

A competition of local and
supralocal norms in two Chinese
Korean dialects:
a case study of /y/

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Chinese Korean

- Spoken by descendants of immigrants who came to China between the mid 19th century and the end of the Second World War (Jin 2008)
- Multiple sources of linguistic influence

Chinese Korean

- Proto-dialects:
 - Inhabitants of different regions and cities are descendants of speakers of different Korean dialects

Chinese Korean

- Influence from both standard North and South Korean:
 - The North Korean standard (Pyongyang) was used as the model for Chinese Korean standardization in the mid-20th century (Tai 2004).
 - An increase in exposure to Seoul Korean through media and travel since the establishment of diplomatic ties between China and South Korea in 1992

Chinese Korean

- The influence of Mandarin has increased in recent years.
 - The majority of speakers are bilingual (Jin 2008).
 - There is a shift in dominant language use from Korean to Mandarin in some communities (Han 2011, 2014).

Goals

- Document the realization of high front rounded vowel /y/ in two Chinese Korean dialects.
- Examine the influence of
 - proto-dialects
 - local contact language: Mandarin
 - supra-local norm: Seoul

Korean Monophthongs

	Front		Back	
high	i	y	ɨ	u
mid	e	ø	ʌ	o
low	ɛ		a	

Korean Monophthongs

	Front		Back	
high	i	(y>wi)	ɨ	u
mid	e	(ø>we)	ʌ	o
low	(ɛ>e)		a	

Korean Monophthongs

	Front		Back	
high	i	(y>wi)	ɨ	u
mid	e	(ø>we)	ʌ	o
low	(ɛ>e)		a	

/y/

- /y/ originates from Late Middle Korean falling diphthong /uj/.

Late Middle Korean

[uj] [oj]

[aj] [ʌj]

Contemporary Korean

[y] [∅]

[ɛ] [e]

(diphthongization

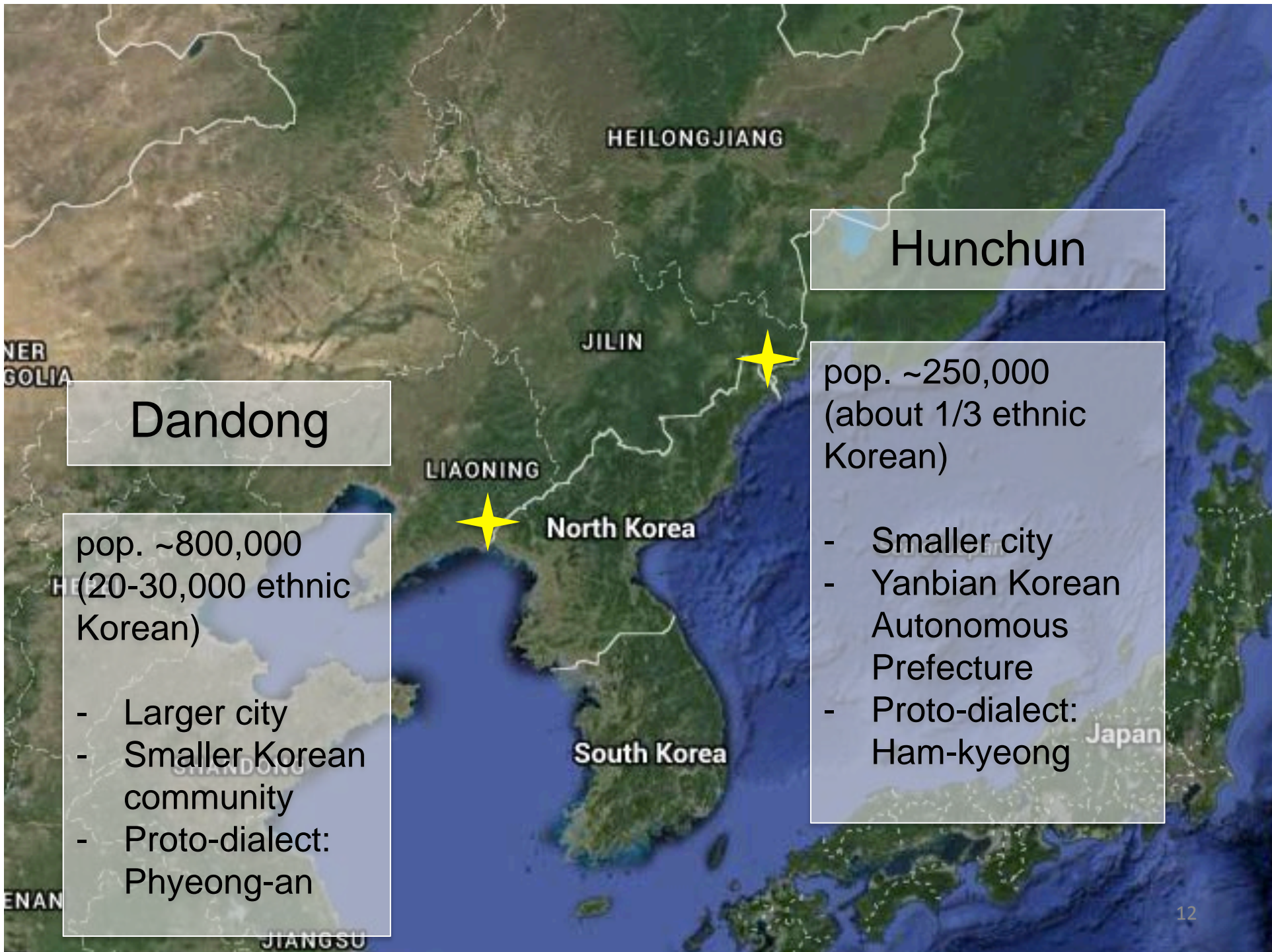
[wi] [we])

(glide deletion

[i] [e])

Chinese Korean in Shenyang, China

- Jin (2008)
 - Monophthong [y] is the dominant variant.
 - Influence of Mandarin [y]
 - Diphthongal [yi] is also attested (11%).
 - Female speakers produce more [yi]
 - Influence of Seoul Korean (supra-local norm) [wi]



Dandong

pop. ~800,000
(20-30,000 ethnic Korean)

- Larger city
- Smaller Korean community
- Proto-dialect: Phyeong-an

Hunchun

pop. ~250,000
(about 1/3 ethnic Korean)

- Smaller city
- Yanbian Korean Autonomous Prefecture
- Proto-dialect: Ham-kyeong

Participants

- 126 Chinese Korean speakers (2015)
- 57 Seoul speakers for comparison (2011)

	Dandong		Hunchun		Seoul	
	Male	Female	Male	Female	Male	Female
Older (yob <1970)	14	20	13	17	17	15
Younger (yob >= 1970)	17	14	16	15	14	11

Stimuli

- /**y**sin/ ‘prestige’
- Part of a larger production list
- Two repetitions

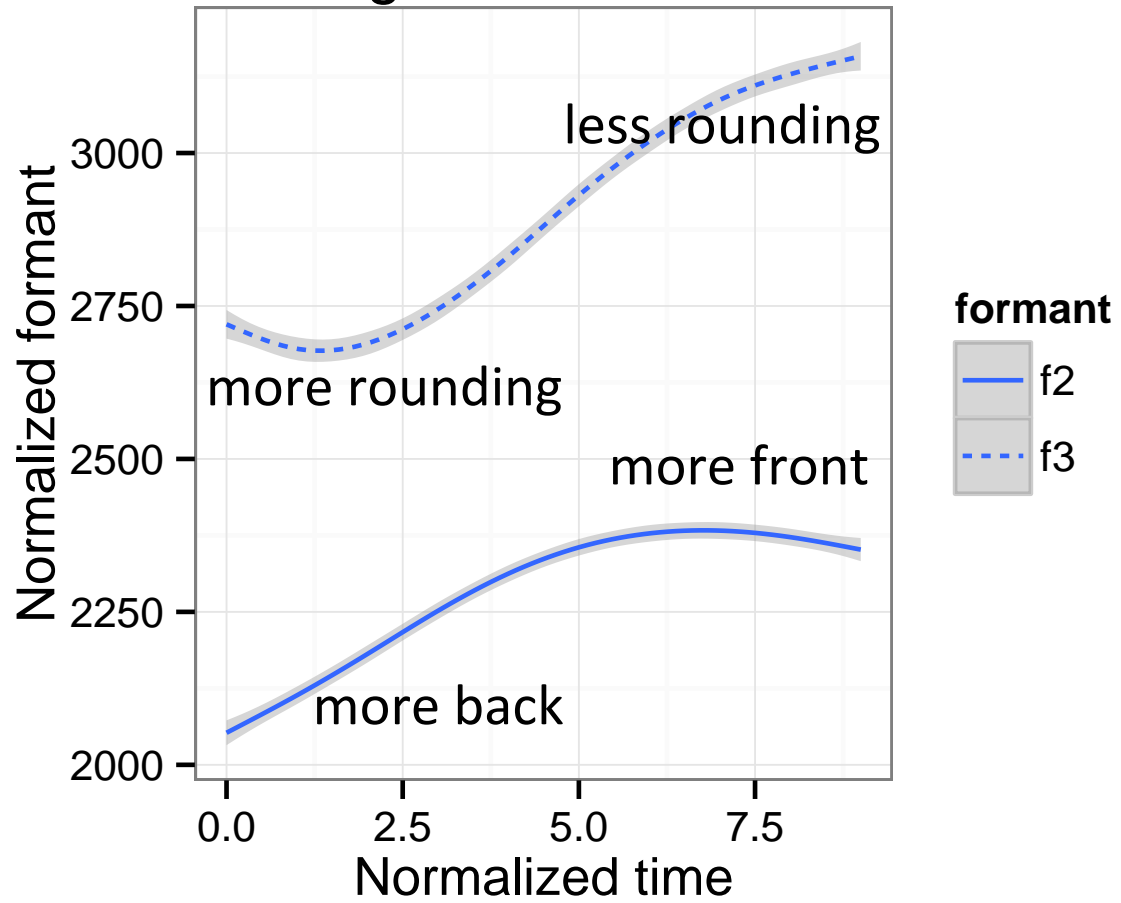
Acoustic measurements

- F1, F2, and F3 measured at 10 equally spaced time points across vowel duration
- F2 : acoustic correlate of tongue frontness
 - Higher F2 ~ fronter tongue body
- F3 : acoustic correlate of lip rounding
 - Lower F3 ~ more lip rounding

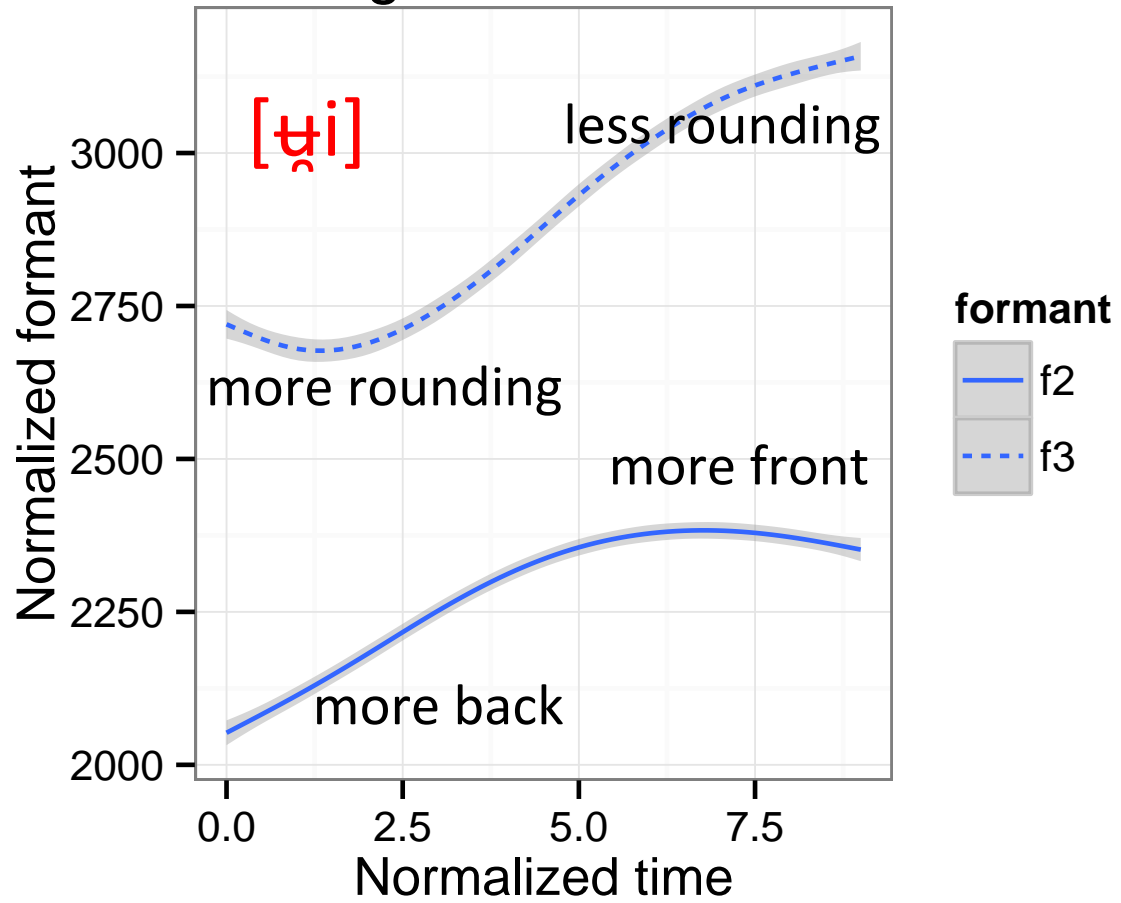
Normalization

- To allow for direct comparison of formant values across speakers of different age and gender
 - Z-score transformation based on formant measurements of all vowels at all 10 measurement points for a given speaker.
 - Conversion back to Hertz scale using the grand mean and standard deviation of all speakers' vowel measurements.

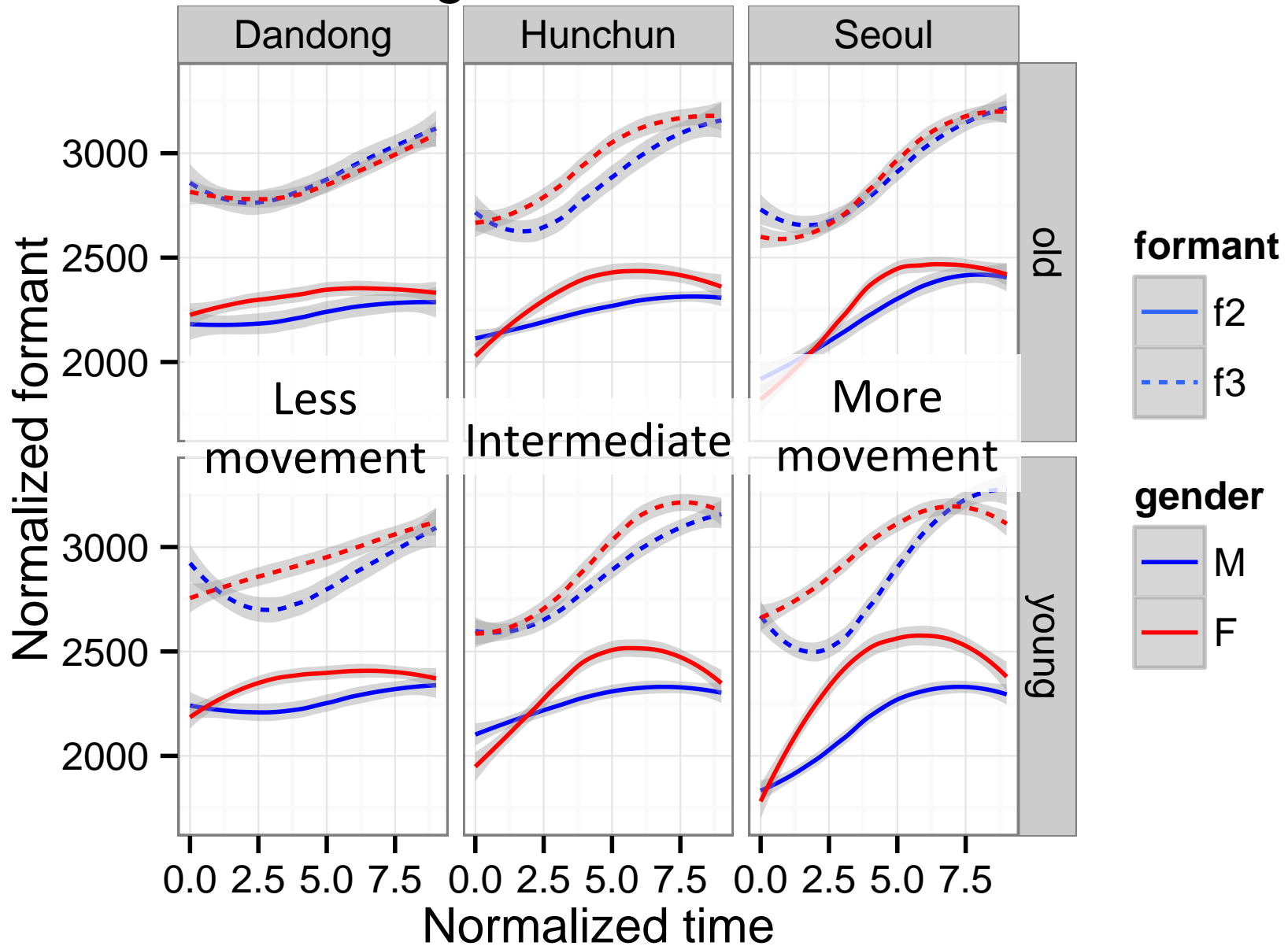
Average F2 & F3 Tracks



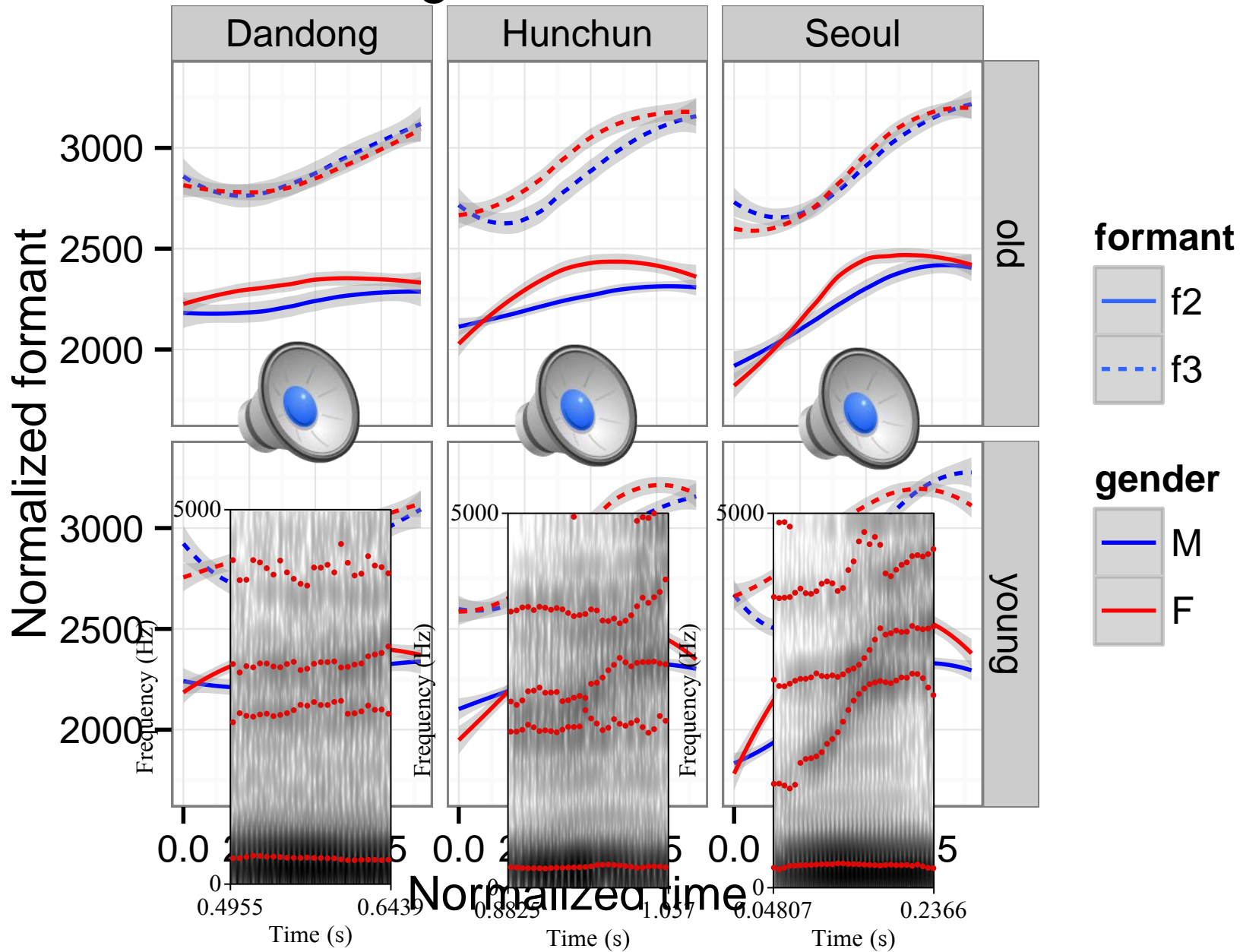
Average F2 & F3 Tracks



Average F2 & F3 Tracks

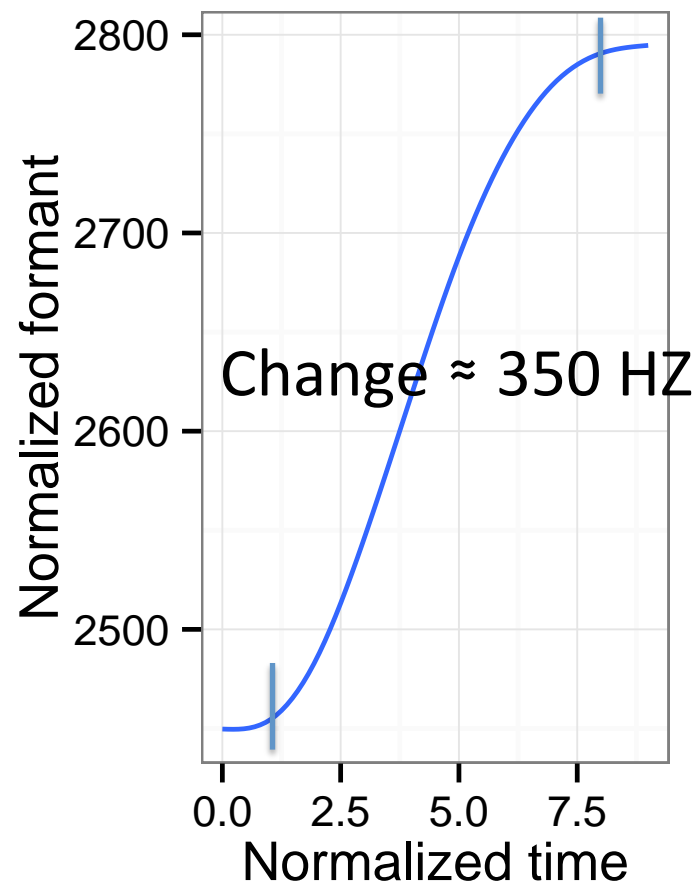


Average F2 & F3 Tracks

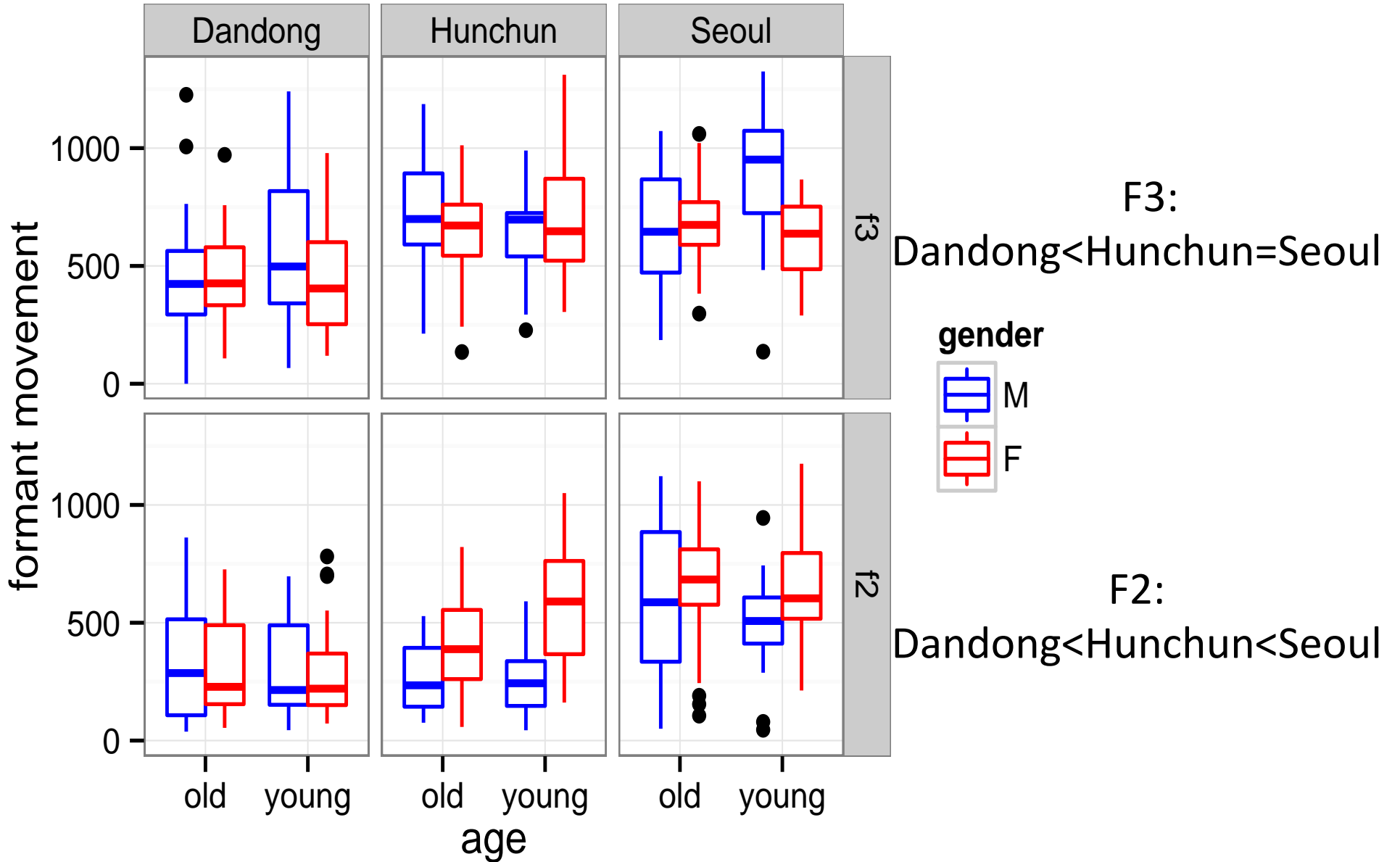


Formant movement

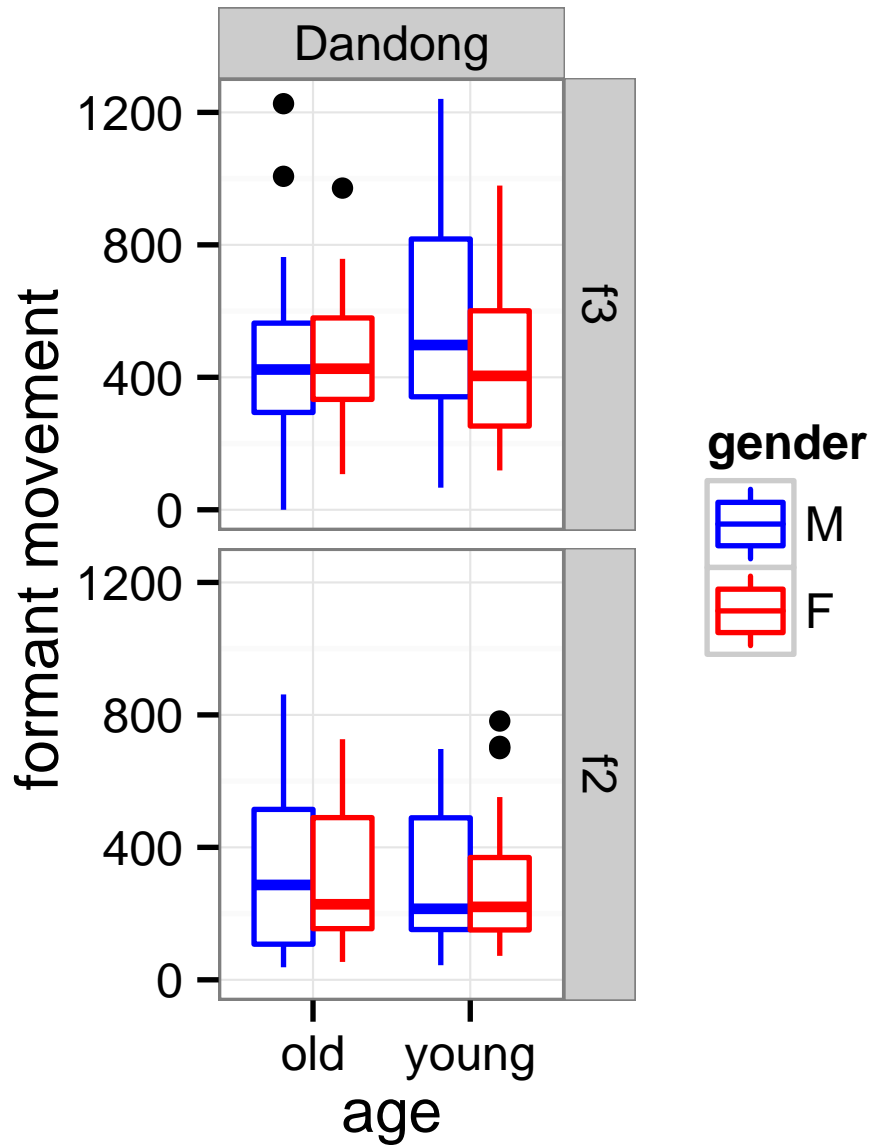
- To quantify the degree of formant movement
 - For each vowel, the difference between the maximum and the minimum formant values is calculated.
 - The measurements from the first and the last measurement points in the vowel are excluded.



Formant Movement



Formant Movement

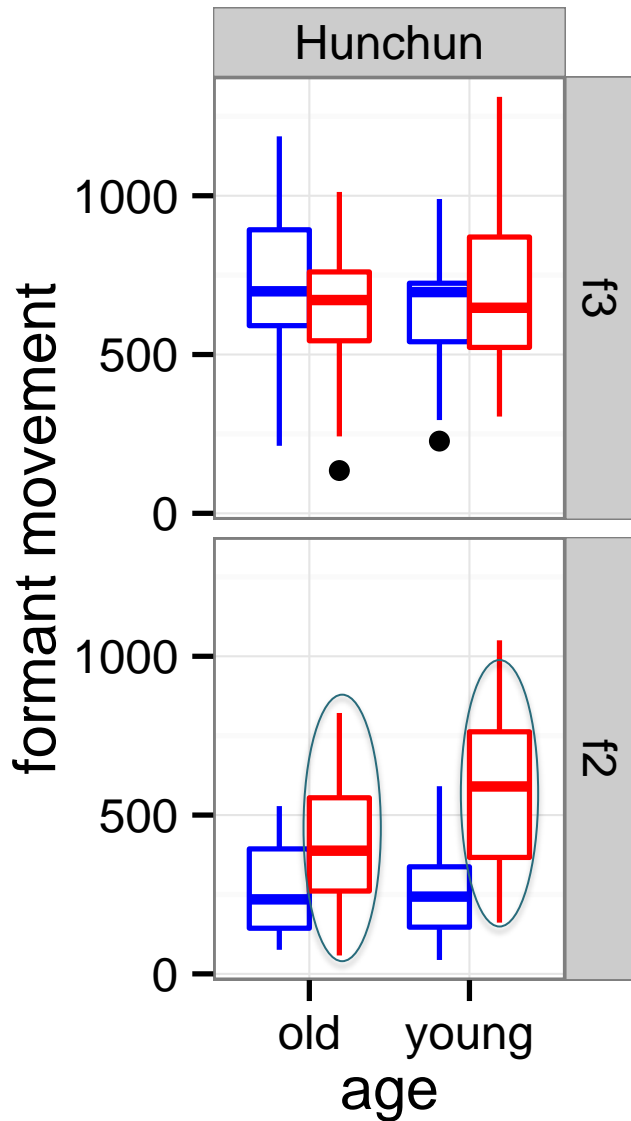


Dandong

- F2,F3: no effect of gender or age
- No evidence of change

Hunchun

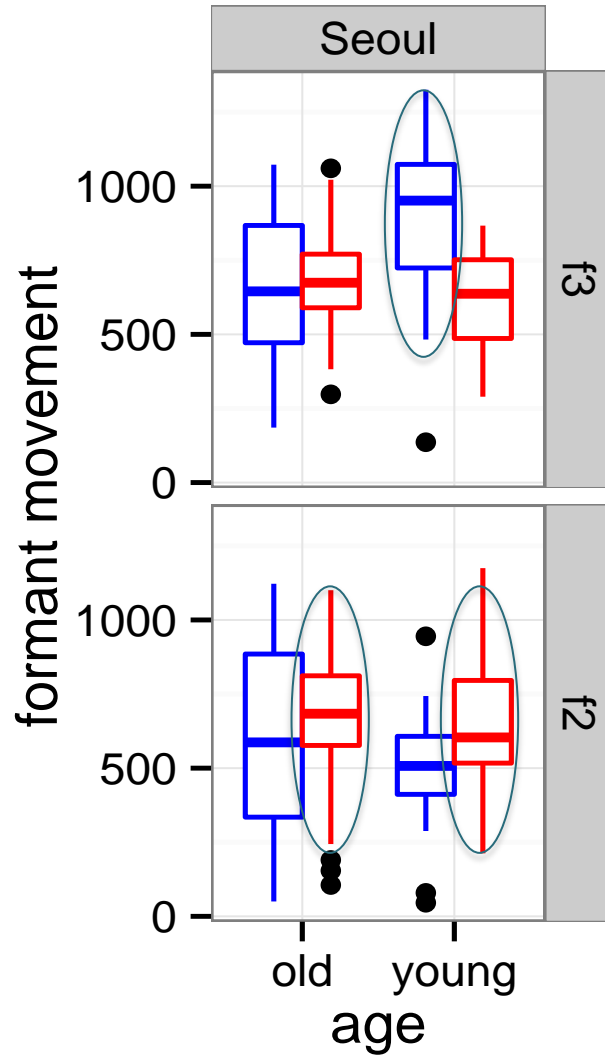
Formant Movement



- F3: no effect of gender or age
- F2 :
 - Male < Female
 - Female: Old < Young

Seoul

Formant Movement



- F3:
 - Younger males show more F3 movement

- F2 :
 - Male < Female (marginal)

Summary

	Dandong	Hunchun	Seoul
F3 (rounding)	Monophthongal	Diphthongal	Diphthongal
F2 (frontness)	Monophthongal	Monophthongal ~ Diphthongal	Diphthongal
	[y]	Male:[ɥi] Female:[ɥ̥i]	Male:[ɥ̥i] Female:[w̥i]

Questions

- Why is /y/ more diphthongal in Hunchun than in Dandong?
- Factors to consider
 - Proto-dialects
 - Mandarin /y/
 - Seoul influence
 - Mandarin dominance

Proto-dialects

- **Dandong** (Liaoning): Northwestern dialect (Phyeong-an, **PA**)
- **Hunchun** (Jilin): Northeastern dialect (Ham-kyeong, **HK**)

Proto-dialects

- Did **PA** have a more robust /y/ than **HK** at the time of Chinese Korean migration?
 - No. Available evidence suggests the opposite.
 - Early 20th century (Kwak 2004)

PA

i	ɨ	u
e	ʌ	o
ɛ	a	

HK

i	y	ɨ	u
e	∅	ʌ	o
ɛ		a	

Proto-dialects

- Did **PA** have a more robust /y/ than **HK** at the time of Chinese Korean migration?
 - No evidence of internal change ('drift') to develop monophthongal /y/ in **PA**.
 - Monophthongal /y/ in **Dandong** is likely an innovation of Chinese Korean.
 - Likely due to Mandarin influence (cf. Jin 2008).

Dandong vs. Hunchun

- Proto-dialects *X*
- Mandarin /y/

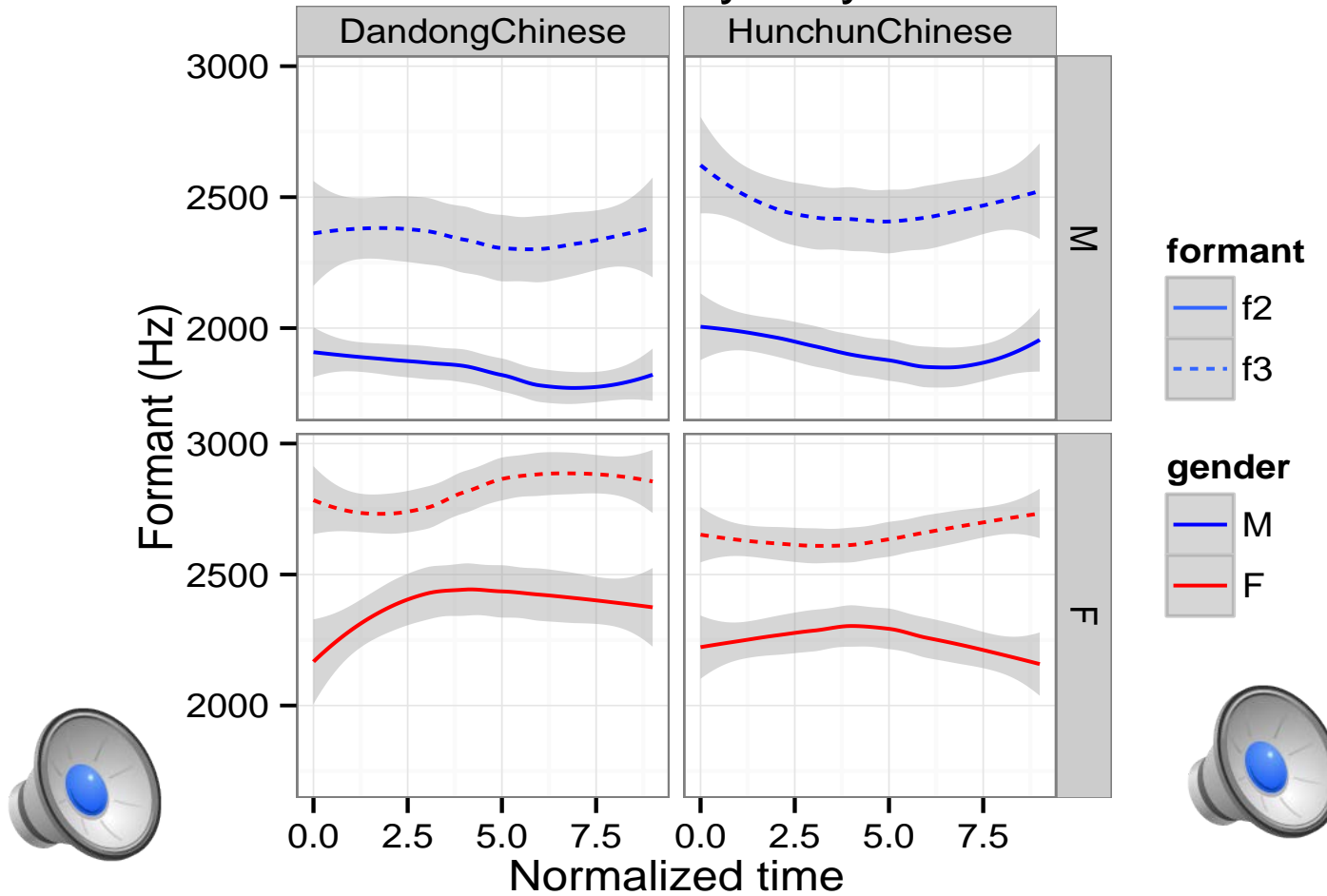
Mandarin /y/

- Is the difference in Korean /y/ between Dandong and Hunchun due to the difference in the realization of Mandarin /y/ in the local Mandarin varieties?

Mandarin influence

- Mandarin production data from local non-Korean Mandarin speakers
 - Dandong (4F,4M); Hunchun (3F, 5M)
 - Word: yu2 /y/ ‘fish, 鱼’
 - Part of a larger production study
 - 2 repetitions

Mandarin yu2 /y/



No difference between the two local Mandarin varieties

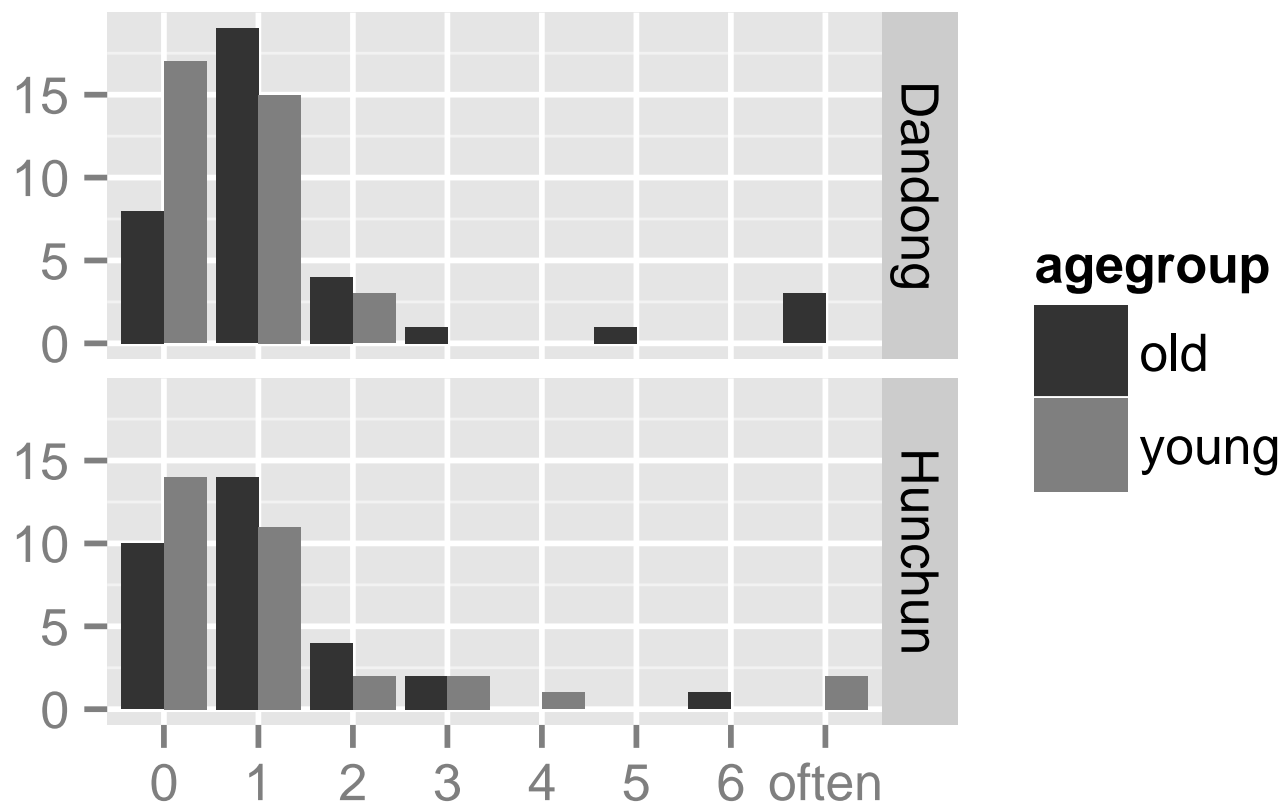
Dandong vs. Hunchun

- Proto-dialects ~~X~~
- Mandarin /y/ ~~X~~
- Seoul Korean

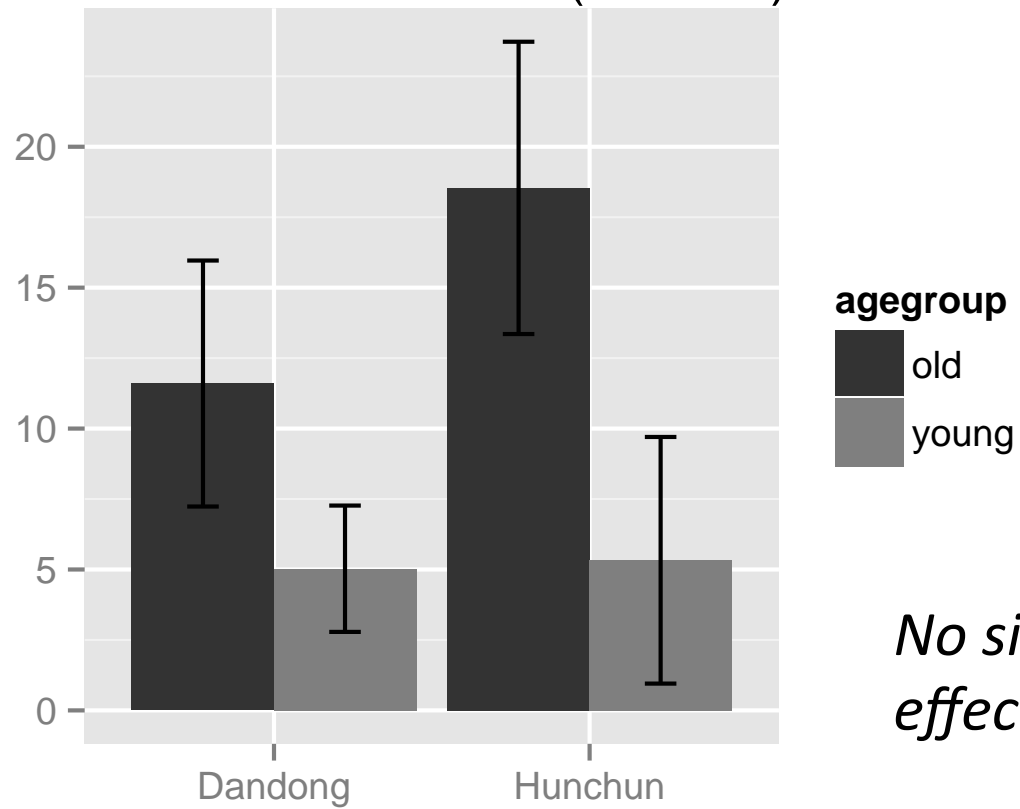
Contact with Seoul Korean

- Is the difference due to difference in contact with Seoul Korean?
- Measures of exposure to Seoul Korean
 - Number/Duration of visits to Seoul/South Korea
 - South Korean Media exposure (1-5)

Number of visits to Korea

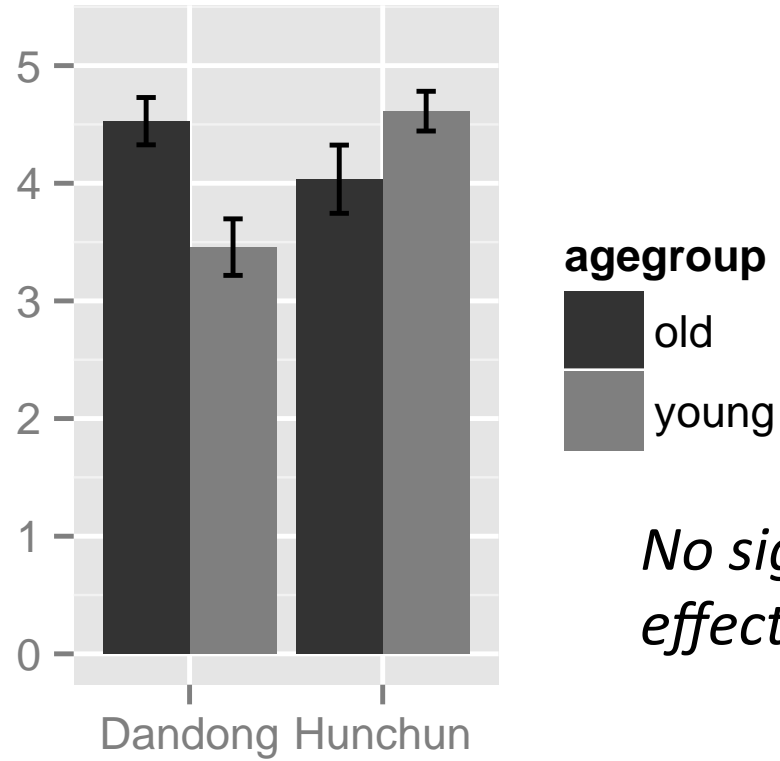


Mean visit duration (months)



No significant main effect of dialect

S. Korean Media



No significant main effect of dialect

Contact with Seoul Korean

- No consistent/substantial difference in terms of exposure to Seoul Korean.
- The difference between Dandong and Hunchun is not likely due to difference in contact with Seoul Korean.

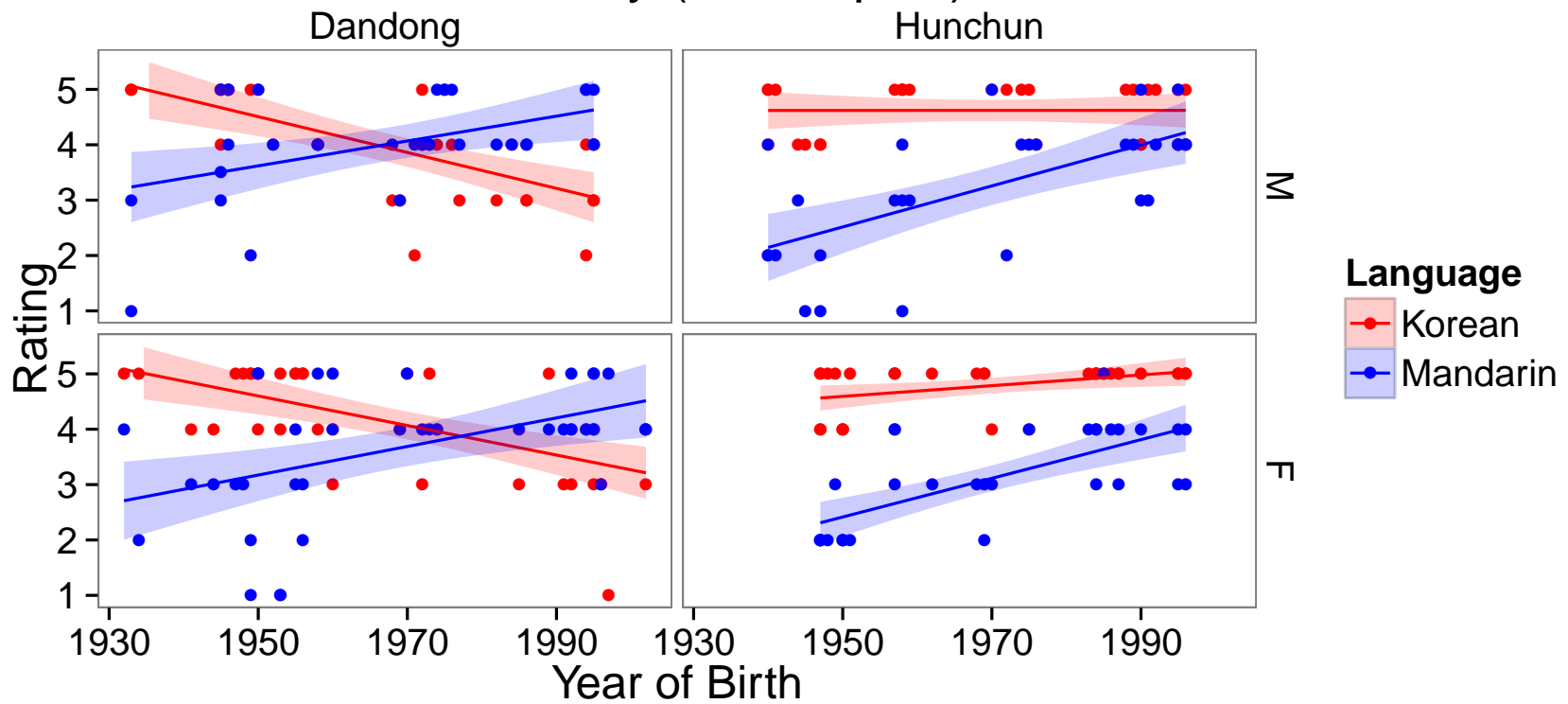
Dandong vs. Hunchun

- Proto-dialects ~~X~~
- Mandarin /y/ ~~X~~
- Seoul influence ~~X~~
- Mandarin dominance

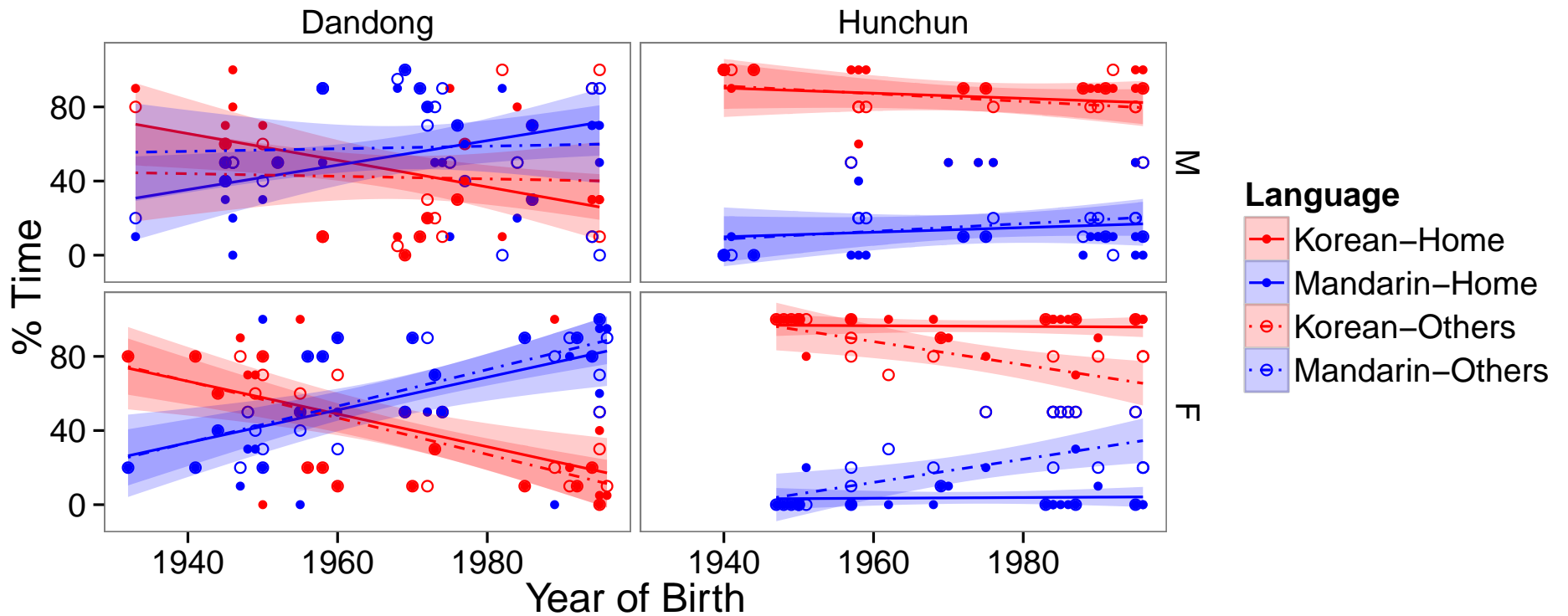
Status of Mandarin and Korean

- Dandong
 - Korean is a minority language (< 2%) in a large city
- Hunchun
 - 1/3 of the population speaks Korean
 - in Yanbian Korean Autonomous Prefecture with Korean-language TV/mass media and university
- Mandarin has a more dominant status in Dandong than in Hunchun.
- Mandarin and Korean proficiency self ratings
- Mandarin and Korean language use

Language proficiency (self-report)



Language use (self-report)



Dandong vs. Hunchun

- Proto-dialects ✗
- Mandarin /y/ ✗
- Seoul influence ✗
- Mandarin dominance ✓

Summary: Dandong vs. Hunchun

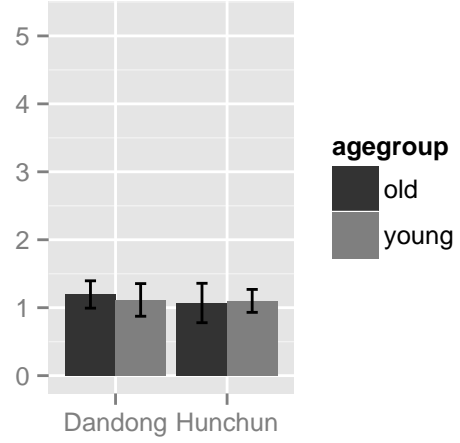
- Findings
 - /y/ is more monophthongal in Dandong than in Hunchun.
 - /y/ is stable in Dandong with no age or gender-based variation, while /y/ is becoming more diphthongal in Hunchun.
- Why?
 - Difference in Mandarin dominance
 - Pan-Korean change to diphthongize /y/ (phonologically marked) is blocked in Dandong due to strong Mandarin influence.

Thank you!

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N. Korean Media



Restructuring of vowel inventory (Kwak 2004, Kang et al. 2015)

i	(y)	ɨ	u
e	(ø)	ʌ	o
ɛ		a	

Northern dialects (PA & HK)

i	ɨ/u
e	ʌ/o
ɛ	a

Central dialects

i	ɨ	u/o
e/ɛ	a	ʌ

SouthEastern dialects

i	ɨ/ʌ	u
e/ɛ	a	o