Vowels of Korean dialects

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Monophthongs of Korean

i	(y)	ɨ	u
e	(ø)	ʌ	o
ɛ		ɑ	

- Divergent diachronic trends in Northern vs. Southern dialects
- /y/ and /ø/ are unstable or diphthongized in many dialects.

Northern dialects

- **Merger of back unrounded/rounded contrast**
- More advanced in NorthWest (Phyeongan) than in NorthEast (Hamkyeong)
- More advanced for mid (ʌ/o) than high vowels (ɨ/u)

(Kwak 2003, Chung 2011, Kang SK 1996, 1997, So 2010)

i	ɨ/u
e	ʌ/o
ɛ	ɑ

Southern dialects

- **Merger of height contrast**
- Central (Seoul, Chungcheong) (Kang to appear, Yoon et al. to appear, Han & Kang 2013, Cho 2013)
- SouthEast (Kyeongsang) (Kwak 2003, Yoon et al. to appear, Ahn 2012, Jang & Shin 2006)

i	ɨ	u/o
e/ɛ	ɑ	ʌ

i	ɨ/ʌ	u
e/ɛ	ɑ	o

Chinese Korean

- Varieties of Northern dialects of Korean as spoken by Ethnic Koreans in China.
- Observed to show a similar trend of merger found in Homeland cognate dialects (Kwak 2000).
- Limited instrumental studies, especially for vowels (cf. H Kim 2009, Jin 2012).

Current study

Speakers

- Chinese Korean
  - NorthEast (Hamkyeong): M11, F10 (Year of birth: 1936~1966)
  - NorthWest (Phyeongan): M13, F10 (Year of birth: 1937~1969)
- Seoul Korean
  - Older: M17, F14 (Year of birth: 1943~1966)
  - Younger: M13, F10 (Year of birth: 1981~1992)

Speech material

- Eight monophthongs in isolation, presented in *Hangul*, 3 repetitions

Data collection

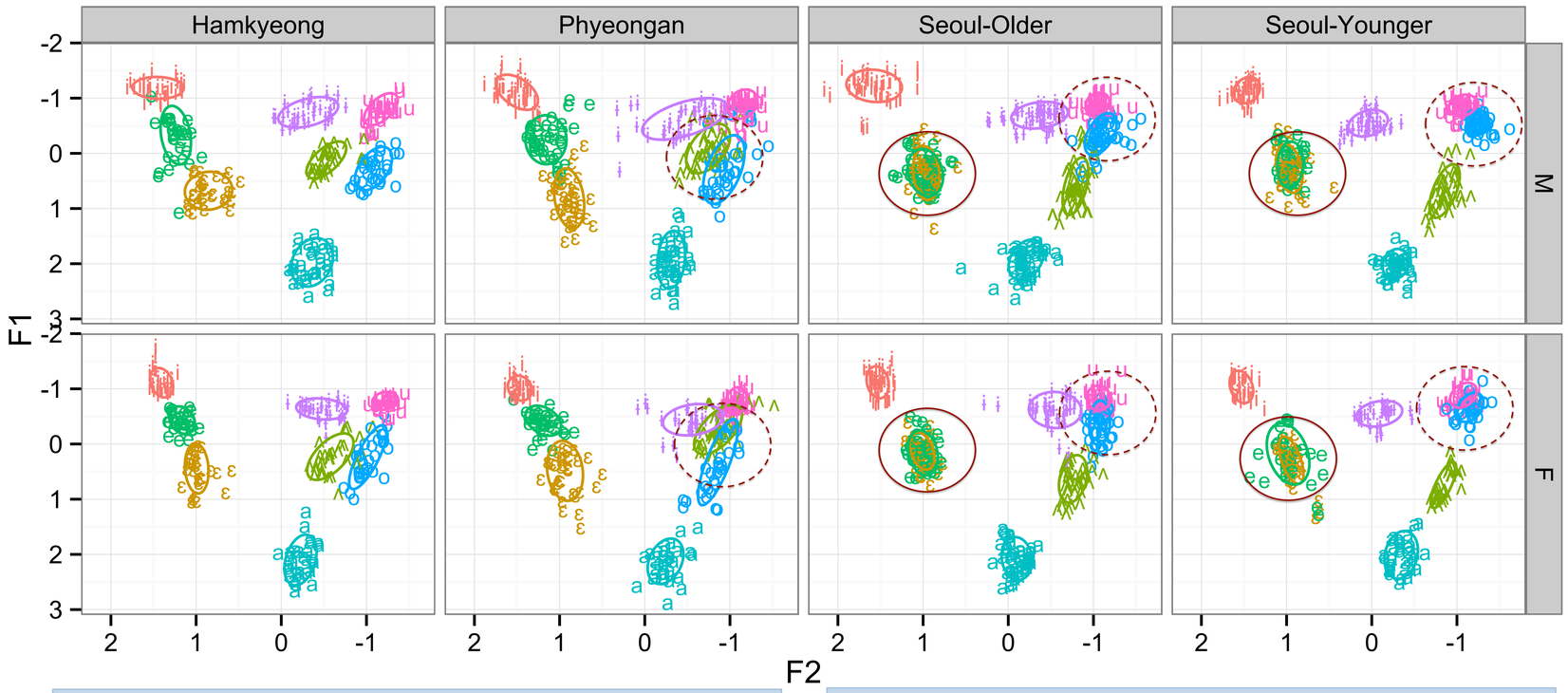
- Qingdao & Dandong, China; Summer 2011

Acoustic Analysis

- Formant measurements averaged over mid 20% of vowel duration

Statistical Analyses

- Normalization of formant measurements: Lobanov
- Repeated Measures Multivariate Analysis of Variance: F1&F2
- Followup Univariate linear mixed-effects analyses: F1, F2
- Alpha=0.05



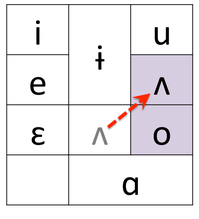
Hamkyeong

- RM-MANOVA: All vowel pairs are distinct.
- **Back vowels**: Back vowel pairs /ɨ/-/u/ and /ʌ/-/o/ are distinct in F2.
- **Back vowels and height interaction**: F2 difference is smaller for the mid back vowel pair than the high back vowel pair.
- **No sign of back vowel merger yet:** Hamkyeong vowels retain a clear 3-way height contrast in both front and back vowels and also retain a clear rounding contrast in non-low back vowels. More "conservative" than reported for homeland cognate dialects.

i	ɨ	u
e	ʌ	o
ɛ	ɑ	

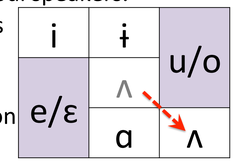
Phyeongan

- RM-MANOVA: All vowel pairs are distinct.
- **Back vowel merger**: /ɨ/-/u/ pair is distinct in F2. /ʌ/-/o/ pair is distinct in F2 for males but not for females. These pairs show a F1 difference.
- **Back vowels and height interaction**: F2 contrast reduction in back vowels is more advanced for the mid vowel pair than the high vowel pair.
- **Back vowels and gender interaction**: F2 contrast reduction in back vowels is more advanced for female speakers than for male speakers.
- **Horizontal (F2) compression**: In Phyeongan, F2 contrast in back vowel pairs is reduced or lost but the pairs are distinct in F1 and are not "merged" (yet).
- F2 contrast is converted to F1 contrast.
- Confirms that Phyeongan leads this change ahead of Hamkyeong.



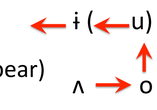
Seoul Korean

- RM-MANOVA: All vowel pairs are distinct except for /e/ and /ɛ/.
- **Front vowels merger**: /e/-/ɛ/ pair does not differ in F1 or F2 in all speaker groups (young & old, male & female). Merger is complete.
- **Back vowel shift:**
  - /ʌ/ is low and back (and rounded) and is distinct from all other back vowels both in F1 and F2.
  - /o/ is raised and backed toward /u/, more so for Younger than Older Seoul speakers. But, /o/-/u/ remains distinct and not merged (yet).
  - /ɨ/ is more fronted/centralized in Younger Seoul speakers.
  - Fronting of /u/ reported in Kang (to appear) is not observed.
- **Vertical compression:** Similar to SouthEastern dialects, Seoul Korean shows height compression but the pattern of merger is different.



Summary

- **Chinese Korean** vowels show signs of **horizontal compression**—merger/approximation of back rounded and unrounded vowels.
  - The change is less advanced than in the homeland varieties.
  - This may be due to the nature of stimuli (vowels in isolation) and/or the relatively older age of the speakers.
- **Seoul Korean** vowels show signs of **vertical compression**—complete merger of /e/-/ɛ/ and approximation of /u/-/o/.
  - The results replicate previous studies.
  - Chain shift of back vowels observed in Kang (to appear) replicated except for no /u/ fronting.



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