

Production of Japanese geminates by native English speakers: Durational accuracy and native speaker evaluation

Yukari Hirata (Colgate University) and Izumi Takiguchi (Bunkyo Gakuin University)

The study presented in this talk examines whether learners of Japanese as a second language make a significant progress in accurately producing Japanese single and geminate stops after being immersed in Japan. Production and perception of this consonant contrast is known to be difficult for learners of Japanese whose native language does not have phonological length distinctions (Hirata, 2015). Previous studies by Toda (1997) and Masuda and Hayes-Harb (2005) suggested that learners might improve their production accuracy from the very beginning to the end of a year of studying Japanese. However, Han (1992) showed that advanced learners had problems with this single/geminate consonant distinction even when they had lived in Japan for more than a year. Thus, a question still remains as to whether learners truly move towards authentic and accurate production over a long term. Specifically, our study focused on intermediate learners of Japanese who had the first exposure to an immersed setting in Japan for four months. Examination of learners at this particular level not only fills a gap in extant literature, but also provides insight into a general belief that their production ability is expected to boost during language immersion. Another unique aspect of this study was that it examined the learners' production at three different speaking rates. Native Japanese speakers show stable and predictable durational ratios between target minimal pairs even when speaking at different speaking rates (Hirata and Whiton, 2005; Hirata and Amano, 2010). The present study analyzed the learners' production by referring to Hirata and Whiton's (2005) native speaker model in terms of their durational variability and stability.

Seven learners of Japanese with the age range of 19-21 in the U.S.A. participated in recording. They were monolingual native speakers of American English and had taken two years of Japanese language classes in college. Recording was conducted twice, once before and once after their four-month study abroad in Japan. During their stay in Japan, which was their first immersion, no specific instruction was given regarding this stop length distinction. The participants recorded word pair [kako] 'past' and [kakko] 'parenthesis' among others in a carrier sentence, spoken at three speaking rates. Improvement in the learners' production ability was measured in three ways: (1) durational accuracy as measured in the produced speech, (2) identification of the word by 13 native Japanese speakers, and (3) perceptual rating of accentedness by 16 native Japanese speakers regarding the overall sentence in which the singleton and geminate stops were produced.

The first set of results (1) indicated that the learners did make distinction between the singleton and geminate words, but the difference between those stop closure durations was not large enough, compared to the native speakers' ratios, as indicated by the ratio of the geminate stop to the singleton stop, the ratio of stop closure to the preceding vowel (C/V1), and the ratio of stop closure to the word (C/W). This result did not change significantly after their four-month study in Japan. Another durational analysis utilized native Japanese speakers' C/W boundary ratio for distinguishing singletons from geminates (Hirata and Whiton, 2005). This boundary ratio was used to classify all learners' production tokens, and classification accuracy was computed. The C/W classification accuracy in the learners' production indicated little improvement from pre-Japan (73.0%) to post-Japan (74.4%). We are currently analyzing the

other sets of results (2) and (3) regarding the native speaker evaluation of the learners' production.

The results so far show that intermediate learners of Japanese have difficulty moving towards mastery of native-level durational control for single and geminate stop production. This conclusion fits well with previous studies showing that producing consonant length distinction accurately is difficult at the beginning (Toda, 1997; Masuda and Hayes-Harb, 2005), and remains as a challenge even for advanced learners of Japanese (Han, 1992). We will present a complete picture when the analyses on perceived accuracy and accentedness are complete. These results will provide an overall picture in terms of the relationship between durational variability and perceptual acceptability.

References

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