[2-16] Do pitch and voice quality cue word-initial “voicing” in Tōhoku Japanese?
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Historical background and contemporary cross-dialect variation

- Old Japanese voiced stops are reconstructed as prenasalized [ʔ] (Takada 2011).
- Modern dialects include examples such as [budo:] 'grape' (Shanghai [bu-dɪ])
- The influx of loanwords from Middle Chinese — e.g., [daku] ‘embrace’, [bako] ‘knife’
- The potential merger in progress in the Tokyo area (Fig. 3) suggests a sound change in progress there.

What are the cues to the word-initial contrast in the Tōhoku-dialect speakers?

- Given the cross-dialect differences and the potential merger in progress in the Tokyo area, two questions arise about the realization of the voicing contrast in the Tōhoku dialect region:
  1. What is the distribution of VOT values for voiceless /p, t, k/ versus “devoiced” /b, d, g/?
  2. Are there other secondary cues, such as differences in voice quality or pitch on the following vowel?

Measures of voicing or aspiration (VOT) and of voice quality (H1-H2)

- Figures 4 and 5 show box plots of VOT and H1-H2 values for /p, t, k/ versus /b, d, g/.
- The H1-H2 values show more overlap, but the median values for /b, d, g/ are consistently lower (more aspirated) than those for /p, t, k/.

Sound change (merger?) in progress in Tokyo-area speakers

- Figures 6 and 7 show box plots of voice quality (H1-H2) and fundamental frequency (H0) for /p, t, k/ versus /b, d, g/.
- The H1-H2 values show more overlap, but the median values for /b, d, g/ are consistently lower (more aspirated) than those for /p, t, k/.

Visual representation of data:

- Figures 1-4: Box plots of voice onset time (VOT) and H1-H2 values for /p, t, k/ versus /b, d, g/.
- Figures 5-7: Box plots of voice quality (H1-H2) and fundamental frequency (H0) for /p, t, k/ versus /b, d, g/.

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