



Trends in language contact and change in rural China: Consonantal change in Ganluo Ersu

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- A collaborative study:
 - a variationist sociolinguist + a field linguist working on language description + a cultural insider



- classic variationist principles applied to lesser studied languages
 - Diverse linguistic and social settings



- variationist research applied to language documentation and description
 - Richer description, sociophonetic variation
 - Provides a clear window into change in progress



- contribution of underrepresented, endangered languages to variationist research
 - Understanding contact, language shift, loss of vitality

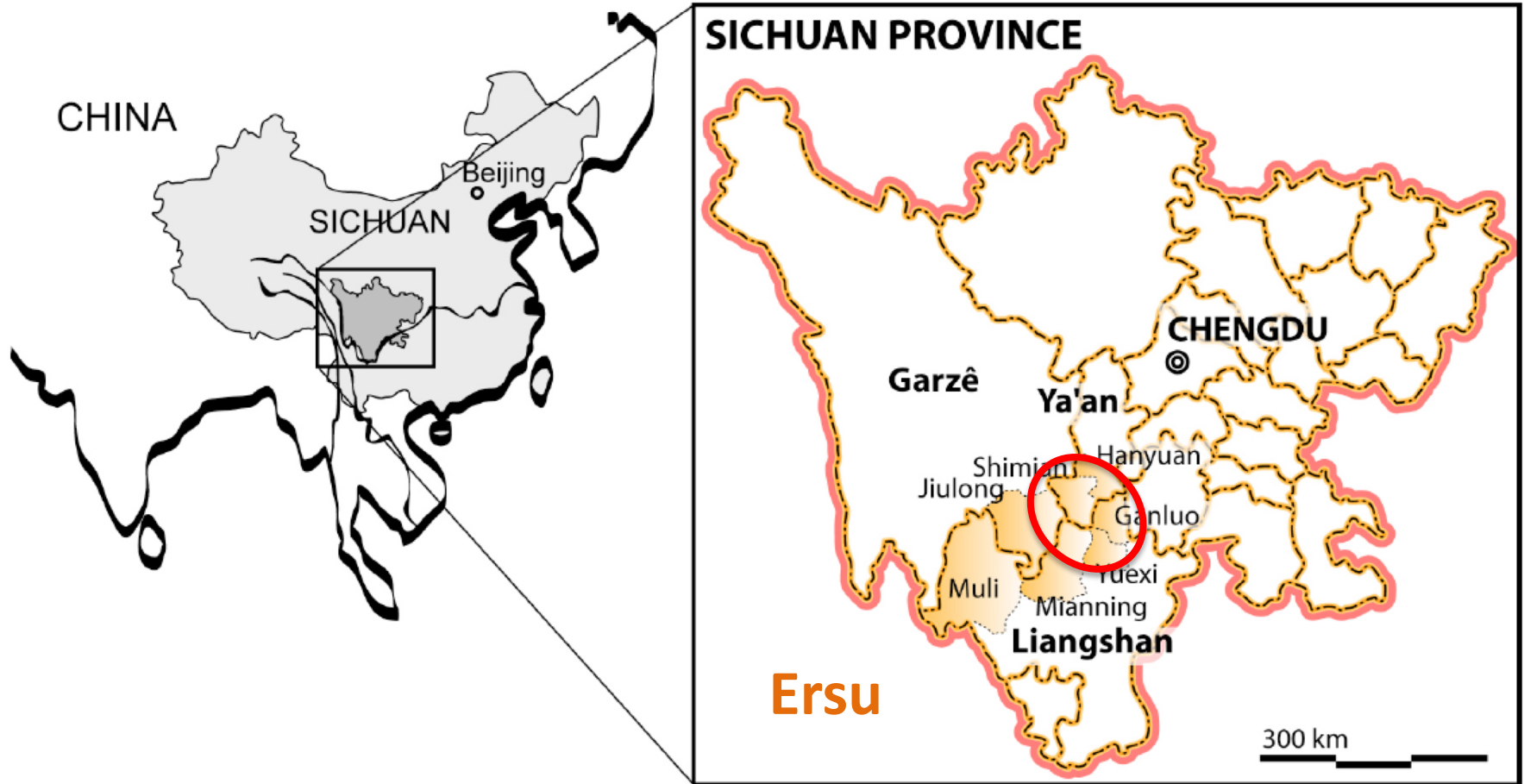


Ganluo Ersu 甘洛尔苏话

- Tibeto-Burman 藏缅语族 (e.g. Bradley 1997:36-7; Sun 2001)
- Southern Qiangic language 羌语支南支



Background on Ganluo Ersu



Map 1. Distribution of the Ersu, Lizu, and Duoxu languages

- Endangered and underdocumented
 - (Wang 2010, Wu Da 2010, Schmidt 2011, Sun 1982, 1983)
 - Ethnic population approx. 16,800, approx. 8,000 speakers
- Traditionally spoken in a multilingual setting
 - Nuosu Yi, Southwest Mandarin Chinese
- Schools: monolingual Mandarin
- Most younger speakers (< 30 years) are bilingual Ersu/Mandarin



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- Schools: monolingual Mandarin

Integration with the national Chinese economy since the late 1970s

* shift from swiddening to cash crops (corn, potatoes, soybeans)

* occupational shift from agriculture to nonagricultural sectors (jobs in urban areas)

* improved educational opportunities





- Phonetic/phonological sketch:
 - Chirkova et al. 2015, *Journal of the IPA*
Detailed phonetic description
Data: one woman (early 40s), two men (early 60s)
- Field observations suggest a change in progress
 - Variation

Background on Ganluo Ersu

Consonants

Chirkova et al. (2015)

	Bilabial	Labio-dental	Dental	Alveolar	Alveolo-palatal	Retroflex	Velar
Plosive	p p ^h b		t t ^h d				k k ^h g
Affricate			t͡ʂ t͡ʂ^h d͡ʒ	t͡ʂ t͡ʂ^h d͡ʒ	t͡ɕ t͡ɕ ^h d͡ʑ	t͡ɕ t͡ɕ^h d͡ʑ	
Nasal	m		n				ŋ
Trill						ʀ	
Fricative		f v	ɕ ʑ	ʃ ʒ	ç ʝ		x
Approximant	w				j		
Lateral				l			
Lateral fricative				ɬ			

Phonologically monosyllabic and tonal (H/L)

Syllable: **(C)(C)(G)V**

Variation

- Trills
 - > merger, loss
- Delateralization of lateral fricative
 - ɬ > x
- Devoicing of stops and affricates
 - e.g. bó > pó
- Simplification of onsets
 - e.g. NCV > CV
- Rhotacized vowels
 - ɾə > Cə~

Background on Ganluo Ersu

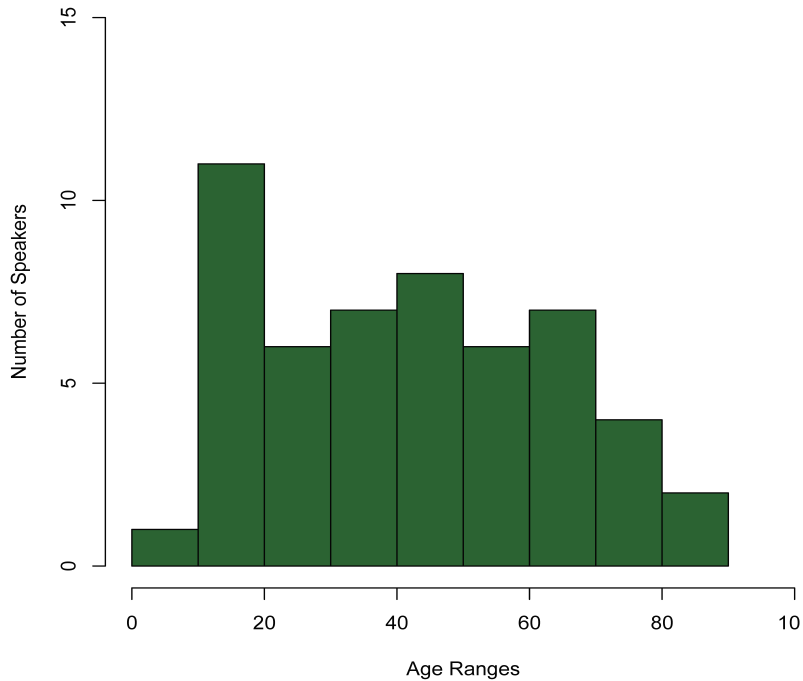
- Vowels
 - Only four simple vowels /i ε a o/
 - Two rhotacized vowels /ə̣ ɑ̣/
 - Syllabic fricatives /ɸ ʐ/

Overall Hypothesis

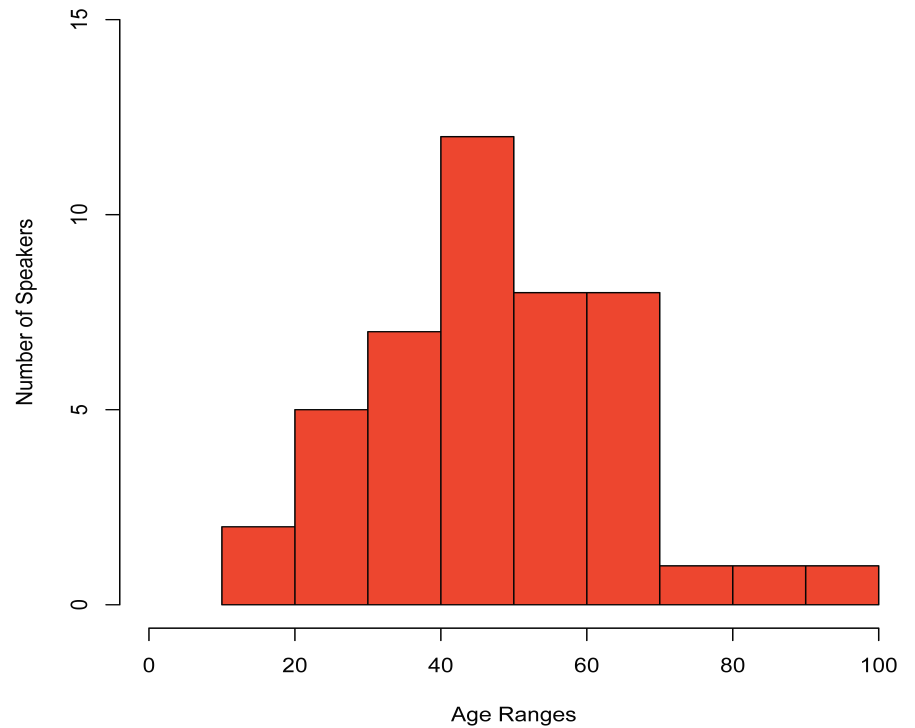
- Ersu consonants are undergoing a major change in progress
 - Consonant simplification toward local Chinese phonology?
 - Correlated with sociolinguistic variables?
 - age
 - gender
 - occupation
 - education

- 97 speakers (52 women, 45 men)
- ages 8-94

52 female speakers



45 male speakers



- Word list (3 times, Chinese characters)
 - 116 words, including distractor words
 - Consonants in syllable-onset position
- Question & Answer/ethnographic interview
- Interviewer: Dehe Wang
 - Native speaker/community member



- Which variety of Ersu do you consider as standard or prestigious?
- Is the Ersu variety of your home village different from that of the neighboring villages? Is the Ersu as spoken in the neighboring villages pleasing to the ear? Why?
- Do you think Ersu is changing? Are there any differences in the Ersu as spoken by older, middle-aged, young people, and children? Are there any differences between the Ersu as spoken by men and women?

Factors

- Age
- Gender
- Education
- Occupation
- (Q&A Interview Language Choice)
- (Village)
- (Phonetic Environment: following vowel)

Educational scale

Level	Years	Description
6	4	University degree (bachelor's degree, <i>xuéshì xuéwèi</i> 学士学位)
5	3	Senior technical degree (<i>dàzhuān</i> 大专)
4	3	Upper secondary school (<i>gāozhōng</i> 高中)/secondary technical degree (<i>zhōngzhuān</i> 中专)
3	3	Junior (lower) secondary school (<i>chūzhōng</i> 初中)
2	3	Upper primary school (<i>gāoxiào</i> 高校)
1	3	Lower primary school (<i>chūxiào</i> 初校)/no education

a 1 to 6 scale for education, following the scales in Labov (2001), but adapting it for the Ganluo Ersu setting in China

The speakers in our study range from illiterate (0 years of education) to a bachelor's degree (16 years)

Occupational scales

Labov (2001:61)

Dehe Wang's scale for Ganluo

6	Professional, owner-director of large firm	High school teachers and university professors
5	White collar: proprietor, manager	Local officials (township and village level)
4	White collar: merchant, foreman, sales	Doctors
3	Blue collar: skilled	Elementary and middle school teachers
2	Blue collar: unskilled	Small retailers
1	Unemployed	Farmers and migrant workers

(1) Farmers (including farmer migrant workers): 农民(农民工)

(2) Small retailers : 商贩

(3) Elementary and middle school teachers: 中小学教师

(4) Doctors: 医生

(5) Local cadres (township and village level): 乡镇领导干部

(6) High school/University professors : 大学教授

Hypothesis 1: Loss of trills

- Example words

ɾá ‘chicken’

ɾɾé ‘star’

ɾɾò ‘pot/pan’

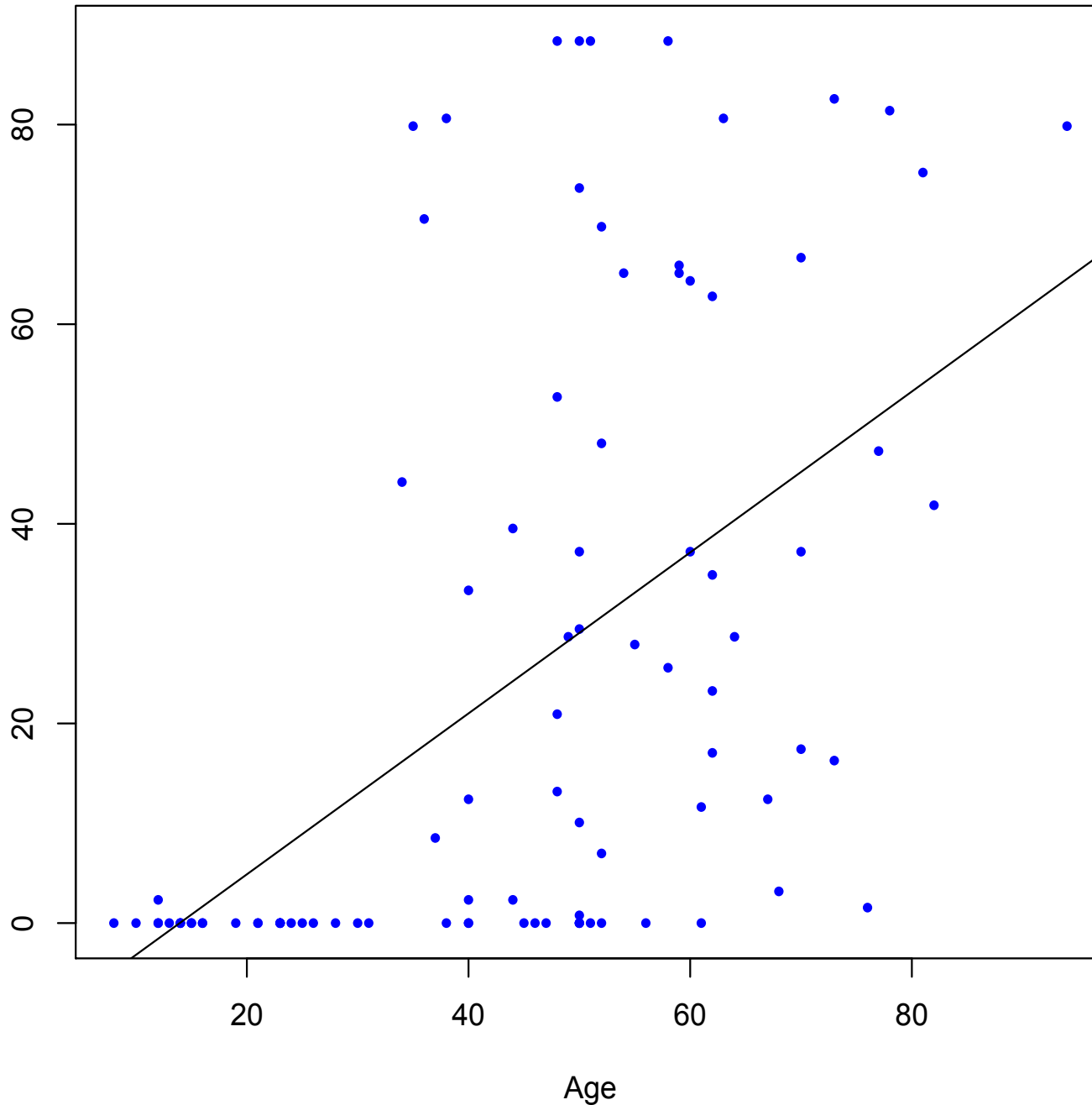
ɾ^hú-ɾ^hú ‘scratch’

Variation:

ɾ ~ tʃ

ɾ ~ ʒ, ɹ

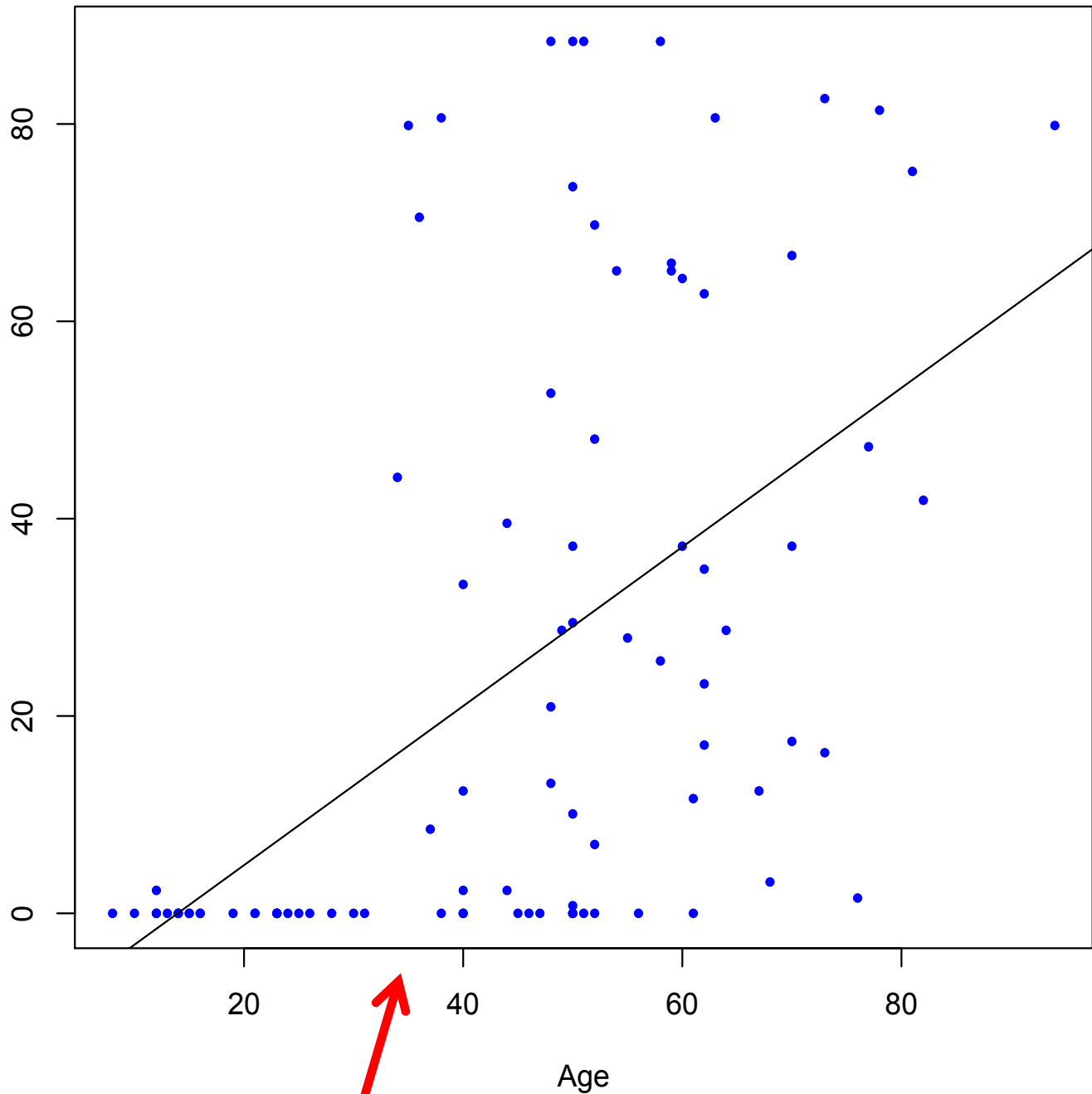
Percent “trill-ful” for 97 speakers



12,630 tokens, 97 speakers

$R^2=0.22$
 $p<0.0001$

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Sharp contrast around age 40 reflects speakers raised after Deng Xiaoping's reform policies in the 1970s, also matching our ethnographic interviews

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 $p<0.0001$

- “Those who had a chance to go to school speak Chinese better than Ersu. Those who did not go to school speak Ersu better.

-78 year-old woman, farmer, no formal education

- “Those who had a chance to go to school speak Chinese better than Ersu. Those who did not go to school speak Ersu better.
- “Nowadays, children around 10-11 years of age only speak Chinese to each other. You address them in Ersu, but they reply in Chinese, can't say it in Ersu.”

-78 year-old woman, farmer, no formal education

Logistic regression on trills

- Logistic regression (Tagliamonte 2006)
- Rbrul (Johnson 2009), linear mixed effects (Drager & Hay 2012)
- 12,630 tokens
- Factors: Age, Gender, Education, Occupation, Village, Language Choice, Speaker, Following Vowel

Logistic regression on trills

Step-up/step-down procedure (Rbrul)

Fixed effects:

Age*** log-odds 0.136
(14.6% higher odds of trill per year of age)

Occupation**
log-odds -0.837
(56% decrease for each step up on the scale)

Village≠Liaoping/Yuexi*
log-odds 2.182, factor weight 0.899

Not significant: Education, Gender, Interview Language

Random: Speaker, Following Vowel

R^2 fixed = 0.38

Hypothesis 1: Loss of trills

- Summary: *Hypothesis confirmed*

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 3. Age + sex
 - Younger speakers=fewer trills
 - Women=more trills

Hypothesis 2:

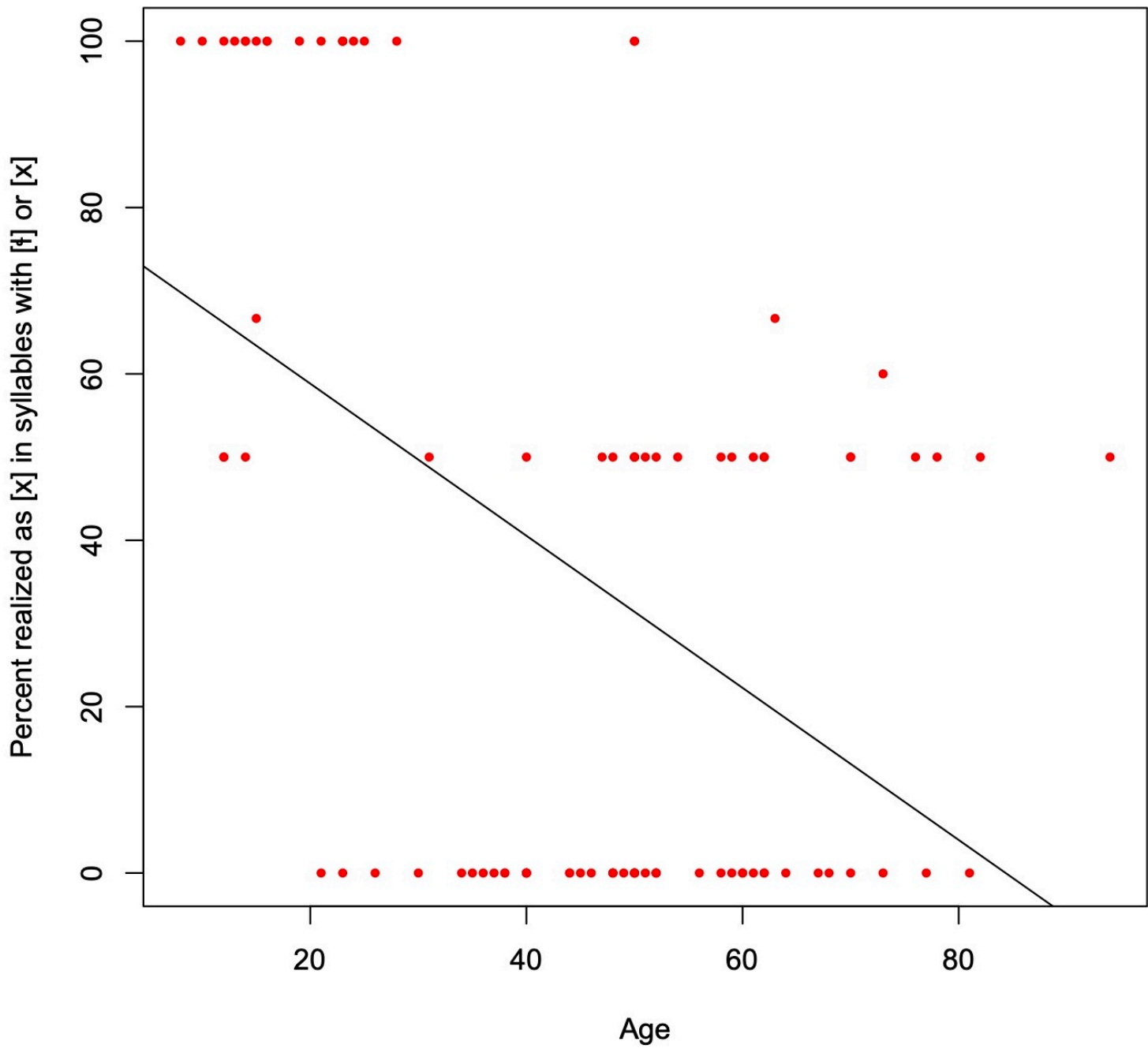
Delateralization of lateral fricative

- Delateralization: $\text{ɬ} > \text{x}$

Example:

ɬá 'month'

- [x] is shared with Chinese



393 tokens

Logistic regression: † to x

Step-up/step-down procedure on [x]

Fixed effects:

Age*** log-odds -0.055
(5.4% lower odds of [x] per year of age)

Gender* Female log-odds 0.783, factor weight 0.686
Male log odds -0.783, factor weight 0.314

Not significant: Education, Occupation, Village, Following Vowel

Random: Speaker

R^2 fixed = 0.199

393 tokens

Average percent realized as [x]

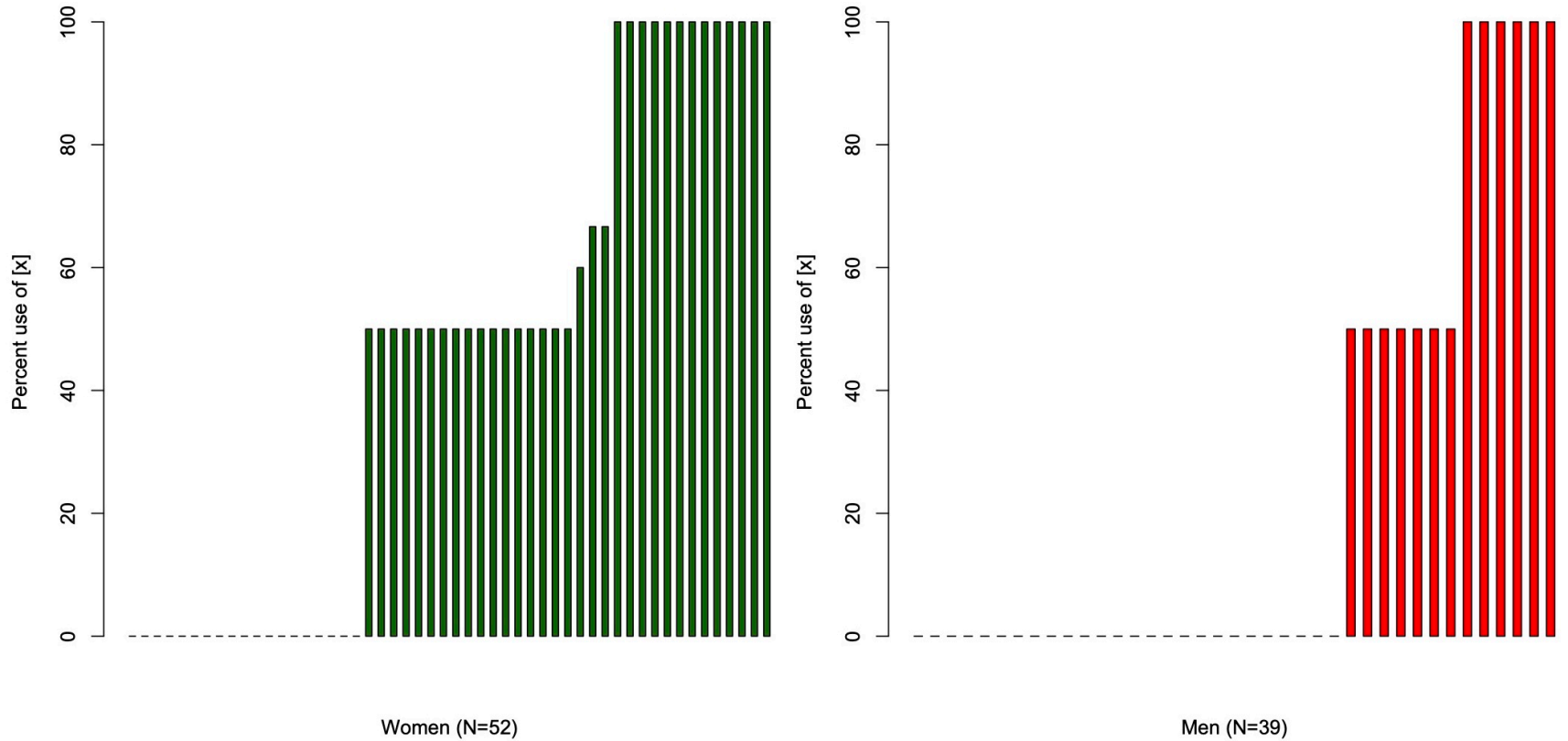


Figure 4. Percentage of [x] for each individual speaker, organized by gender.

Hypothesis 2: Delateralization of lateral fricative

- Summary: *Hypothesis confirmed*



Hypothesis 2:

Delateralization of lateral fricative

- Summary: *Hypothesis confirmed*

[x] is replacing the lateral fricative in younger, female speakers

-Becoming more like Chinese phonology



Hypothesis 3: Devoicing of stops and affricates

- Examples

dzà ‘paddy rice’

bé ‘insect’

ndzǎtsá ‘belt’

dʒú ‘be dry’

dzó ‘push’

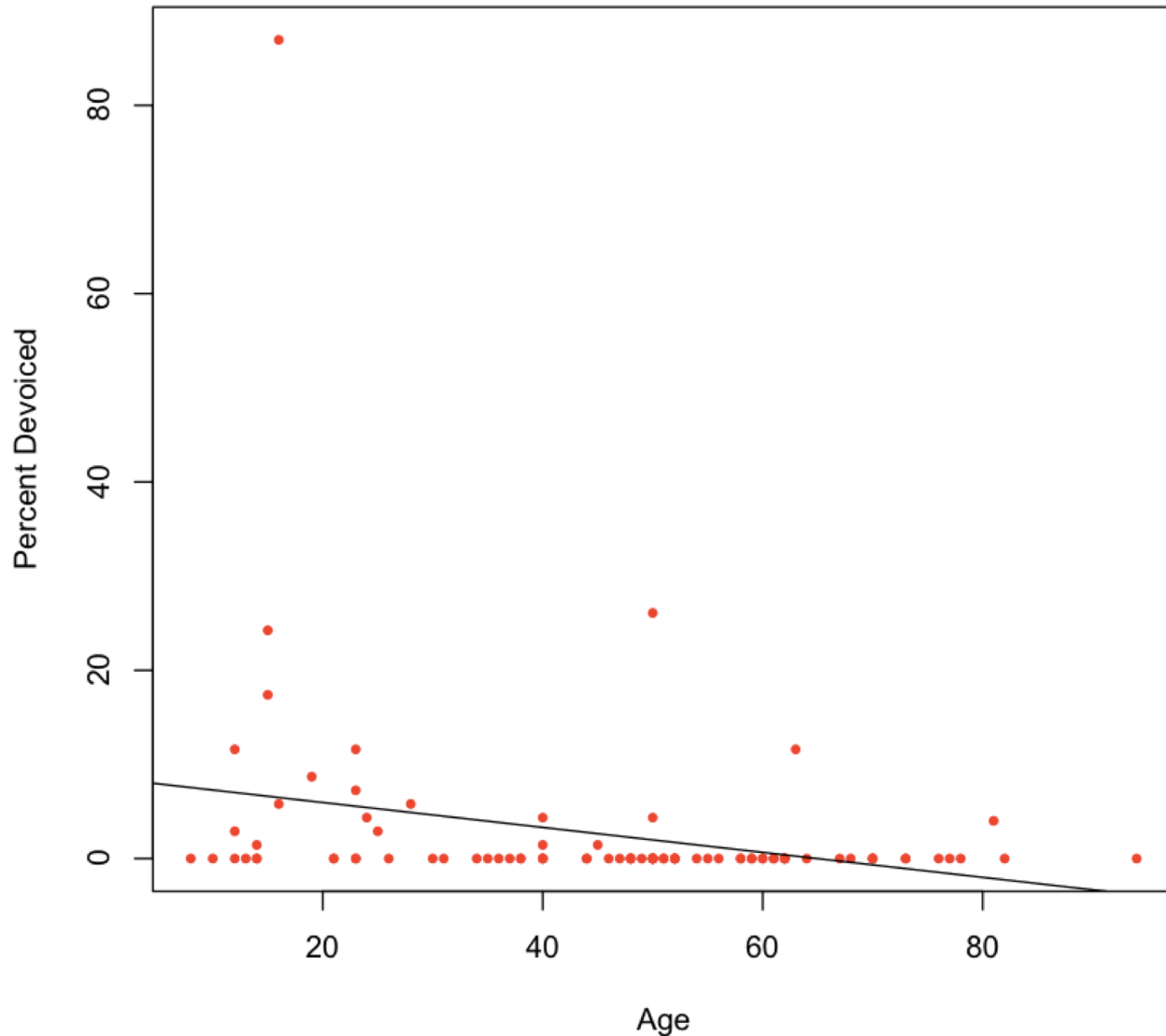
dà-tʃá ‘naughty’

dʒó ‘water’

ndzǐ-ndzǐ ‘quarrel’

vá ‘net’

Hypothesis 3: Devoicing of stops and affricates



Logistic regression:
Age* log-odds -0.12
 $R^2=0.128$, $p<0.02$
6756 tokens

Fixed:
Age, Sex, Occupation,
Education,
LanguageChoice

Random: Speaker
FollowingVowel

Hypothesis 3: Devoicing of stops and affricates

- Summary: *Hypothesis confirmed*

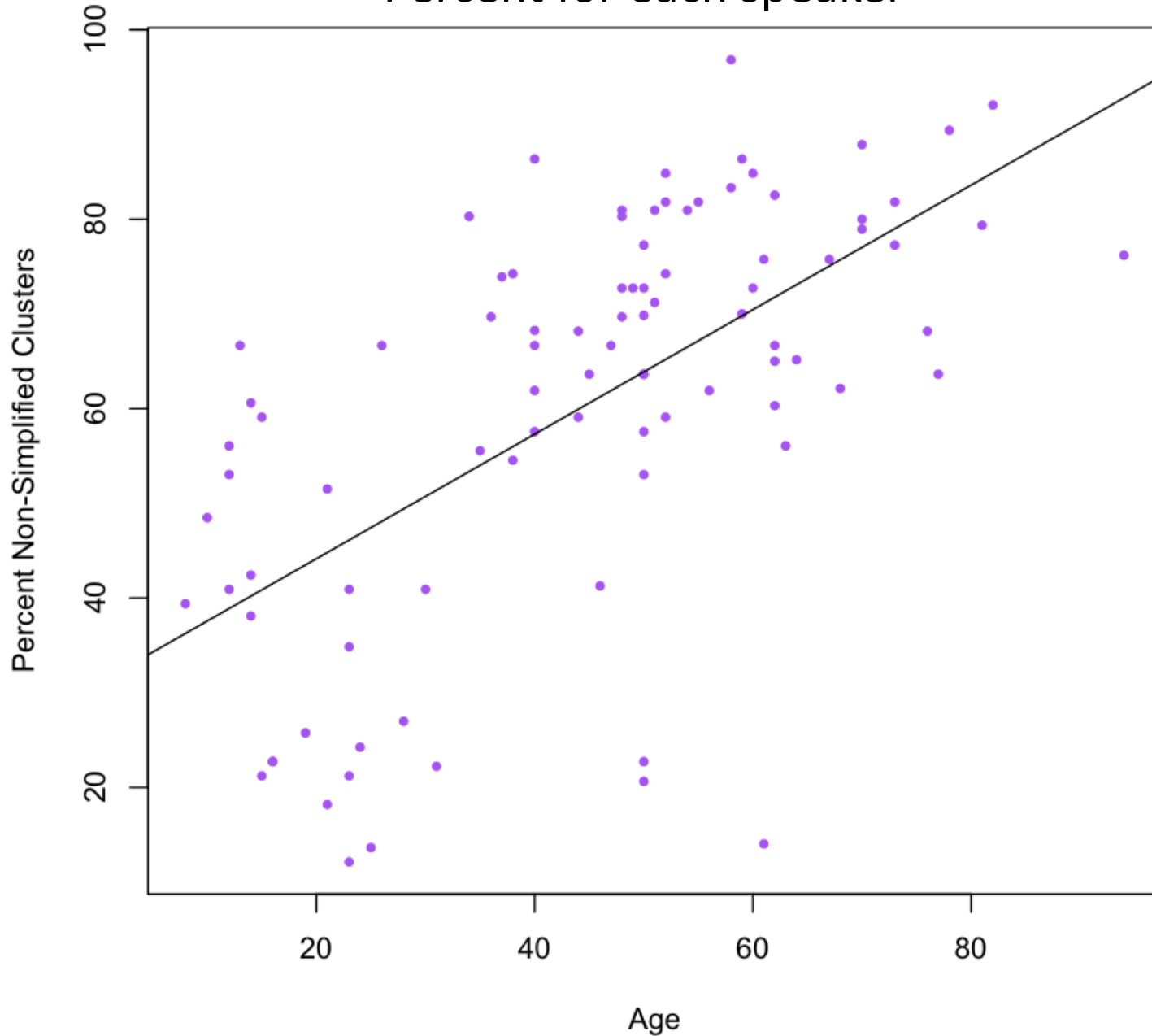
Younger speakers more likely to devoice stops and affricates, like Chinese phonology



Hypothesis 4: Simplification of onsets

Meaning	Older Speakers	Younger Speakers
soldier	əmé	mé
steal	Np ^h ó	p ^h ó
heavy	əné	né
horse	Nbò	bò
raise (chicken)	əzú	zú
ride	Ndzè	dzè

Age versus simplified onsets: Percent for each speaker



Multiple regression:
Age***

Onset simplification
increases 0.7% for
each year younger
 $R^2=0.376$

n.s.:
Gender, Education,
Occupation,
LanguageChoice

Hypothesis 4: Simplification of onsets

- Summary: *Hypothesis confirmed*

Younger speakers are more likely to simplify consonant onsets, reducing non-Chinese onsets

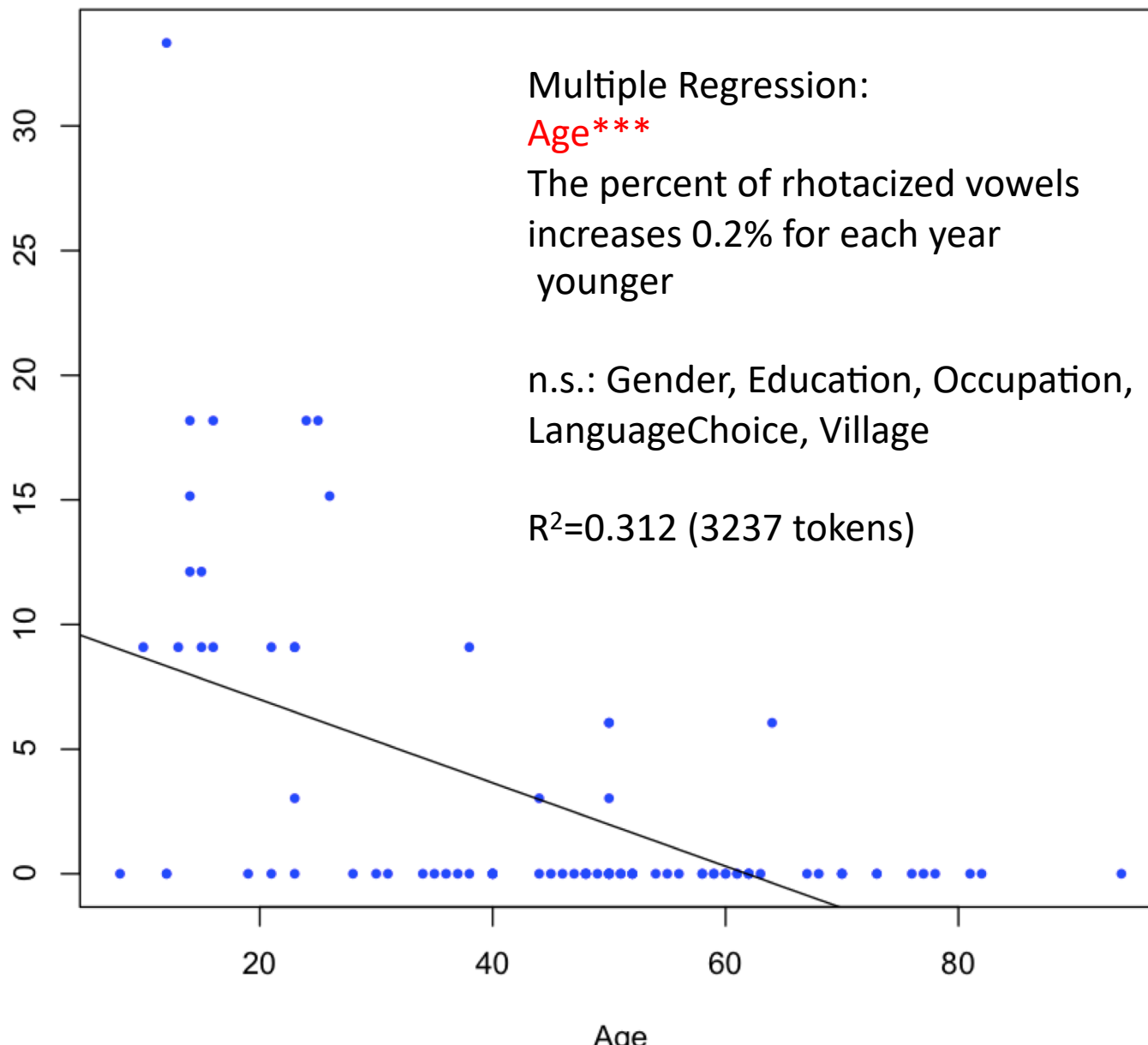


Hypothesis 5: Rhotacized vowels

- Example:

ɹə → Cə

Percent rhotacized vowels in words that can have retroflex trills



Hypothesis 5:

Rhotacized vowels $r\text{ə} \rightarrow C\text{ə}$

- Summary: *Hypothesis confirmed*

Younger speakers are more likely to use rhotacized vowels, i.e., replacing the retroflex trill consonant



Conclusions



Overall Hypothesis

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 - Correlated with interview language choice?
 - **No**

Why?



Why?

- Speakers discussed generational increases in Chinese contact through education, migrant labor, intermarriage

Why?

- Speakers discussed generational increases in Chinese contact through education, migrant labor, intermarriage
 - Especially for people born after Deng Xiaoping's reforms in the 1970s

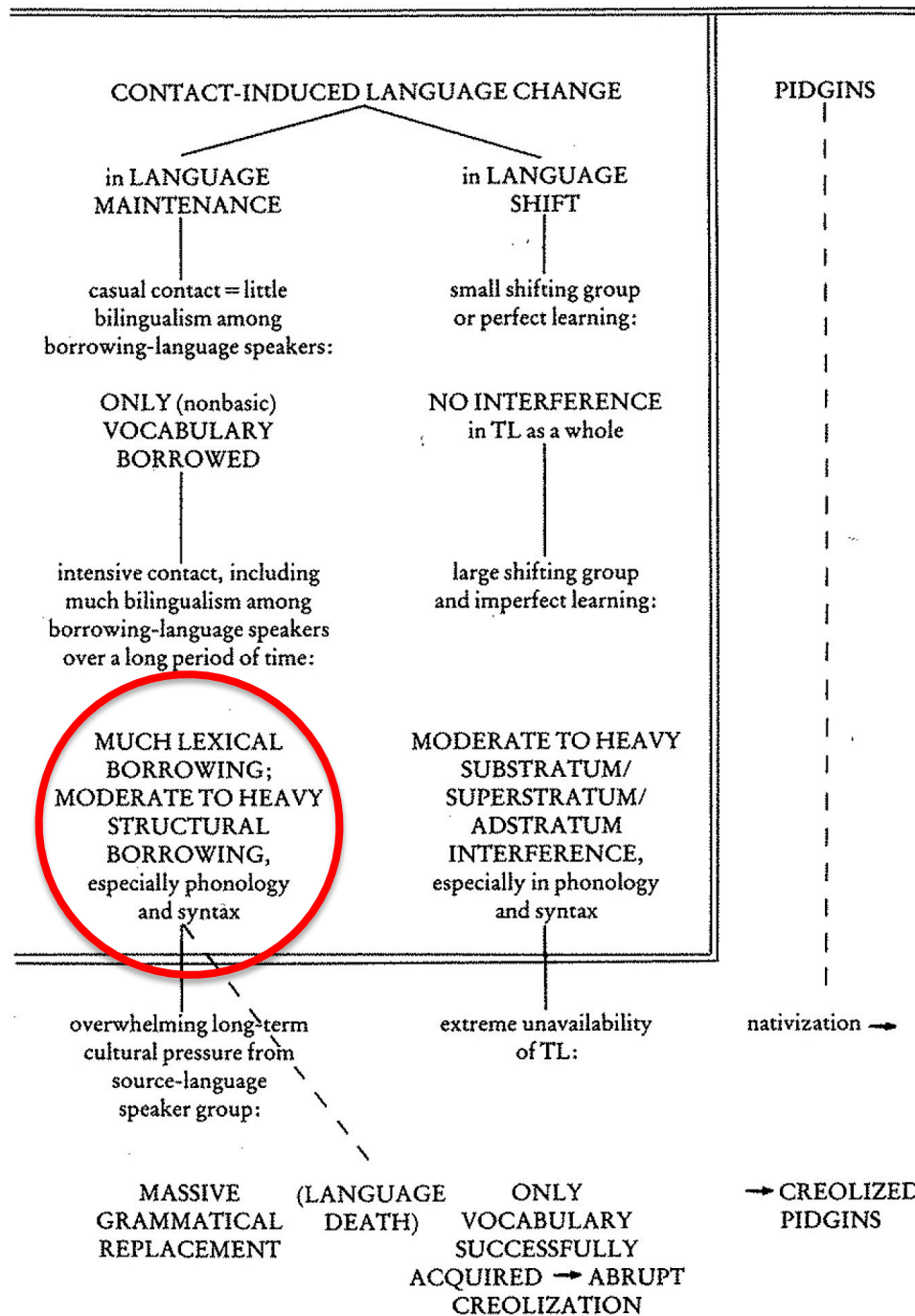
Overall loss of language vitality

- “Good Ersu is spoken by people around the age of 50-60. Their language is the best...”

Overall loss of language vitality

- “Good Ersu is spoken by people around the age of 50-60. Their language is the best...”
- “Young people nowadays mostly study away from their home villages where they mostly speak Chinese.”
 - 46 year-old man with elementary school education

- Ersu villages in Sichuan: Intense contact with Chinese and loss of language vitality
 - Convergence
 - Unilateral convergence
 - Contact-induced phonological convergence



- Convergence
- when contact-induced phonological convergence occurs in an unequal prestige relationship, the convergence can be realized in terms of socially stratified, quantifiable variation
- this suggests that classical Labovian sociolinguistic principles for age, gender, and social class (Labov, 1996, 2001; Trudgill, 1972, 1974) may also be applicable to the study of a small indigenous community such as Ersu

- Comparable processes of Chinese-influenced phonological change
- other small minority languages of western and southwestern China
 - Amdo Tibetan of Qinghai Province: Jamsu Reynolds (2012)
 - Duoxu of Sichuan Province: Chirkova (2014)
 - Minority languages of Yunnan: Gao (2017)
- Various languages of China:
 - Zhou (2012), Li & Li (2015)



Acknowledgments

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