

Gender Construction and Fundamental Frequencies in Japanese

Maho Morimoto and Shigeko Okamoto (UC Santa Cruz)

Background. Recent morphological analyses of Japanese women's speech suggest that naturalistic women's speech may be closer to male speech than previously thought (Okamoto & Shibamoto Smith 2004, and citations therein). In the meantime, Okamoto (2019), examining a variety of linguistic and paralinguistic features, demonstrated that while little gender difference was found in the use of morphological features, the use of many other linguistic and paralinguistic features such as speech acts, laughter, and prosody, exhibited considerable gender differences. This necessitates further analysis on how speakers use various kinds of features to construct gendered identity in particular contexts. The current study attempts to address this need by examining the use of pitch height and range in terms of fundamental frequencies (F0) for male and female speakers, using audio-recorded corpus data.

The Corpus Analysis. The data are drawn from the BTSJ Japanese Natural Conversation Corpus (Usami 2018). We chose eight free-topic dialogues between college-aged friends. We selected four base-speakers (two males, two females) from the corpus, each of whom participated in two conversation recordings, one with same-sex partner and one with opposite-sex partner. For each base-speaker, we analyzed the pitch range and mean in about 40 seconds-worth of voicing region (although this was not possible for one female base-speaker due to the conversation dynamics), roughly following Biemans (1998). F0 was determined using the autocorrelation method (Boersma 1993), with hand-correction for mistracked pitches. Mean, maximum, and minimum F0 values were obtained, from which pitch range was calculated. They were subjected to statistical analysis using R (R core team).

Results and Implications. We found that compared to male speakers, female speakers used a higher pitch level ($\chi^2(1)=20.37$, $p<0.001$; Fig.1) and a wider pitch range ($\chi^2(1)=10.48$, $p<0.01$; Fig.2) when talking with opposite-sex interlocutors than when talking with same-sex interlocutors. This suggests that as far as these speakers are concerned, female speakers manipulated their pitch height and range depending on the interlocutors' sex more than the male speakers. While there may be various reasons for these results, we argue that one important reason is the effect of gender norms on speech, particularly, the ideological association of high pitch and greater pitch range with femininity, which seems to be more likely to be displayed in conversation with an opposite-sex speaker. These results corroborate the view that the construction of femininity must be studied by examining a variety of “gendered” features rather than a single feature, such as morphological items.

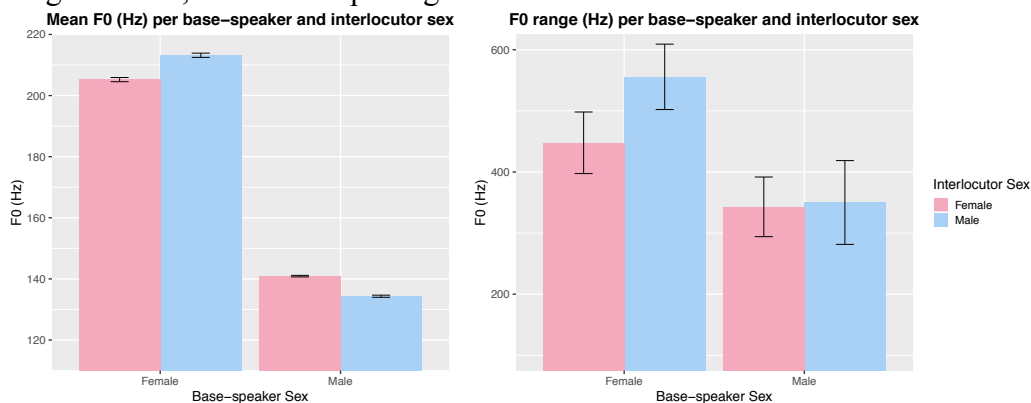


Figure 1

Figure 2

Selected References: Okamoto, S. (2019). Gengo Ideogii to Nihongo: Josei no kotoba no tayoona imi-kaishaku o megutte 'Gender ideology and the Japanese language: Diverse interpretations of Japanese women's speech'. McGloin, N., Geyer, N., and Hata, Y. (eds.), The 27th Central Association of Teachers of Japanese Conference, pp.1-20. University of Wisconsin-Madison. Okamoto, S. & Shibamoto Smith, J. S. (2004). *Japanese Language, Gender, and Ideology: Cultural Models and Real People*. Oxford: Oxford University Press. Usami, M. (ed.) (2018). BTSJ-Japanese Natural Conversation Corpus with Transcripts and Recordings (2018), NINJAL Institute-based projects: Multiple Approaches to Analyzing the Communication of Japanese Language Learners, Sub-project: Studies on the language use of Japanese language learners, leader: Usami, M.