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
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

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th></th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>i</td>
<td>y</td>
<td>i</td>
</tr>
<tr>
<td>mid</td>
<td>e</td>
<td>ø</td>
<td>∧</td>
</tr>
<tr>
<td>low</td>
<td>ε</td>
<td></td>
<td>a</td>
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</table>
# Korean Monophthongs

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>i (y&gt;wi)</td>
<td>i</td>
</tr>
<tr>
<td>mid</td>
<td>e (ø&gt;we)</td>
<td>θ</td>
</tr>
<tr>
<td>low</td>
<td>(ɛ&gt;e)</td>
<td>a</td>
</tr>
</tbody>
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Korean Monophthongs

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>i</td>
<td>i, u</td>
</tr>
<tr>
<td>mid</td>
<td>e</td>
<td>Λ, o</td>
</tr>
<tr>
<td>low</td>
<td>(ε&gt;e)</td>
<td>a</td>
</tr>
</tbody>
</table>

(y>wi)
/y/

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

<table>
<thead>
<tr>
<th>Late Middle Korean</th>
<th>[uj] [oj]</th>
<th>[aj] [ʌj]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contemporary Korean</td>
<td>[y] [ø]</td>
<td>[ɛ] [e]</td>
</tr>
<tr>
<td>(diphthongization)</td>
<td>[wi] [we]</td>
<td></td>
</tr>
<tr>
<td>(glide deletion)</td>
<td>[i] [e]</td>
<td></td>
</tr>
</tbody>
</table>
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)

<table>
<thead>
<tr>
<th></th>
<th>Dandong</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Older (yob &lt;1970)</td>
<td>14</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>Younger (yob &gt;= 1970)</td>
<td>17</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>
Stimuli

• /ysin/ ‘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

- More rounding
- Less rounding
- More front
- More back

Normalized time

Normalized formant

Formant
- f2
- f3
Average F2 & F3 Tracks

Normalized formant

Normalized time

more rounding
less rounding
more front
more back

formant

f2
f3
Average F2 & F3 Tracks

Dandong

Hunchun

Seoul

Normalized formant

Normalized time

Less movement

Intermediate

More movement

Normalized formant

Gender

M

F

Formant

f2

f3

Old

Young
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.

Change $\approx 350$ HZ
Formant Movement

F3:
Dandong < Hunchun = Seoul

F2:
Dandong < Hunchun < Seoul
Dandong

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

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

- F3:
  - Younger males show more F3 movement

- F2:
  - Male < Female (marginal)
## Summary

<table>
<thead>
<tr>
<th></th>
<th>Dandong</th>
<th>Hunchun</th>
<th>Seoul</th>
</tr>
</thead>
<tbody>
<tr>
<td>F3 (rounding)</td>
<td>Monophthongal</td>
<td>Diphthongal</td>
<td>Diphthongal</td>
</tr>
<tr>
<td>F2 (frontness)</td>
<td>Monophthongal</td>
<td>Monophthongal</td>
<td>Diphthongal</td>
</tr>
<tr>
<td></td>
<td>~ Diphthongal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female:[ɰi]</td>
<td>Female:[[w̠i]</td>
</tr>
</tbody>
</table>
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)

<table>
<thead>
<tr>
<th></th>
<th>PA</th>
<th>HK</th>
</tr>
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<tbody>
<tr>
<td>i</td>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>i</td>
<td>u</td>
<td>y</td>
</tr>
<tr>
<td>e</td>
<td>Ø</td>
<td>e</td>
</tr>
<tr>
<td>e</td>
<td>λ</td>
<td>e</td>
</tr>
<tr>
<td>ε</td>
<td>a</td>
<td>ε</td>
</tr>
<tr>
<td>ε</td>
<td>a</td>
<td>ε</td>
</tr>
</tbody>
</table>
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.
Dandong vs. Hunchun

- Proto-dialects ✗
- 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
No difference between the two local Mandarin varieties
Dandong vs. Hunchun

• Proto-dialects ✗
• Mandarin /y/ ✗
• 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)
Mean visit duration (months)

No significant main effect of dialect
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 ✗
- Mandarin /y/ ✗
- Seoul influence ✗
- 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)

Dandong

Hunchun

Year of Birth

Rating

Language
- Korean
- Mandarin
Language use (self-report)

![Language use charts for Dandong and Hunchun showing trends in language use by year of birth and time spent on language.]
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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Restructuring of vowel inventory (Kwak 2004, Kang et al. 2015)

<table>
<thead>
<tr>
<th></th>
<th>i</th>
<th>(y)</th>
<th>ï</th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td>e</td>
<td>ñ/ø</td>
<td>ñ</td>
<td>ø</td>
<td>o</td>
</tr>
<tr>
<td>ð</td>
<td>α</td>
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Northern dialects (PA & HK)

<table>
<thead>
<tr>
<th></th>
<th>i</th>
<th>ï/u</th>
<th>ï</th>
<th>u</th>
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<tbody>
<tr>
<td>i</td>
<td>ñ/u</td>
<td>ñ</td>
<td>ø</td>
<td>o</td>
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<tr>
<td>e</td>
<td>ñ/ø</td>
<td>ñ</td>
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Central dialects

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<th>i</th>
<th>ï</th>
<th>u/o</th>
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<tbody>
<tr>
<td>e/ð</td>
<td>ñ</td>
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<td>ø</td>
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<td>ð</td>
<td>α</td>
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SouthEastern dialects

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<thead>
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<th>i</th>
<th>ï/λ</th>
<th>u</th>
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<tbody>
<tr>
<td>e/ð</td>
<td>ñ</td>
<td></td>
<td>ø</td>
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<tr>
<td>ð</td>
<td>α</td>
<td></td>
<td>o</td>
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