TOHOKU UNIVERSITY

2022-2023 Colloquium Series

Research Center for Language, Brain and Cognition
Graduate School of International Cultural Studies, Tohoku University

December 13 (Tue), 2022,16:30 - 18:00JST
Room M204, Multimedia Education and Research Complex, Kawauchi Kita Campus

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Speech perception and speech sound learning in rodents and humans: electrophysiological evidence

The ability to differentiate speech sounds and detect abstract rules between them are fundamental for human language comprehension. However, these building blocks of human language abilities are not unique to humans, but also observed in other species. In my lecture, I will describe results from our studies in rodents, where speech perception and speech sound learning have been investigated. These studies are based on an electrophysiological marker of change detection, named mismatch negativity (MMN). Our findings suggest that, similarly to the human brain, the rodent brain can differentiate speech sounds, learn rules between them, and generalize these rules to new items. In addition, I will describe our results suggesting that mere passive exposure to (foreign) speech sounds can promote phonetic learning in adult humans and rats.

Bio: Dr.Piia Astikainen is an Associate Professor at the Department of Psychology, University of Jyväskylä, Finland. Her research focuses on perception, especially social perception, and speech perception. She has conducted four large-scale projects funded by the Academy of Finland related to these topics, and the latest project investigates social foreign language learning. For more details, see her research group's web site: https://www.jyu.fi/active-mind-lab

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