DENASALIZATION IN KOREAN

- Nasals /m/, /n/ in Seoul Korean (SK) may be denasalized in word-initial position (Martin 1951, Umeda 1957, Chen and Clumeck 1975, Yoshida 2008, Kim 2011, Yoo 2015)
  - Previous production studies employed a small number of speakers, focusing on (i) the Seoul dialect and (ii) younger speakers’ speech
  - This study examines large-scale production data of nasal realization from speakers of two dialects of Korean (both South and North) with different age groups

Q1: Is the denasalization an ongoing sound change in Seoul Korean?

- Hypothesis: If so, younger speakers will denasalize more frequently than older speakers

Q2: Does the denasalization occur in North Korean (NK) dialects?

- This study investigates the word-initial nasal realizations in an NK dialect (Northern Hamkyeong), of which phonetic properties of the nasal are understudied, and sees if the denasalization also occurs in NK

Q3: Does NK speakers in Seoul learn a phonetic feature of the second dialect, the denasalization of SK? (cf. Dialect acquisition; Harrington et al. 2001, Sanoff and Blondeau 2007, Kang and Han 2013)

- Hypothesis: The longer NK speakers have lived in the South, and/or the more contact with SK speakers they have, the more frequently they will denasalize

- Other factors investigated:
  (i) speaker’s gender: not previously studied
  Hypothesis: Young female speakers, known to lead sound change (Llabov 1990, Kang 2014), may denasalize more often
  (ii) nasal place: inconsistent previous results (e.g., /m/ more denasalized in Chen & Clumeck 1975 vs. /n/ more denasalized in Kim 2011)

METHODS

- Data collection: December 2016 ~ January 2017 in Seoul
- Participants:
  - NK: Northern Hamkyeong dialect
    - NK refugees from Northern Hamkyeong (85% of the refugees in South Korea), who reside in Seoul
    - Few studies on its phonetics
  - SK: Seoul dialect
    - Age: old (>40) vs. young (<40)
  - Length of residence (for NK): long (≥3 yrs) vs. short (<3 yrs)
  - SK contact (for NK): more (more contact with SK people) vs. less (more contact with NK people), based on a survey

<table>
<thead>
<tr>
<th>dialect</th>
<th>NK (n=35; 4M 31F)</th>
<th>SK (n=20; 10M 10F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>age</td>
<td>old (n=18)</td>
<td>young (n=17)</td>
</tr>
<tr>
<td></td>
<td>old (n=10)</td>
<td>young (n=10)</td>
</tr>
<tr>
<td>length of residence</td>
<td>long (n=9)</td>
<td>short (n=10)</td>
</tr>
<tr>
<td></td>
<td>long (n=7)</td>
<td>short (n=10)</td>
</tr>
</tbody>
</table>

- Material: 7 /m/-/n/-initial and 15 /n/-initial words, read in isolation
  - e.g., /maku/ ‘the youngest child’ /nalu/ ‘heater’
  - /muko/ ‘traitor’ /nol/ ‘tomorrow’
  - /muaje/ ‘trade route’ /nols/ ‘song’

DENASALIZATION IN NK

- Significant age difference: denasalization more frequent in SK (48.8%) than in NK (21.7%; p<.001)
  - weak nasal, stop: old < young (p<.001)
  - No segmental difference between /m/ and /n/
  - Flapped variant of /n/ in NK (r below):
    - misinterpretation of the [n] as a result of /l/ → [n] in word-initial position in SK

DENASALIZATION IN SK

- Significant age difference: denasalization more frequent in younger speakers’ speech (66.7%) than in older speakers’ speech (31.7%; p<.001)
  - The initial denasalization is an active sound change in SK
    - weak nasal: old < young (p<.01)
    - short nasal, stop: old < young (p<.05)
    - No significant gender difference

DENASALIZATION IN KOREAN

- Significant dialectal difference: denasalization is more frequent in SK (48.8%) than in NK (21.7%; p<.001)
  - weak nasal, stop: old < young (p<.001)
  - No segmental difference between /m/ and /n/
  - Flapped variant of /n/ in NK (r below):
    - misinterpretation of the [n] as a result of /l/ → [n] in word-initial position in SK

NO DIALECT ACQUISITION

- No significant differences in all the denasalized realizations by the length of residence in Seoul and by the degree of SK contact

- No evidence for the acquisition of denasalization in NK may indicate that denasalization is too subtle phonetic change to learn in Korean (cf. partial effects of dialect acquisition in word-initial liquid realization of NK (Yun & Kang 2018))

ACOUSTIC ANALYSIS

1. Sonorant nasal
   - Steady state energy weaker than V
   - Anti-formants

2. Weak nasal
   - Huge drop in amplitude
   - Not short in duration

3. Short nasal
   - No steady state
   - Very short in duration

4. Stop
   - Clear release burst
   - With or without short aspiration

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