## Diachrony of Coda /ŋ/ in Suzhou, Wu Chinese: Generational Change and Differing Readings

Yuhong Zhu
The Ohio State University
zhu.1447@osu.edu



QP<sub>1</sub>

## Agenda

- Overview & Research questions
- Suzhou dialect of Wu Chinese
- The data & analysis
- Conclusion and future work

## Overview – Sound Change

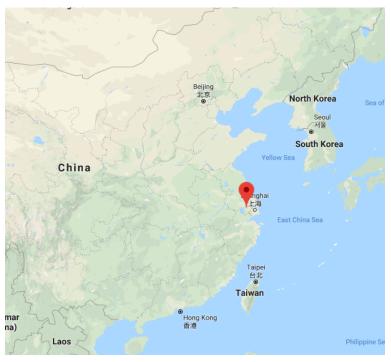
- The Neogrammarian view: Sound change is regular (Osthoff and Brugmann 1878)
- Borrowing and analogy can disrupt regularity in change
   (Labov 1981, 1994)
- Generational difference in an apparent time language survey often reflects diachronic change in progress
   (Bailey et al. 1991)

## Overview – Sound Change

- Research Question:
  - 1. How would a regular sound change react to the pressure of the standard dialect (Mandarin Chinese), looking at Suzhou dialect of Wu Chinese?
  - 2. What models of change could be used to account for the distributional patterns under this context?

#### Suzhou Dialect of Wu Chinese





(Chao 1967)

#### Suzhou Dialect of Wu Chinese

- Three-way laryngeal contrast ("滂" /pʰã/, "幫" /pã/ and "朋" /bã/))
- Fully contrastive palatal affricates ("七" /tsʰiə?/vs. "乞" /tɕʰiə?/)
- Complex tones and sandhi rules

## Topic of presentation

• Tendency in "younger" generations:  $*/V\eta/ > [\tilde{V}]$ 

#### Differing Literary and Colloquial Readings ("文白異讀")

 Literary resembles the standard dialect while Colloquial reflects the native pronunciation (Wang, 1955)

Character	Gloss	Mandarin		Literary	Colloquial		
大	big	[ta:]	[ta:]	大學 "university"	[tu:]	大人 "adult"	
生	alive, raw	[ʂəŋ]	[sən]	生物 "biology"	[san]	生活 "life"	
人	people	[zen]	[zen]	人民 "people"	[nin]	小人 "child"	

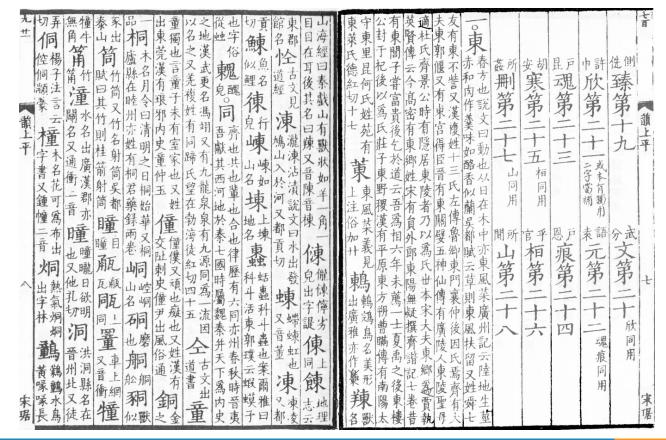
Table 1. Differing Literary and Colloquial Readings in Shanghai. Tones are omitted.

#### The Data

- Adapted from the fieldwork of Qian (1992)
- Difference in onset is omitted, length contrast also omitted
- Merger between [ã] and [ồ] into [ã] among younger speakers, which is not the focus of this study
- Prenucleus glides are treated as secondary articulations
   (Duanmu 2007)
- Guangyun rhyme groups are further divided into subgroups according to different distributional patterns

## More on Guangyun 廣韻

- A Chinese rhyme dictionary compiled in 1008
- A major source for Middle/Old Chinese Reconstruction



	Mand	arin	Guar	igyun	L-Old	L-Mid	L-New	C-Old	C-Mid	C-New
恆	/heŋ/	constant	登I	*-əŋ	[ən]	[ən]	[ən]	[ən]	[ən]	[ən]
朋	/pʰəŋ/	friend	登II	*bəŋ	[ən]	[ã]	[ã]	[ã]	[ã]	[ã]
爭	/ʈʂəŋ/	dispute	庚I	*-aŋ	[ən]	[ən]	[ən]	[ã]	[ã]	[ã]
孟	/məŋ/	a surname	庚II	*baŋ	[ən]	[ã]	[ã]	[ã]	[ã]	[ã]
横	/həŋ/	horizontal	庚III	*haŋ	[ã]	[ã]	[ã]	[ã]	[ã]	[ã]
命	/miəŋ/	life	庚IV	*C <sup>j</sup> əŋ	[ɪn]	[ɪn]	[ɪn]	[ɪn]	[ɪn]	[ɪn]
嘗	/ʈʂʰaŋ/	taste	7ELT	* >>	[ღã]	[ã]	[ã]	[ღᾶ]	[ã]	[ã]
雙	/şuaŋ/	double	陽I	*-ɒŋ	[ღã]	[ã]	[ã]	[ღã]	[ã]	[ã]
讓	/zaŋ/	let	l βELTT	*Cinn	[ã]	[ã]	[ã]	[ã]	[ã]	[ã]
兩	/liaŋ/	two	陽II	*C <sup>j</sup> ɒŋ	[ã]	[ã]	[ã]	[ã]	[ã]	[ã]
江	/tsiaŋ/	river	江	*-ɒŋ	[ღᾶ]	[ã]	[ã]	[ღᾶ]	[ã]	[ɑ̃]
絨	/zoŋ/	wool	東	*-oŋ	[oŋ]	[oŋ]	[oŋ]	[oŋ]	[oŋ]	[oŋ]
兄	/sioŋ/	brother	庚V	*C <sup>j</sup> ɒŋ	[oŋ]	[oŋ]	[oŋ]	[oŋ]	[0ŋ]	[oŋ]
		Tal	ble 2. Ma	in data of	the study.	L: Literary	; C: Colloq	quial.	-	
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#### The Data

- Type A: Literary [ən] > [ən] > [ən]; Colloquial [ən] > [ən] > [ən] (登I)
- Type B: Literary [ən] > [ən] > [ən]; Colloquial [ã] > [ã] > [ã] (庚I)
- Type C: Literary [ən] > [ã] > [ã]; Colloquial [ã] > [ã] > [ã] (登II, 庚II)
- Type D: Literary [ã] > [ã] > [ã]; Colloquial [ã] > [ã] > [ã] (庚III, 陽II)
- Type E: Literary [ɪn] > [ɪn] > [ɪn]; Colloquial [ɪn] > [ɪn] > [ɪn] (庚IV)
- Type F: Literary [ $\tilde{p}$ ] > [ $\tilde{p}$ ] > [ $\tilde{p}$ ]; Colloquial [ $\tilde{p}$ ] > [ $\tilde{p}$ ] > [ $\tilde{p}$ ] (陽I, 江)
- Type G: Literary [oŋ] > [oŋ] > [oŋ]; Colloquial [oŋ] > [oŋ] > [oŋ] (東, 庚V)
  - Each type corresponds to a distinct chain of behaviors
  - Rhyme-subgroup and type labels are arbitrary

## The Analysis

 Guangyun reconstruction forms are drawn from literature on Old and Middle Chinese

(Wang 1955, Wang 2000, Zheng-Zhang 2003, Baxter and Sagart 2014)

Derivations can be formalized in Optimality Theoretical constraint grammars

(Prince and Smolensky 1993)

## The Analysis – Phonological Contrast

• I will be using privative phonological features instead of traditional [±α] distinctive features

(Steriade 1987, Dresher et al. 1994)

 The relevant backness features would be [front], [back] and unspecified [∅]

Phoneme	Feature
/n/	[Ø]
/ə/	[Ø]
/a/	[Ø]
/ŋ/	[back]
/0/	[back]
/a/	[back]

## The Analysis – Type A

Mandarin		Guangyun		L-Old	L-Mid	L-New	C-Old	C-Mid	C-New	
恆	/heŋ/	constant	登I	*-əŋ	[ən]	[ən]	[ən]	[ən]	[ən]	[ən]

- Mostly consists of words of 登 rhyme \*əŋ
- \*əŋ > ən across the board
   Suzhou disallows a mid vowel followed by a [back] /ŋ/coda, while Mandarin tolerates it
- Proposal: /ŋ/ coda can only follow back vowels in Suzhou, but non-front vowels in Mandarin

## The Analysis – Type A

Combination	Suzhou	Mandarin
oŋ [back] [back]	√	√
əŋ/aŋ [∅] [back]	×	√
æŋ [front] [back]	×	×

- An asymmetry in surface distribution
- Suzhou has stricter phonotactics regarding agreeing [back] features – both have to be [back]; even [back] with unspecified nucleus would be excluded
- On the other hand, Mandarin only disallows opposite backness features, i.e. [front] and [back] co-occurring

## The Analysis – Type A

- [ən] is easier to pronounce than [əŋ] since it does not include a tongue backing gesture
- Suzhou pays more attention to articulatory ease, while Mandarin preserves the underlying form /əŋ/ with a less strict phonotactics

## The Analysis – Type B

Mandarin		Guangyun		L-Old	L-Mid	L-New	C-Old	C-Mid	C-New	
爭	/ʈʂəŋ/	dispute	庚I	*-aŋ	[ən]	[ən]	[ən]	[ã]	[ã]	[ã]

- Mostly consists of words of 庚/耕 rhyme \*aŋ
- A clear split between Literary and Colloquial
- Proposal: Literary comes from Mandarin loan; \*aŋ > ã
  is caused by another listener-induced change model,
  Misperception & Reconstruction

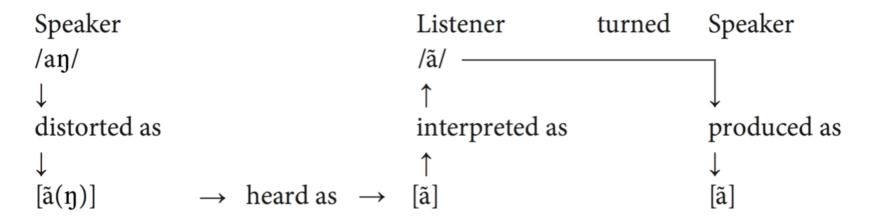
(Ohala 1981)

#### The Analysis – Type B

Derivation of [ən] in Literary

Mandarin phonology  $\rightarrow$  [əŋ]  $\rightarrow$  /əŋ/ as loanword input  $\rightarrow$  [ən] in Suzhou

Derivation of [ã] in Colloquial



Still in line with the phonotactics of Suzhou, as /aŋ/
 ([∅] [back]) never surfaces in the synchronic grammar

#### The Analysis – Type C

Mandarin		Guangyun		L-Old	L-Mid	L-New	C-Old	C-Mid	C-New	
朋	/pʰəŋ/	friend	登II	*bəŋ	[ən]	[ã]	[ã]	[ã]	[ã]	[ã]
孟	/məŋ/	a surname	庚II	*baŋ	[ən]	[ã]	[ã]	[ã]	[ã]	[ã]

- 登(\*əŋ)/庚(\*aŋ) rhyme words with a **bilabial** onset (b/p/m)
- Brief Mandarin influence (L-Old), then collapsed into one unified category
- 登 (\*əŋ) and 庚 (\*aŋ) have different reconstructed nuclei

(confused as "being both from 庚 rhyme") → Type C

庚II \*-aŋ 
$$\rightarrow$$
 [baŋ]  $\nearrow$ 

## The Analysis – Type D

Mandarin		Guangyun		L-Old	L-Mid	L-New	C-Old	C-Mid	C-New	
横	/həŋ/	horizontal	庚III	*haŋ	[ã]	[ã]	[ã]	[ã]	[ã]	[ã]
讓	/zaŋ/	let	17 E T T	*Cinn	[ã]	[ã]	[ã]	[ã]	[ã]	[ã]
兩	/liaŋ/	two	陽II	*C <sup>j</sup> ɒŋ	[ã]	[ã]	[ã]	[ã]	[ã]	[ã]

- 庚 (\*aŋ) words with /h, fi/ onset, 陽 words with onset palatalization (Division-III, "三等") (\*C<sup>i</sup>ɒŋ)
- Most resistant to Mandarin influence change is truly "regular"
- \* $\mathfrak{p}$ 9 (\* $\mathfrak{a}$ 9 )  $\tilde{\mathfrak{a}}$  in 陽II because of onset palatalization

## The Analysis – Type E

Mandarin		Guangyun		L-Old	L-Mid	L-New	C-Old	C-Mid	C-New	
命	/miəŋ/	life	庚IV	*C <sup>j</sup> əŋ	[ɪn]	[ɪn]	[ɪn]	[ɪn]	[ɪn]	[ɪn]

- Consists of 庚/耕 words with onset palatalization (\*C<sup>j</sup>əŋ)
- Here again, Suzhou prohibits /ŋ/ preceded by any non-back nuclei
- Plus, both the nucleus and the coda change to non-[back] in Suzhou – [In]

## The Analysis – Type F

	Mandarin Guangyun		L-Old	L-Mid	L-New	C-Old	C-Mid	C-New		
嘗	/tsʰaŋ/	taste	  ₹ <b> </b>  -  -  -  -  -  -  -  -  -  -  -  -  -	*-ɒŋ	[ღᾶ]	[ã]	[ã]	[ღᾶ]	[ã]	[ã]
雙	/şuaŋ/	double	陽I	-013	[ღᾶ]	[ã]	[ã]	[ღᾶ]	[ã]	[ã]
江	/tsiaŋ/	river	江	*-ɒŋ	[ღᾶ]	[ã]	[ã]	[ღᾶ]	[ã]	[ã]

- Consists of 陽/唐/江 rhyme words without onset palatalization (\*pŋ)
- /ŋ/ surfaces faithfully in Suzhou because /ɒ/ is [back]
- Misperception & Reconstruction change model is again active in this case: \* $p\eta > \tilde{p}\eta > \tilde{p}$

## The Analysis – Type G

Mandarin		Guangyun		L-Old	L-Mid	L-New	C-Old	C-Mid	C-New	
絨	/zoŋ/	wool	東	*-oŋ	[oŋ]	[oŋ]	[oŋ]	[oŋ]	[oŋ]	[0ŋ]
兄	/sioŋ/	brother	庚V	*C <sup>j</sup> ɒŋ	[oŋ]	[oŋ]	[oŋ]	[oŋ]	[oŋ]	[oŋ]

- Consists of 庚 rhyme words with onset palatalization and nucleus labialization/rounding (Division-III Close, "三等合口")(\*C<sup>i</sup>oŋ) and 東(\*-oŋ) rhyme words
- A merger of 庚V rhyme into 東 (Qian 1992)
- Stable across the board because of agreeing [back]

## The Analysis – A recap

#### Mechanisms/change models in play:

- Ease of Articulation: Suzhou only allows [Vŋ] with a [back]
   vowel and obeys this rule by fronting /ŋ/ or the vowel when
   applicable [ən] without tongue backing is easier to pronounce
- Misperception & Reconstruction: listener-induced change model; compatible with non-existence of [aŋ] in the synchronic grammar;

$$*V\eta > \tilde{V}\eta > \tilde{V}$$

Mandarin influence: loans only seen in Literary form

#### Conclusion

 Compared to Mandarin, Suzhou has a more rigid phonotactic system: conforming [back] features is a necessity

Combination	Suzhou	Mandarin
oŋ [back] [back]	√	√
əŋ/aŋ [∅] [back]	×	√
æŋ [front] [back]	×	×

#### Conclusion

#### What is language-internal and language-external?

- Coda nasal neutralization and vowel nasalization are regular and language-internal
- Influence from Mandarin is only seen in the Literary Reading, and is rather unstable

Mandarin		Guangyun		L-Old	L-Mid	L-New	C-Old	C-Mid	C-New	
恆	/heŋ/	constant	登I	*-əŋ	[ən]	[ən]	[ən]	[ən]	[ən]	[ən]
朋	/pʰəŋ/	friend	登II	*bəŋ	[ən]	[ã]	[ã]	[ã]	[ã]	[ã]
爭	/ʈʂəŋ/	dispute	庚I	*-aŋ	[ən]	[ən]	[ən]	[ã]	[ã]	[ã]
孟	/məŋ/	a surname	庚II	*baŋ	[ən]	[ã]	[ã]	[ã]	[ã]	[ã]

#### Future work

- A closer look at Type C (collapsing \*əŋ and \*aŋ) an earlier independent merger?
- A full survey covering all rhymes with nasal codas and their synchronic status in Suzhou
- Use similar approach to look at neighboring dialects (e.g. Shanghai, Wuxi)

# 謝謝僚! [zjal zjal nɛ시] Any Questions?

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## More on phonological contrasts

 Alveolar /n/ is believed by many to be universally "unmarked"

(Avery and Rice 1989)

- The minimal contrast for /ŋ/ to be distinctive is [back]

  (Steriade 1987, Dresher et al. 1994)
- Suzhou has phonemic /æ/, /a/ and /ɒ/; among low vowels a three-way backness contrast is necessary /æ/: [front] /a/: [∅] /ɒ/: [back]
- On the other hand, low vowel variants in Mandarin is purely allophonic

## More on phonological contrasts

Nucleus+Coda	n	ŋ	
æ	disallowed and not attested	disallowed and not attested	
a	allowed but not attested	disallowed, /aŋ/ > [ã]	
ə	[ən]	disallowed, /əŋ/ > [ən]	
n	disallowed and not attested	$[\tilde{\mathfrak{v}}\mathfrak{y}] \geq [\tilde{\mathfrak{v}}]$	

- Most alternations can be accounted as conforming to the phonotactics
- $^*V\eta > \tilde{V}$  change is independent of Mandarin influence

#### OT Constraint Grammar – Type A

Combination	Suzhou	Mandarin
oŋ [back] [back]	√	√
əŋ/aŋ [∅] [back]	×	√
æŋ [front] [back]	×	×

- Two constraints are needed: Back-Harmony and \*Back-Disharmony. Back-Harmony prevents any pair with non-agreeing back features, while \*Back-Disharmony is violated when the pair has opposite back features
- Both are active (ranked over faithness to [back]) in Suzhou, while only \*BACK-DISHARMONY is active in Mandarin

#### OT Constraint Grammar – Type A

#### Distinct derivations from the same \*əŋ input

Mandarin /əŋ/	*Back-Disharmony	IDENT-NAS[back]	Back-Harmony
a. əŋ		 	*
b. ən		*!	
c. æŋ	*!	 	*

Suzhou /əŋ/	*Back-Disharmony	Back-Harmony	IDENT-NAS[back]
a. ən		 	*
b. əŋ		*!	
c. æŋ	*!		*

Mandarin: \*BACK-DISHARMONY, IDENT-NAS[BACK] >> BACK-HARMONY

Suzhou: \*BACK-DISHARMONY, BACK-HARMONY >> IDENT-NAS[BACK]

#### OT Constraint Grammar – Type E

#### Distinct derivations from \*Cjan

Mandarin /C <sup>j</sup> əŋ/	*Back-Disharmony	IDENT-V[back]	IDENT-NAS[back]	Back-Harmony	V-Palatalization
® aəŋ				*	*
bm	*!	*		*	 
cm		*!	 		<u> </u>
dən			*!		*

Suzhou /C <sup>j</sup> əŋ/	*Back-Disharmony	Back-Harmony	V-Palatalization	IDENT-V[back]	Ident-Nas[back]
₩ am				*	*
bıŋ	*!	* 	 	*	l
cəŋ		*!	 		 
dən			*!		*

Mandarin: \*BACK-DISHARMONY, IDENT-V[back], IDENT-NAS[BACK] >> BACK-HARMONY, V-PALATALIZATION

Suzhou: \*BACK-DISHARMONY, BACK-HARMONY, V-PALATALIZATION >> IDENT-V[back], IDENT-NAS[BACK]