

## **Cross-language study of age stereotypes in speech perception**

The relationship between speech variation and listener's perceptual judgments of a speaker's social identity (such as dialect, ethnicity, gender) has received little attention in sociolinguistic studies until recently (e.g. Clopper and Pisoni, 2004, e.g. Thomas and Reaser, 2004). Age is an important variable in the studies of speech variation, but surprising few sociolinguistic studies have been made for examining how age is perceived by a listener. This study examined the perception of vocal age. More specifically, this study examined (1) whether talkers' stereotypical portrayals of younger and older speech is perceived by the listeners as intended, and (2) whether the intentional age-related variation is perceived similarly by the listeners from a different linguistic community.

A disguised speech task was used to elicit the age stereotypes of younger or older talkers. Two types of age-disguised speech were collected from thirty native speakers of American English and thirty native speakers of Japanese from the three age groups: young, middle-aged, and elderly. They read the same phrase under three conditions. In the maturation condition, each talker pretended as if they were twenty year older than their actual age. In the rejuvenation condition, they pretended as if they were twenty year younger than their age. They also read the same phrase normally in the control condition. Two groups of young listeners (24 English monolinguals and 24 Japanese monolinguals) listened to each phrase and estimated the age of talkers.

Moderate correlations were found between chronological age and perceived age in the control condition for English speech and Japanese speech. Correlations were higher when the listeners estimated the age of talkers in the native language than they did for foreign talkers. For the disguised speech, perceived age in each age-disguised condition was compared with the perceived age in the control condition. The mean perceived age differences between the control and disguised conditions were small (4.0 years in the maturation condition and -3.8 years in the rejuvenation condition). There was no significant difference between English listeners and Japanese listeners.

Results suggested that the age perception is influenced not only by speech characteristics associated with physiological aging but also by language-specific variation. Results also demonstrated that the age of talkers was perceived younger or older than their actual age in line with the talker's intended direction of age shift in their age-disguised voice although the effect of age-disguise was small. Age-disguise influenced listeners' age estimation similarly for both groups of listeners.

Preliminary acoustic analysis indicated that the age-disguised speech did not exhibit some of the significant acoustic changes in speech which are typically found due to physiological aging. It seems that the listeners have at least two representations related with vocal age: one for the speech representations with the detailed acoustic information, which is more closely associated with chronological age, and another for the speech representation for age stereotypes, which is more socio-culturally bound and could reflect acoustic characteristics evoked by the social images and attitudes toward the elderly and the young people in each linguistic community. [499 words]

## References

- Clopper, Cynthia G., and Pisoni, David B. 2004. Some acoustic cues for the perceptual categorization of American English regional dialects. *Journal of Phonetics* 32:111-140.
- Thomas, Erik R., and Reaser, J. 2004. Delimiting perceptual cues used for the ethnic labeling of African American and European American voices. *Journal of Sociolinguistics* 8:54-87.