

Center for Cognitive Science

University at Buffalo, State University of New York

Wednesday, January 15, 2003

280 Park Hall
North Campus
2:00 pm – 4:00 pm

Yue Wang, Ph.D.
Department of Linguistics
University at Buffalo

Behavioral and neuro-imaging studies of Mandarin tone processing and learning

This research investigated the processing and learning of Mandarin Chinese tone by native and non-native speakers. Two of the fundamental questions addressed are brain plasticity and linguistic experience; that is, to what extent the human brain is plastic in language development, and how experience with a first language influences the acquisition of a second language. The dichotic listening study shows that tone processing is lateralized to the left hemisphere for native Mandarin listeners and this left hemisphere specialization is dependent upon linguistic experience, not generalizing to non-native listeners such as American English and Norwegian. However, non-native listeners' tone processing or perception can be more "native-like" as they gain more experience with Mandarin, as shown by American and Norwegian listeners' significant tone perception and production improvement with perceptual training. Moreover, this behavioral improvement has been instantiated in the brain, as revealed by the fMRI study showing cortical reorganization in the process of learning. Further research extends these findings to the study of developmental change in Mandarin tone processing and learning in children from 6 to 14 years old, investigating brain plasticity in children when exposed to a second language. These results are discussed in terms of the behavioral and neurophysiological aspects underlying language learning.

Refreshments will be available. Everyone is welcome to attend!