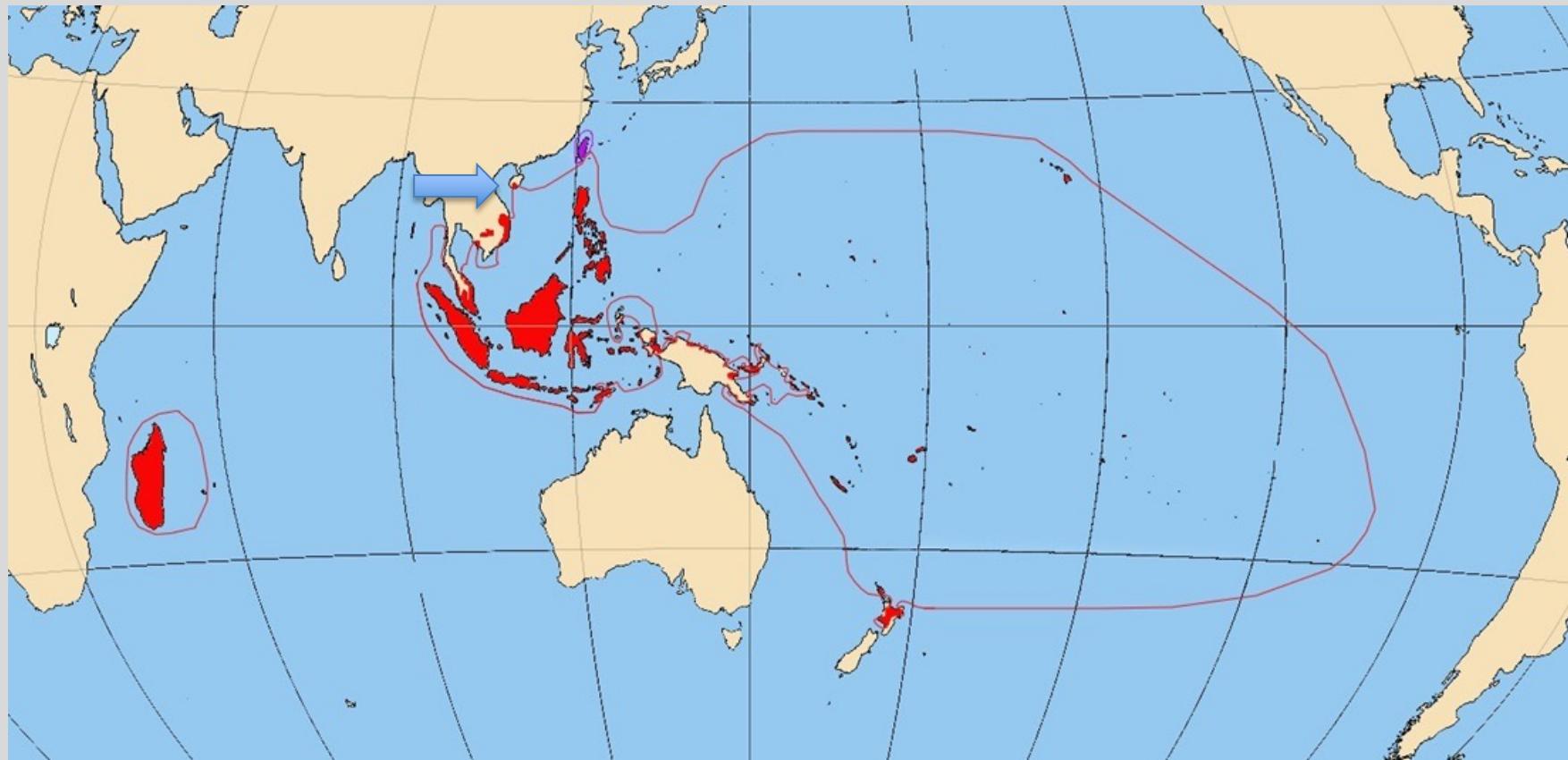
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For this presentation

- typological background
- vowel system of Tsat
- pivot of change: fronting of long /-a:-/
- systematicity of vowel shifts
- the role of gender in sound change

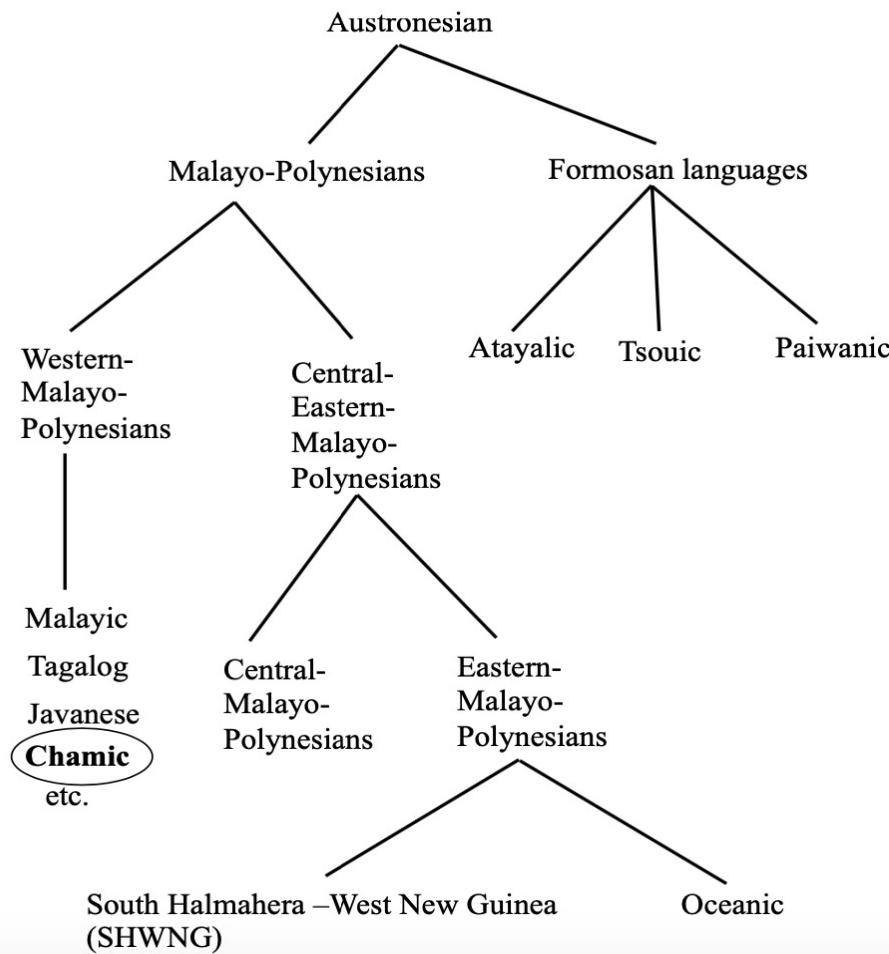
A “neglected” Austronesian language



A “neglected” Austronesian language



Austronesian language family



- A (Northern) Chamic language within the Malayo-Polynesian branch of Austronesian
- a non-native language: historical migration of Chamic speakers from Champa (modern Vietnam)

Austronesian language family

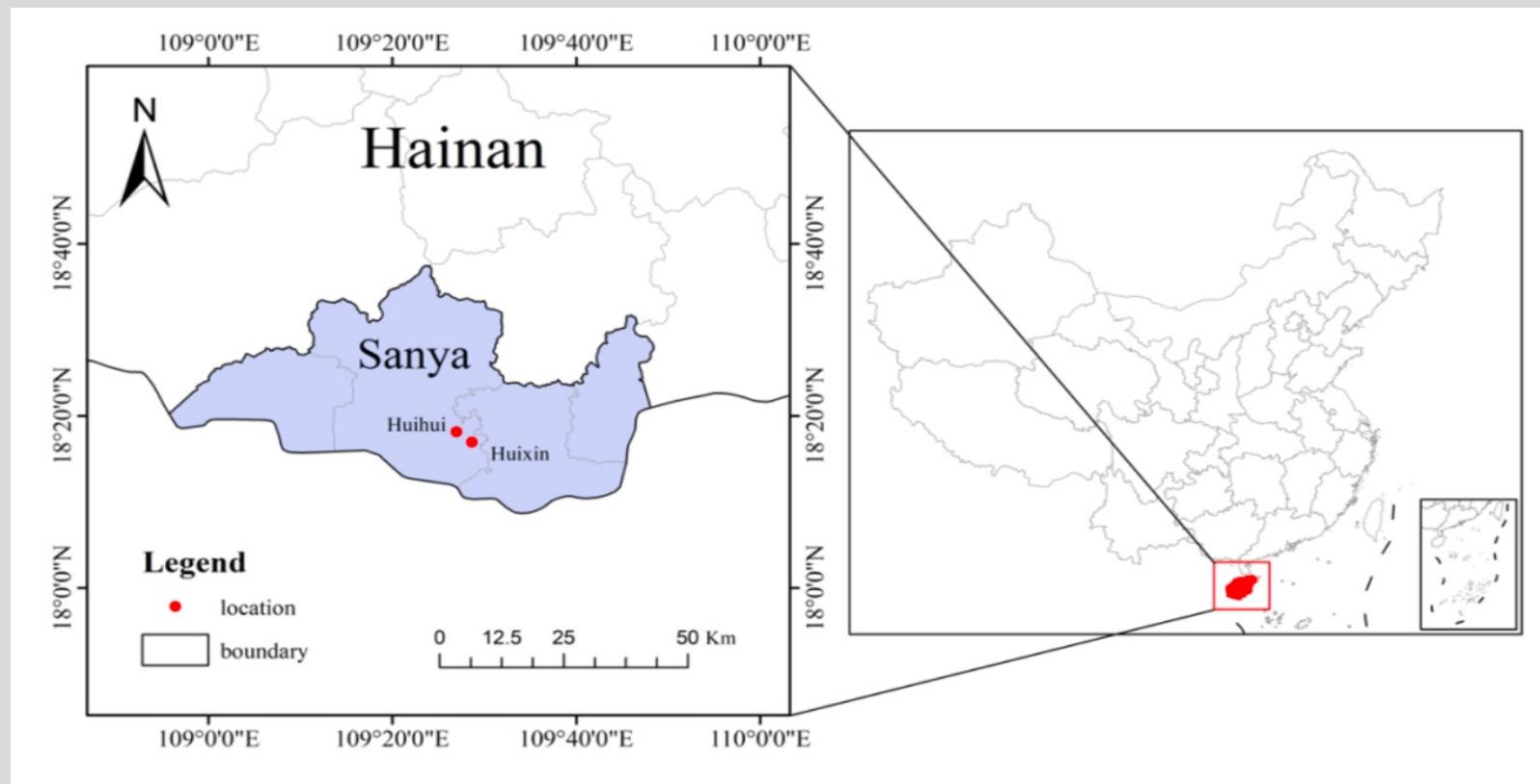
Tsat	Indonesian	English translation
ŋin ³³	<u>anin</u>	‘wind’
ma ³³	<u>huma</u>	‘field’
ŋa ²¹	<u>buna</u>	‘flower’

Table 1: cognates between Tsat and Indoesian (2nd syllables): adapted from (Ni, 1988)

Tsat	Indonesian	English translation
sa ³³	<u>satu</u>	‘one’
pe ⁵⁵	<u>petik</u>	‘pick (flowers)’
la ⁵⁵	<u>lepas</u>	‘resolve’

Table 2: cognates between Tsat and Indoesian (1st syllables): adapted from (Ni, 1988)

Location of Tsat speech community



- an endangered language: ~ 5,000 speakers

Why Tsat is important?

- For *sociolinguistics*:

Intensive contact and lack of standardization: **LOADS OF** variation and change in the linguistic structures

Classification debate: a genetic dialect of Chamic or a Chamic-based creole?

- Important for theories of language contact, evolution, and emergence (creole genesis)

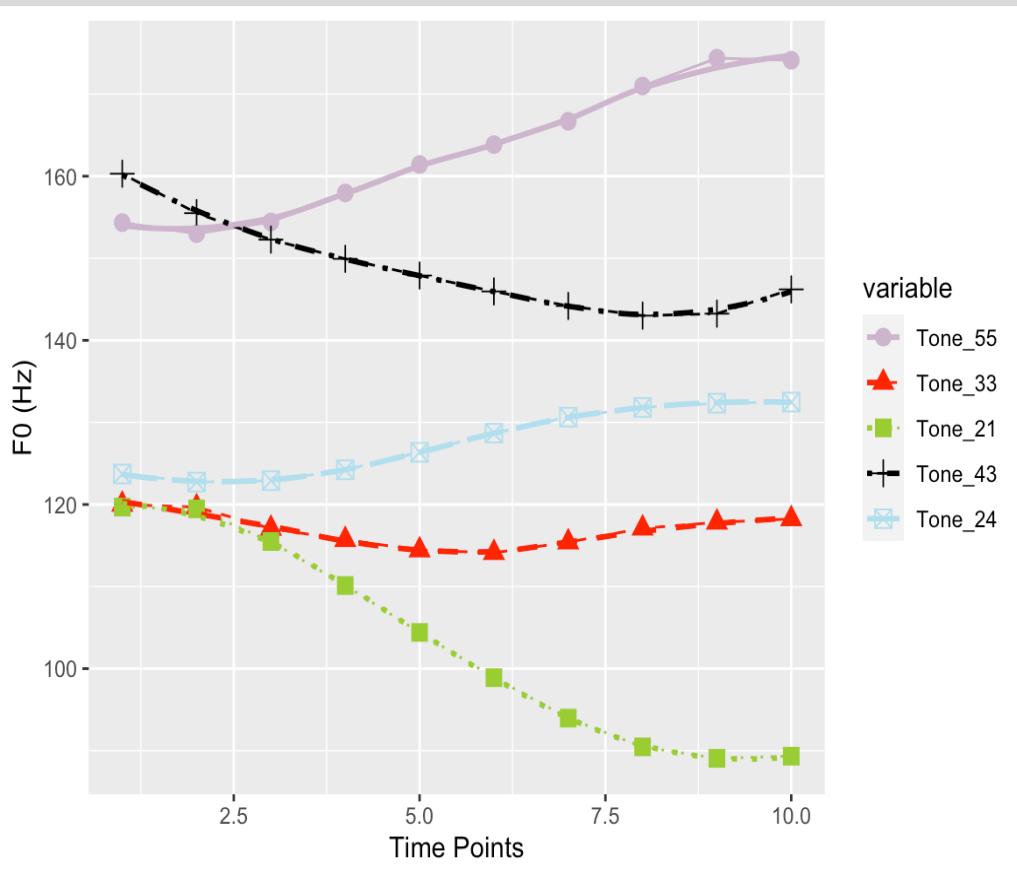
Testing and redefining models of transmission and diffusion (Labov, 2001) in a small indigenous community

- For *linguistic theory*:

Variation and emergence of new forms at all structural levels can test/advance the universality of generative theories and usage-based models of grammar

A case of language emergence: tonogenesis

Due to areal pressure, Tsat developed a fully-fledged tonal system from an atonal source of Proto-Chamic (PC)



- Tone 55: ta⁵⁵ “unripe, raw” 
- Tone 33: ta³³ “long” 
- Tone 21: ta²¹ “blind” 
- Tone 43: ta⁴³ “pillow” 
- Tone 24: ta²⁴ “bean” 

Let's look at the vowels!

Simple Vowels			Diphthongs						Triphthongs		
			UPGLIDING			DOWNGLIDING		INGLIDING			
			Front		Back		Back				
			upgliding		upgliding		downgliding		ingliding		
front	central	back	front	back	front	back	front	back	central		
high	i		u		ʊj			ju		iaj iaw uaj	
mid	e	ə	o		oj			ɪo	ɪə		
low			a(:)		a(:)j		a(:)w	ua	ɪa		

There is **phonemic length contrast** between short /a/ and long /a:/ in certain closed syllables (nasals, glottal stops)

Phonological environment of the contrast

- phonemic length contrast between /-a-/ and /-a:-/:

(i) Preceding nasal codas (-n/ and -ŋ/):

/tan³³/ 'arrive' vs. /ta:n³³/ 'but'

/tʰanj²¹/ 'stand' vs. /tʰa:ŋ²¹/ 'shrimp'

(iv) Preceding the glide /w/:

/zaw³³/ 'tree' vs. /za:w³³/ 'wash'

(ii) Preceding the glottal stop /ʔ/:

/ta?⁴³/ 'pillow' vs. /ta:?²⁴/ 'beans'

(v) Preceding the alveolar /t/:

/pat²⁴/ 'pen' vs. /pa:t²⁴/ 'hold'

(iii) Preceding the glide /j/:

/zaj³³/ 'sunshine' vs. /za:j³³/ 'cotton'

Background of vowel shifts

- /a:/-fronting in pre-nasal contexts (-n/, -ŋ/) by young female speakers (Thurgood, 2014)

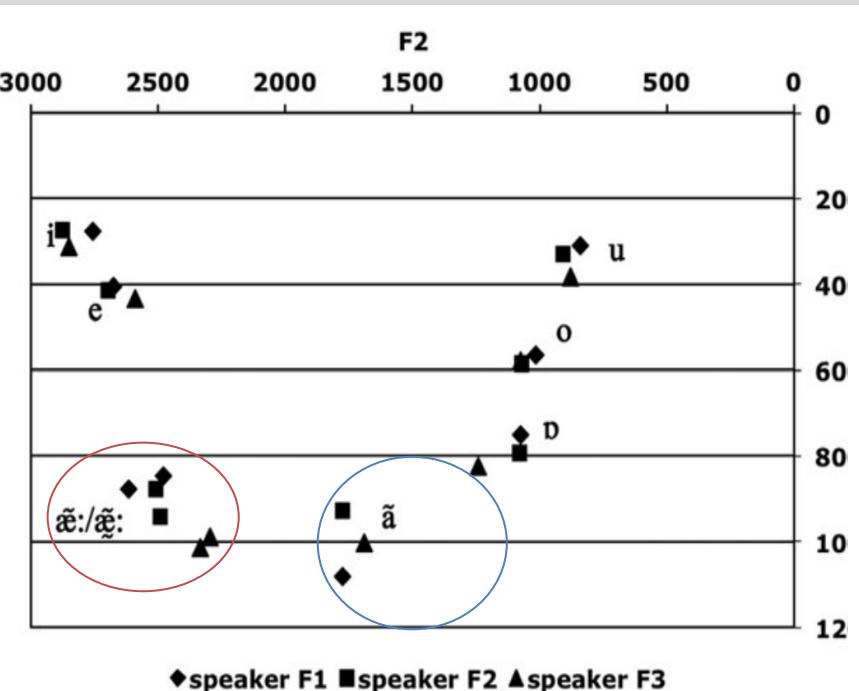


Figure 14: Nasalized /a/ on an oral vowel chart (females)

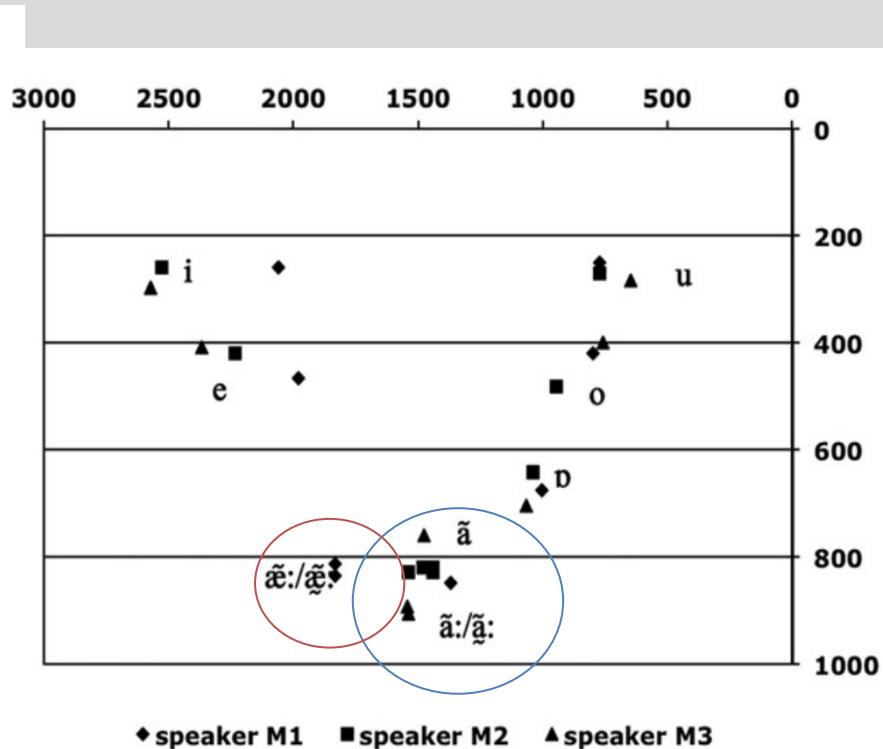


Figure 15: Nasalized /a/ on an oral vowel chart (males)

A month-long fieldwork

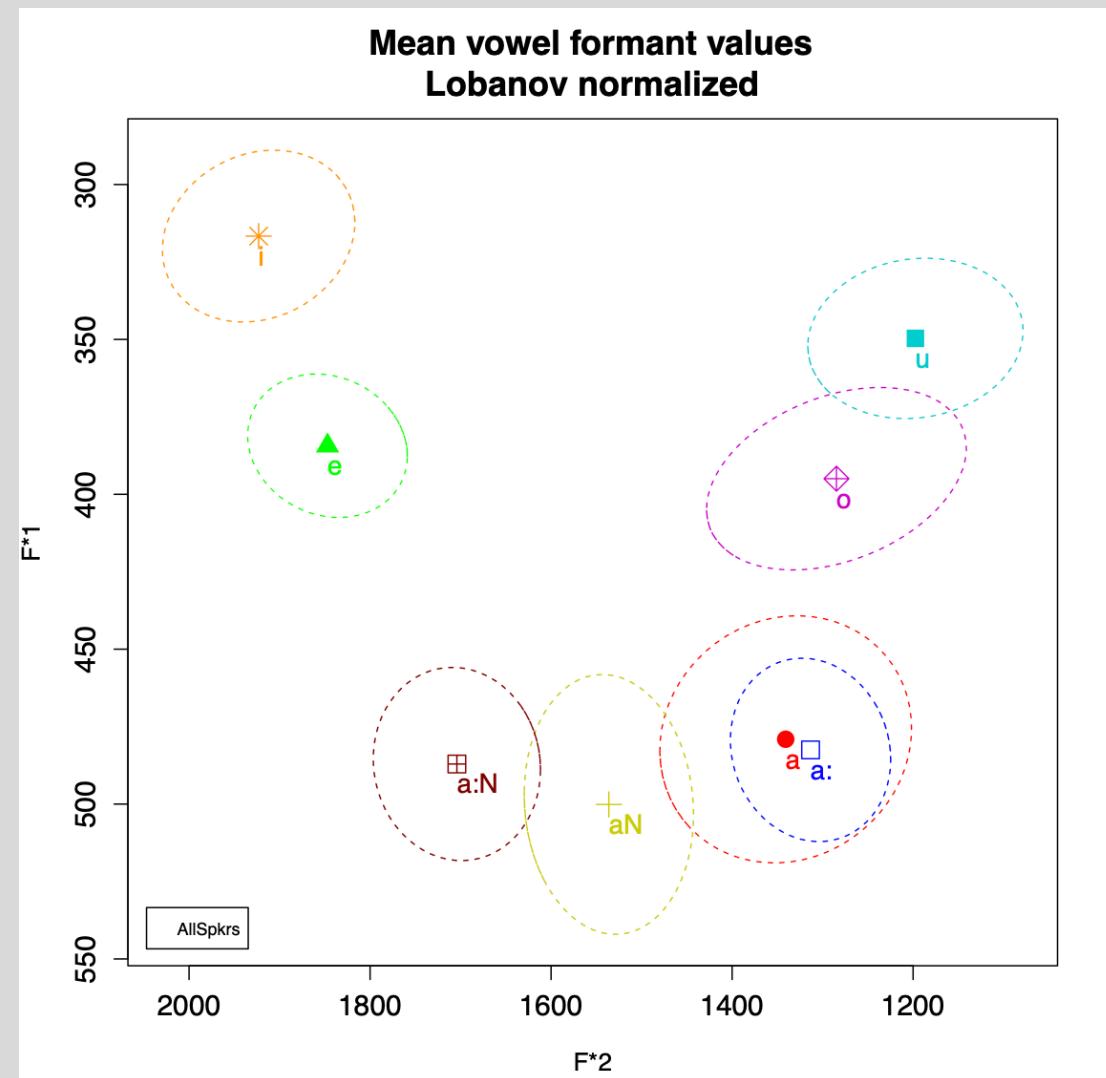


A month-long fieldwork

14 speakers were recruited in the fieldwork

Age Group	Females	Males	Total
Old (YoB: 1961 – 1973)	3	4	7
Middle (YoB: 1980 – 1986)	1	1	2
Young (YoB: 1992 – 1996)	2	3	5
	6	8	14

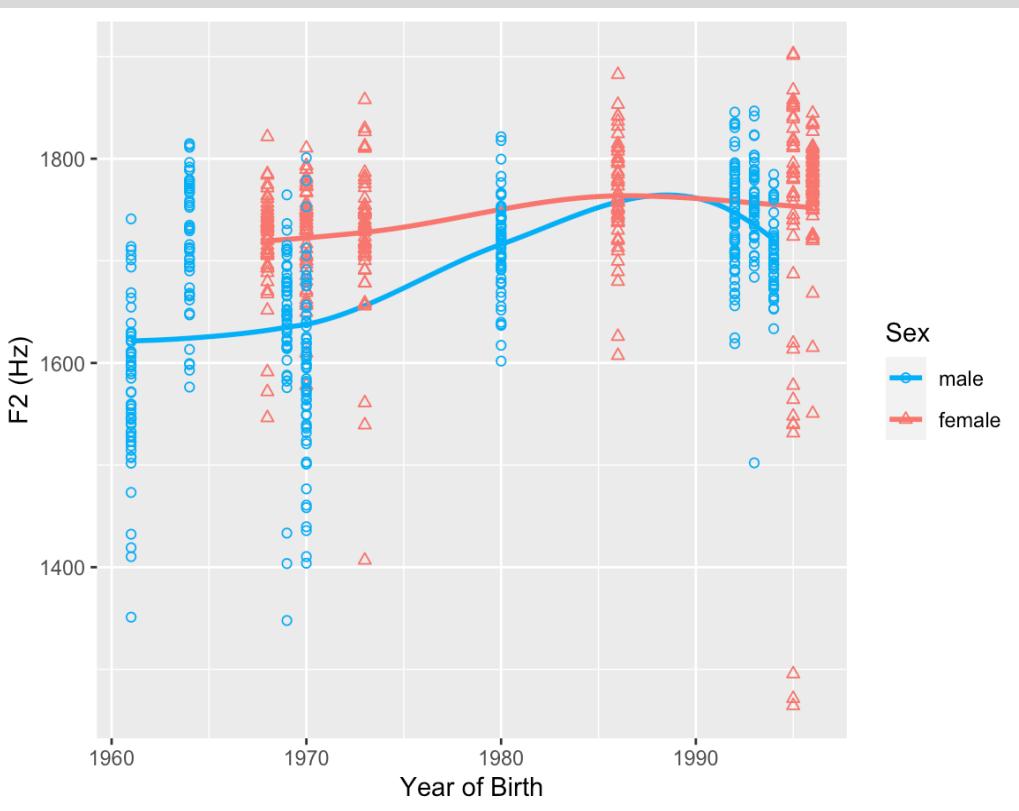
Vowel space of 14 speakers after normalization



/-a(:)-/ is more fronted in pre-nasal context across the community-wide

/-n/ and /-ŋ/ are merged (possibly due to contact)

Fronting of /a:N/



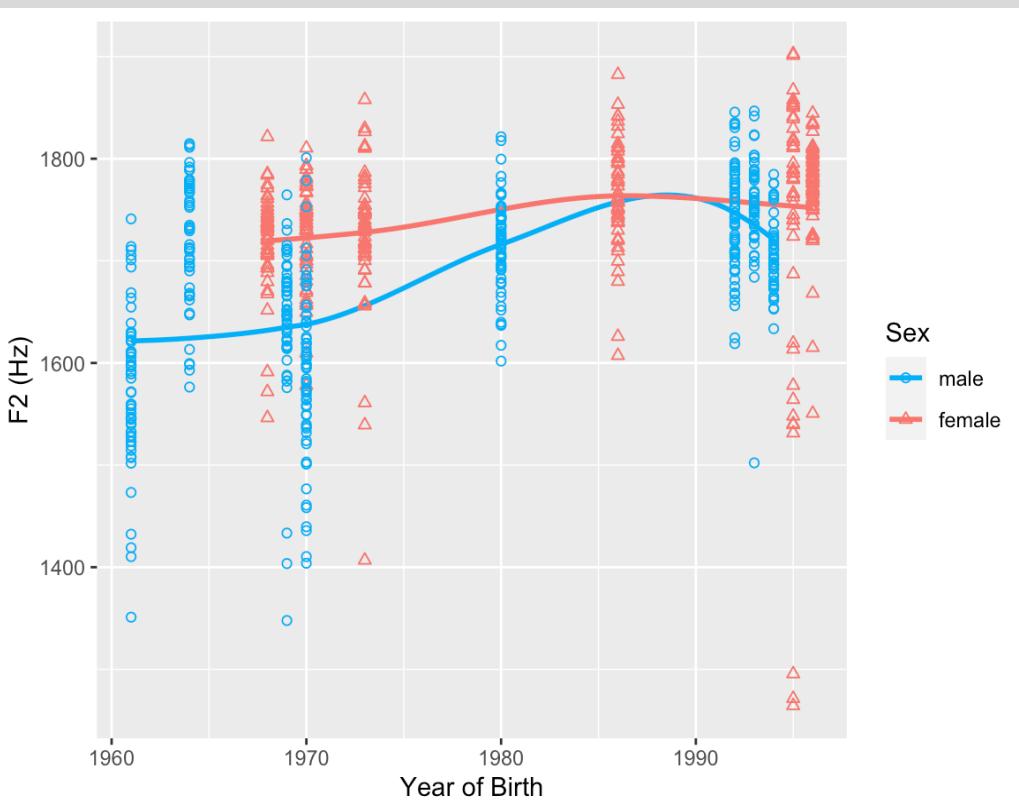
F2 values of /-a:N/

Lmer model in R:

$F2 \sim YoB_centered * gender + (1|speaker) + (1|word_item)$

young ($t = 3.19, p < .01^{**}$) and female ($t = 2.38, p = .04^*$) speakers have higher F2 values

Fronting of /a:N/



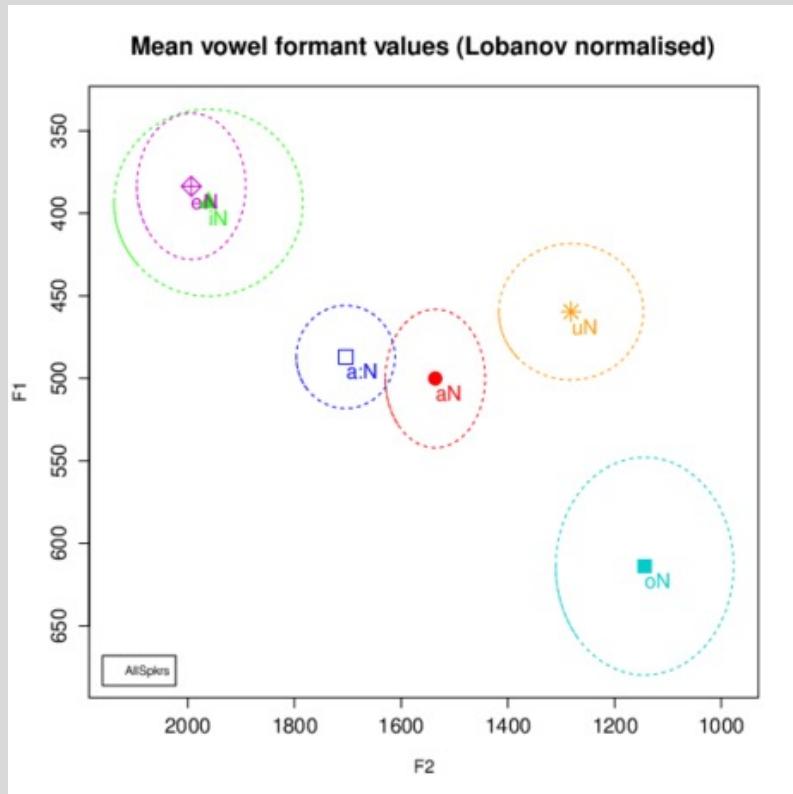
F2 values of /-a:N/

Gender gap is
neutralized after the
1990s

Females as the main
care givers and main
source for children's
language acquisition
(*transmission*)

Systematicity of vowel shifts

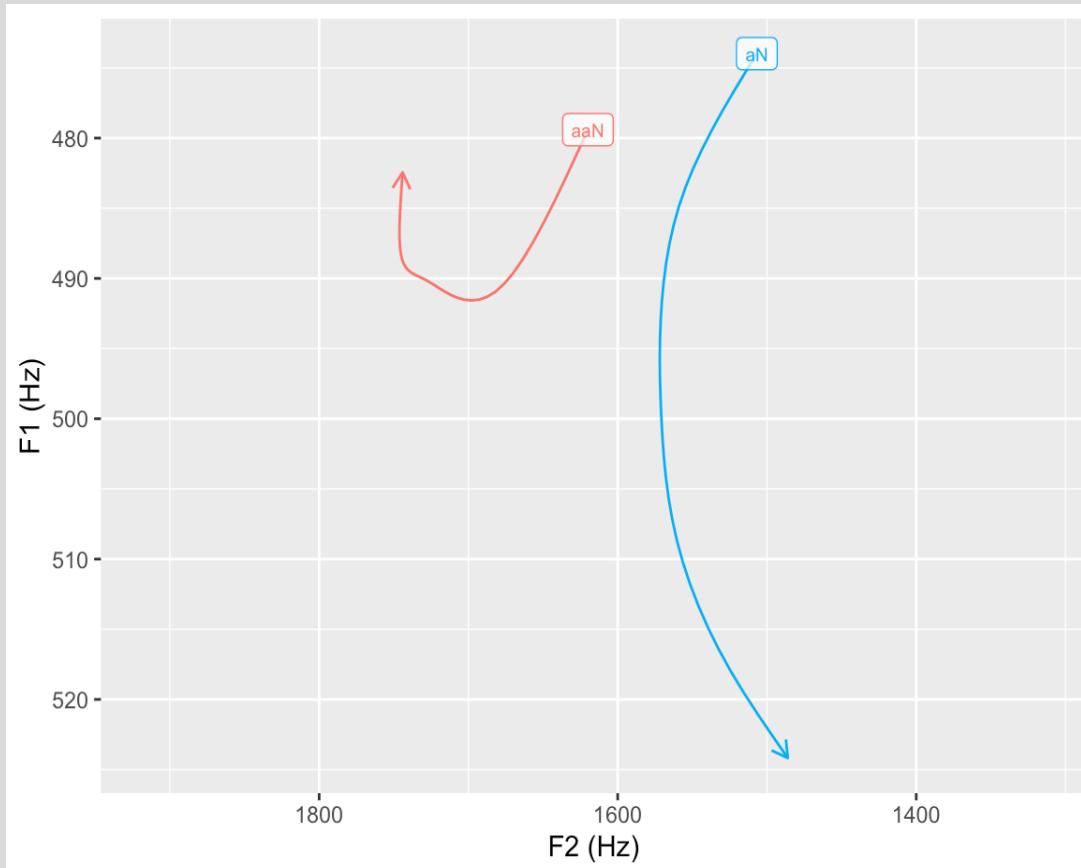
- vowel shifts do not operate in isolation



/i:N/-/eN/ merger due to the pressure coming from the fronting (and potential raising trend) of /-a:N/

the Pillai score (Hay et al., 2006) is 0.038 (near complete overlap)

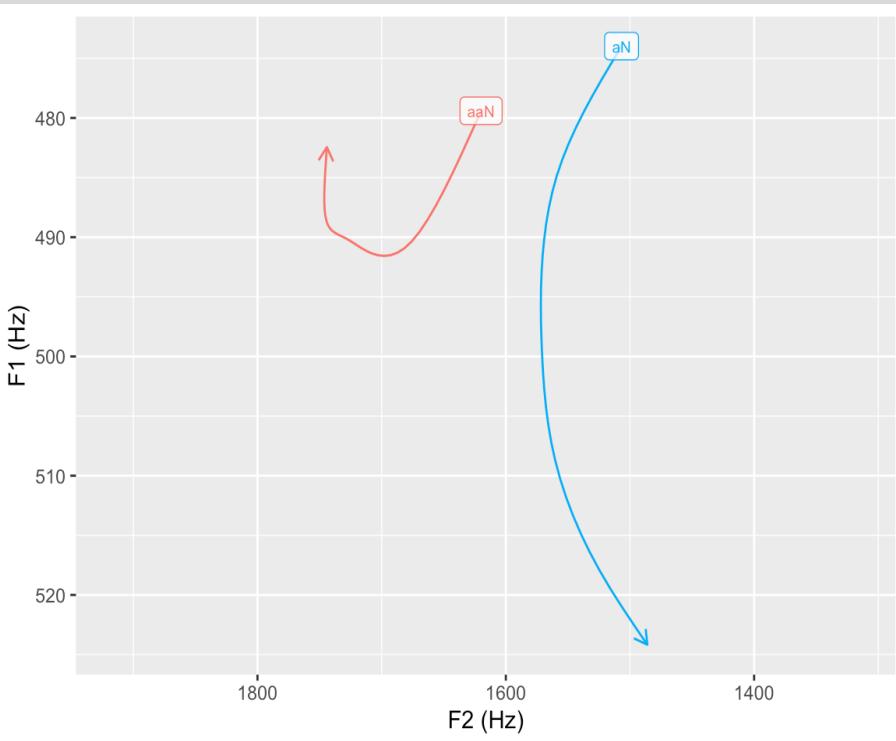
Systematicity of vowel shifts



the short /aN/ undergoes a gradual lowering process as evidenced by the raising of F1 values by YoB ($t = 3.61$, $p = .004^{**}$) without being conditioned by gender

Systematicity of vowel shifts

- vowel shifts can be unified by the contrast hierarchy
(Dresher, 2009)



Vowel formants for /-aN/ and /-a:N/

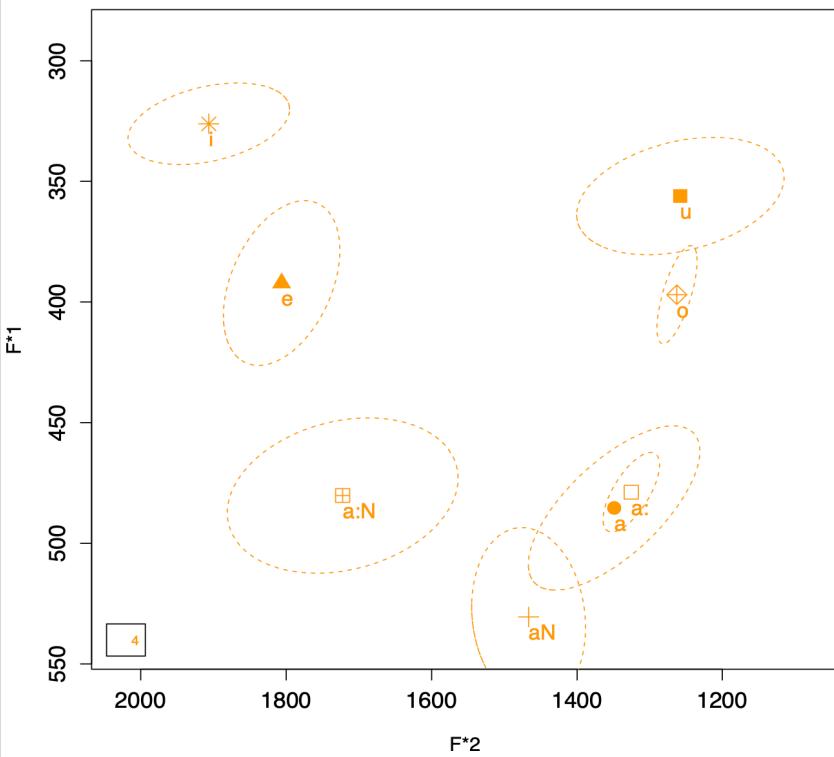
In the vowel space, only the short /-aN/ and long /-a:N/ are positioned as [+low]

Underspecification of the [\pm front] opens up space for fronting (as in the case of /-a:N/) or backing

Systematicity of vowel shifts

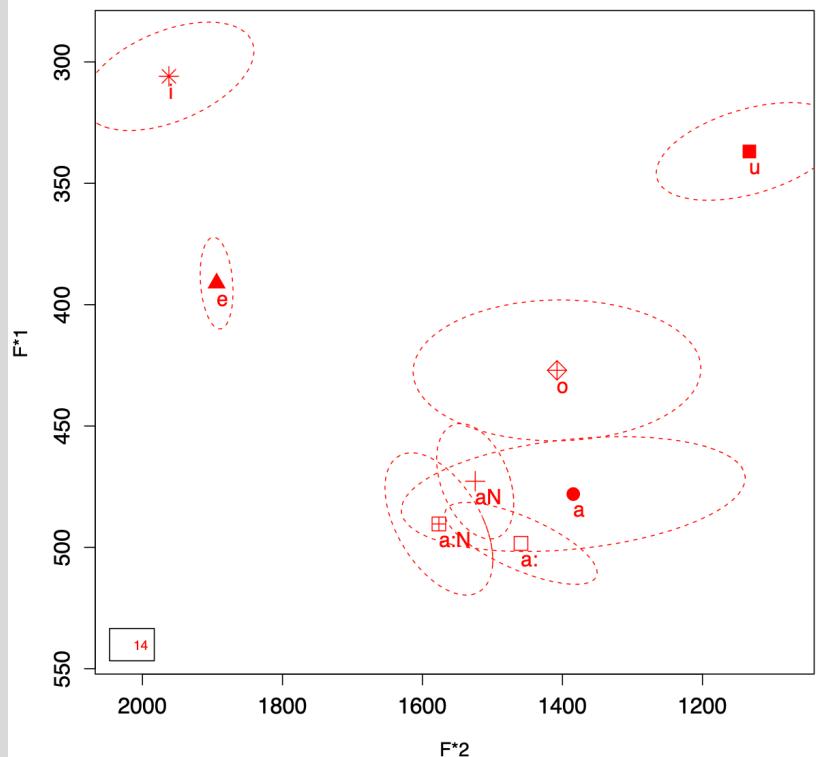
- Let's have a look at vowel spaces by the youngest and the oldest speaker in my study

Mean vowel formant values
Lobanov normalized



(F, YoB: 1995)

Mean vowel formant values
Lobanov normalized



(M, YoB: 1964)

The asymmetry of gender effects?

- The only sound change that is conditioned by gender is the fronting of long vowel /a:N/
- Other sound changes, lowering of short /aN/, merger of /iN/-/eN/, and monophthongization (not included in this presentation, lmk if you're interested), are NOT conditioned by gender

Is it just a random thing?

*If not -- then, **what's special** for the fronting of /a:N/??*

Iconicity and gender in sound change

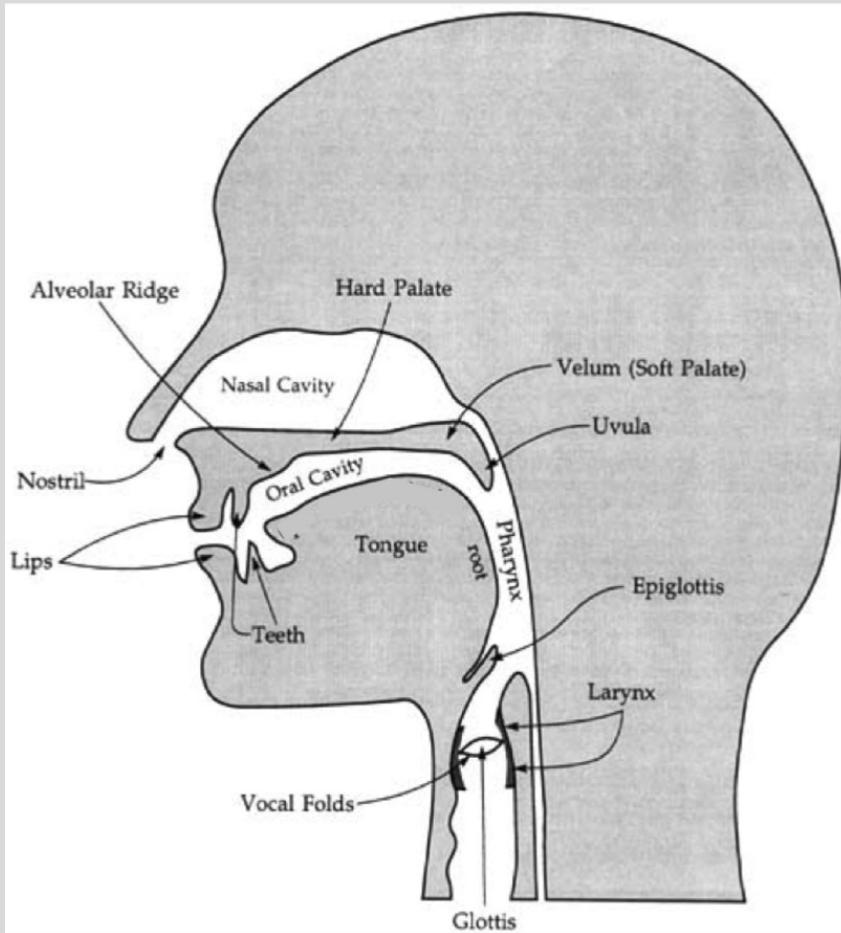
- Iconicity/sound symbolism



Which one is Kiki and which one is Bouba ?

Iconicity and gender in sound change

- Iconicity, vowel fronting and gender

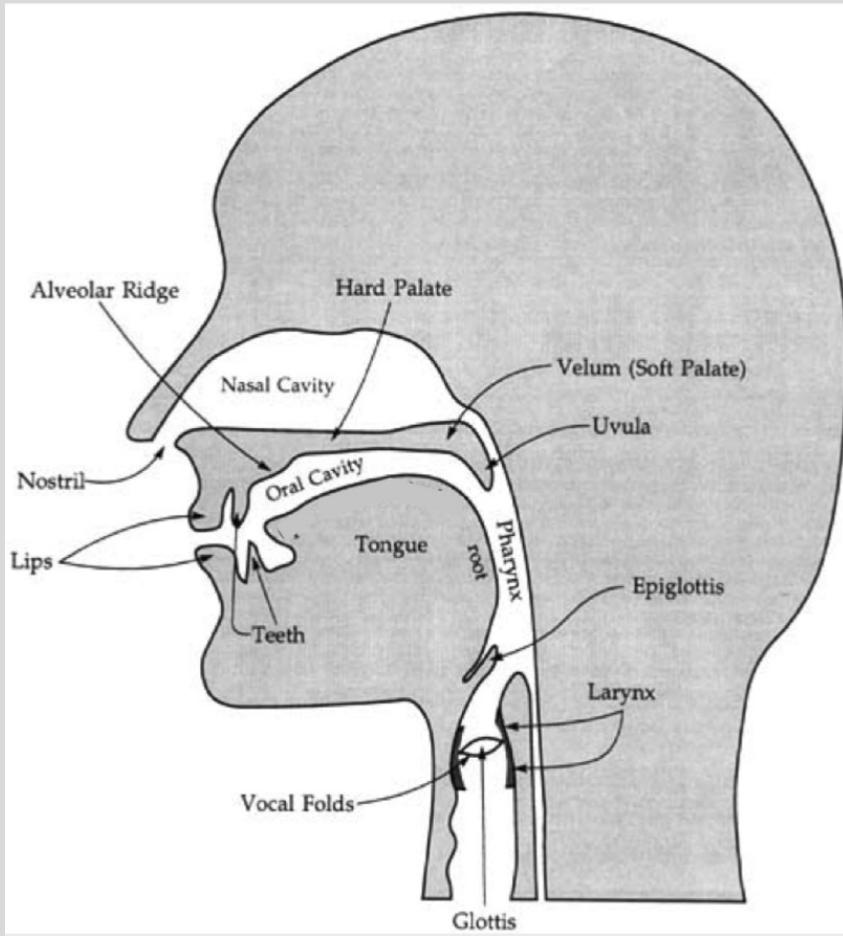


Fronting of vowel correlates with smaller oral cavity in the vocal tract

smallness ideologically correlate with femininity cross-culturally

Iconicity and gender in sound change

- Iconicity, vowel fronting and gender



Vowel raising and fronting are usually led by females (Labov, 2001; Eckert, 2019)

Among the few exceptional cases of male leaders, they tend to lead the inward centralization (Labov, 2001)

In search of social meaning: socio-history

- Actuation of /a:N/ fronting was also happening in the time (by females born between 60s and 80s) when there was a social transformation of gender structure in the community
- ‘Open-up’ policy between the end of 70s and 80s: Tsat Muslim women started to be able to secure professional roles outside of the home setting

Who are the female leaders in linguistic change?

“from an upwardly mobile ethnic group, with a strong commitment to the norms of social justice and intolerance of violation of them.” (Labov, 2015: p. 16)

A synergy of first-wave and third-wave

- First-wave variation (Labov, 1994): the fronting of /a:N/ and the follow-up sound changes (lowering of /aN/, merger etc.) can **maximize the dispersion of vowel system (i.e., the structural need in humans' language)**
- Third-wave variation (Eckert, 2012): female leaders of the actuation of /a:N/ fronting iconically (via sound symbolism) reflects a new type of femininity/change in women's status in the socio-history (**i.e., the social meaning of variation**)

Conclusion in one sentence

- Parallel to patterns of vowel shifts in North American English varieties, sound change in Tsat reflects a potential cross-linguistic/cultural universality in the evolution of vowel system (maximal dispersion) and iconicity as a fundamental socio-cognitive basis in the gender effects

Next steps

- Locating variation beyond phonology: morphosyntax and discourse-pragmatics
- For typology and language evolution: comparative sociolinguistic analysis of the homeland Chamic languages, local Chinese languages, and contact languages/creoles with similar linguistic make-ups
- For linguistic theory: generative vs. usage-based grammatical models
- Incorporating experimental/neurolinguistic methods for (socio)linguistic cognition?

Thank you for listening!!

Any questions??