English influence as a possible barrier for the sound change in Korean

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Background

- Voice Onset Time (VOT) in the laryngeal contrast in Korean

Table 1. Mean VOTs (ms) and ranges from 1960’s to present. Their aggregated ranges are given in parenthesis. (from Kim, 2012)

<table>
<thead>
<tr>
<th>Year</th>
<th>Tense</th>
<th>Lax</th>
<th>Aspirated</th>
<th>Aspirated-Lax</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960’s-1970’s</td>
<td>11 (9-22)</td>
<td>32 (15-100)</td>
<td>104 (36-210)</td>
<td></td>
</tr>
<tr>
<td>1990’s-2000</td>
<td>14 (9-30)</td>
<td>45 (13-59)</td>
<td>91 (75-121)</td>
<td></td>
</tr>
<tr>
<td>2004-2012</td>
<td>15 (2-26)</td>
<td>63 (17-171)</td>
<td>77 (22-196)</td>
<td></td>
</tr>
</tbody>
</table>

- VOT merger between lax and aspirated stops in Seoul Korean
- Lax stops become longer and aspirated stops become shorter.
- Factors for VOT merger: age (Silva, 2006), sex (Kang & Nagy, To appear; Oh, 2011), & L2 proficiency (Kim, 2011)

Research Questions

1) Is the VOT merger between lax and aspirated stops observed among (“uncontaminated”) Koreans in their native country?
2) Can speakers’ language attitude account for individual differences in the VOT merger phenomenon?

Methods

Stimuli:
- Korean words in phrase-initial position; vowel /a/ following the target
- 3 contrasts (tense, lax, & aspirated) X 3 places (bilabial, alveolar, & velar) X 4 syllable lengths (one to four syllables)
  e.g., /p/aLLt/ ‘laundry’, /p/ac/li ‘pants’, /p/atol/ ‘wave’, /p/aL/ ‘green onion’

Participants:

Table 2. Characteristics of the participants in four groups

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Age (yrs)</th>
<th>Self-E</th>
<th>Self-E use</th>
<th>Motivation</th>
<th>Motivation use</th>
</tr>
</thead>
<tbody>
<tr>
<td>HateE-M</td>
<td>9</td>
<td>23 (16-29)</td>
<td>4.44 (1-8)</td>
<td>23.3 (12-32)</td>
<td>12.64 (6.89)</td>
<td>9.6 (7.97)</td>
</tr>
<tr>
<td>LoveE-F</td>
<td>10</td>
<td>23 (16-29)</td>
<td>4.44 (1-8)</td>
<td>23.3 (12-32)</td>
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Averages and standard deviations (in parenthesis): Attitude: attitude toward English (from 1 ‘I really hate English’ to 5 ‘I really love English’). Self-E: pronunciation. Self-assessed accuracy in English (from 1 very heavy accent to 9 ‘better-like pronunciation’). Self-E use: Amount of use of English in the last months. Motivation: motivation toward correct English pronunciation (from 1 not important to 11 very important). Motivation: motivation toward correct English pronunciation (from 1 not important to 11 very important).

Task: Reading the target words in a frame sentence in normal speed
- igeon ________ rago hayoe. (“This is called ________.”)

Analysis: Normalized VOT (VOT/sentence duration)

VOT: the interval between the onset of the stop release and the zero crossing point of the first periodic cycle of the following vowel

Sentence duration = the duration of the frame sentence

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Tense</th>
<th>Lax</th>
<th>Aspirated</th>
<th>Aspirated-Lax</th>
</tr>
</thead>
</table>
| 4 syll | 3 contrasts x 3 places | 36 measures for each subject

Results

- Tense < Lax, Aspirated (p < .01, 2-tailed)
- Lax = Aspirated stops (t(467) = .24, p = .803)

Fig. 1. Normalized VOT for Tense, Lax, & Aspirated stops (All groups)

- HateE-M showed the VOT merger (t(119) = 5.27, p < .01)
- LoveE-F (t(107) = 4.82, p < .01)
- Lax & Tense stops: Female > Male (p < .05)
- Aspirated stops: Male > Female (p < .01)

Fig. 2. Normalized VOT in Male & Female groups

- LoveE-M did not show the VOT merger while HateE-M did.
- Answer to RQ2: Yes (among male speakers)

New Questions

NQ1) Why didn’t the LoveE-M group show the VOT merger?
NQ2) Why did only males, not females, show the language attitude influence?

Discussion & Summary

- Not all but only the HateE-M group failed to distinguish lax from aspirated stops in VOT.
- However, VOTs were higher in lax stops than in aspirated stops among female speakers (both HateE-F & LoveE-F).
- Females lead the sound change (Kang & Nagy, To appear).
- Answer to RQ1: Yes (if the VOT merger refers to the VOT changes of aspirated and lax stops rather than the actual merger)
- LoveE-M did not show the VOT merger while HateE-M did.
- Answer to RQ2: Yes (among male speakers)

Korean Heritage speakers in Toronto, Canada (Kang & Nagy, To appear)
- Older males → Young males: the role of F0
- Older females → Younger females: the groups are similar.
- English influence? Young females don’t entirely give up the VOT contrast, which is a primary cue in English. “Roadblock”

NQ1) LoveE-M may be more attactive to the VOT contrast in English & Korean, blocking them from following the VOT sound change.
- cf. L1-L2 category assimilation in VOT for English & Korean?
  e.g., Lax stops – English voiced stops, Park & de Jong, 2008

NQ2) Females are at the final stage of the sound change; VOT is not their concern at all for lax-aspirated stop contrast. So, the VOT contrast in English may not transfer to L1 categories.
- cf. Slower speech rate among LoveE-F (Clear speech mode?)

References


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