VOICING FEATURES IN THE PERCEPTION AND PRODUCTION OF STOP CONSONANTS BY JAPANESE SPEAKERS

Katsumasa Shimizu, Department of Languages, Nagoya Gakuin University, Seto city, Aichi-ken, Japan

The present study is concerned with the identification of voiced and voiceless consonants by Japanese speakers using synthetic speech sounds varying along a continuous VOT-scale, and also with the articulatory effects in speech perception.

Subjects

One of the major problems in speech perception is to examine how articulatory and auditory mechanisms are linked to each other. Some experiments have been reported on the articulatory effects in speech perception, but most of them are mainly concerned with place features, not with voicing features. It is suggested that there exists a common mechanism for perception and production of speech sounds (Cooper et al., 1975). In the present study, adaptation effects have been examined in repetitive listening and articulation of six syllables /ba, pa, da, ta, ga, ka/. Repetitive articulation of /ba, pa, ka/ caused a shift of phonetic boundaries in the predicted directions, but there are some differences in the strength of the articulatory effects; that is, the feature detector for voiceless is more sensitive than that for voiced, and the labial detectors are more sensitive than other place features. This may indicate that the detectors for each feature do not necessarily function at a mediating level for perception and production and that there is some separate processing of some feature detectors from articulation.

Conclusion

We are now working on the problem how neural commands in articulation affect the processing of auditory and linguistic information and hope to be able to present more concrete results at the 9th International Congress of Phonetic Sciences.

Reference

Cooper, W.E., S.E. Blumstein and G. Nigro (1975): "Articulatory effects on speech perception: a preliminary report", JPh 3, 87-98.