

Voicing of geminate obstruents in Kyushu dialects of Japanese

Background

In this study, I describe acoustic-phonetic realization of voiced geminate obstruents in three Kyushu dialects: Nagasaki, Amakusa-Hondo, and Western Saga. As Kawahara (2006) demonstrated, glottal vibration stops in the middle of closure for voiced geminates, but not for singletons in Tokyo Japanese as is shown in Fig. 1.

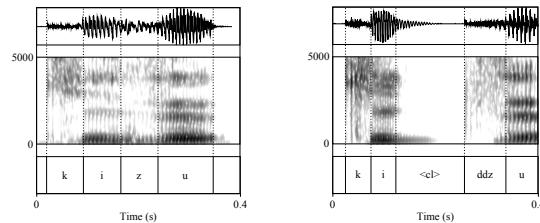


Fig. 1: Phonetic realization of singleton (left) and geminate (right) obstruents in Tokyo Japanese

Although voiced geminate obstruents is founded only in foreign words in Tokyo Japanese, we can find these words also in native and Sino-Japanese words in dialects. For example, there are expressions such as *kob-ba* "this-ACC" *kuz-zo* "come-PRT" in the Amakusa-Hondo dialect. That there are many native and Sino-Japanese words which include voiced geminate obstruents would mean that the phonetic realization in the dialects might be different from Tokyo Japanese.

Observation

I conducted fieldwork experiments in three dialects in Kyushu area: Nagasaki, Amakusa-Hondo, and Western Saga, which have voiced geminate obstruents in native and/or Sino-Japanese words. Test words are native and Sino words in Amakusa-Hondo and Western Saga, and foreign loanwords in Nagasaki. I measured duration of closure voicing and closure duration.

The overall results show that voicing is found in all over closure duration in Nagasaki and Amakusa-Hondo, but not in Western Saga. The ratio between singleton and geminate is 1:2.88 (/d/ and /dd/) in Nagasaki, 1:2.62 (/b/ and /bb/) and 1:3.97 (/d/ and /dd/) in Amakusa-Hondo, and 1:1.94 (/d/ and /dd/) in Western Saga. Fig. 2 shows the spectrogram and sound wave in the Nagasaki dialect.

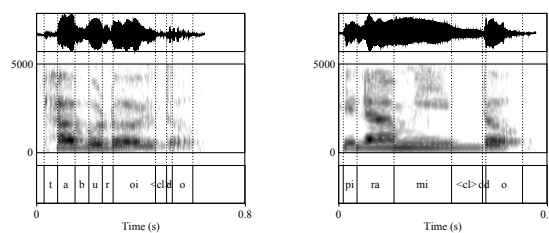


Fig. 2: Phonetic realization of singleton (left) and geminate (right) obstruents in the Nagasaki dialect

Discussion

The measurement above means that (i) there is a regional variation in voicing of geminate obstruents, (ii) there is few correlation between voicing of geminate obstruents and its closure duration. Moreover, there is a possibility that phonological devoicing such as *baggu* → *bakku* "bag" is not found in these dialects, because Kawahara (2006) argues that the half-devoicing in geminate obstruents leads phonological devoicing in Tokyo Japanese.