

CBS Research Seminar

The Role of Musical Instruments in Music-to-language Transfer

Date: 8 Nov 2024 (Fri)
Time: 2:00pm - 3:00pm (HKT)
Language: English Venue: BC203

Presented by

Dr. William Choi

Director of Speech and Music Perception Laboratory
Assistant Professor, Faculty of Education
The University of Hong Kong



Abstract:

The benefits of music training can go beyond just music itself. In correlational studies, musicians often outperformed non-musicians on perceiving lexical tones (*tones* hereafter). Methodologically, researchers have largely treated musicianship as a binary variable. Thus, a musician group often contained learners of diverse musical instruments. Pitch processing demand varies across musical instruments, so it is possible for them to have different effects on tone perception. Although Patel's OPERA hypothesis has theoretically acknowledged the heterogeneity nature of musicianship, no correlational study to our knowledge has directly evaluated this claim. To address the research gap, we compared pitched musicians, unpitched musicians, and non-musicians on tone discrimination, identification, and word learning.

In Experiment 1, pitched musicians were more accurate in tone discrimination compared to unpitched musicians and non-musicians. However, unpitched musicians and non-musicians performed similarly. In Experiment 2, pitched musicians outperformed unpitched musicians and non-musicians on tone identification. Nevertheless, the unpitched musicians and non-musicians showed similar performance. Regarding the word learning task with seven sessions, the three groups performed similarly in the first session. However, pitched musicians outperformed unpitched musicians and non-musicians in the seventh session. Moreover, unpitched musicians did not outperform non-musicians.

The results indicate that pitched musicians have a unique advantage in tone perception. Moreover, their unique perceptual advantage can feedforward to word learning. These findings offer fine-grained correlational evidence for OPERA's Precision element. In a nutshell, it is not musicianship *per se* that drives music-to-language transfer but rather the musical experience in using the relevant acoustic feature.

Speaker Bio:

Professor William Choi is the Director of the Speech and Music Perception Laboratory at The University of Hong Kong. His research focuses on tone perception, stress perception, and the relationship between music and language. His notable works on cross-linguistic speech perception include the Acoustic-Attentional-Contextual Hypothesis (Choi, 2022) and the Dimensional Transfer Hypothesis (Choi & Tsui, 2023). In music-related research, Professor Choi is known for identifying the selectivity of musical advantage (Choi, 2020) and the role of musical instrument in music-to-language transfer (Choi et al., 2023, 2024).