Jiayu Liang

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Education

Shandong University [2020 – 2024]
Bachelor of Arts in English Language and Literature *88.71/100 Average Grade*

Work Experience

The Hong Kong University of Science and Technology [2024 – 2025]
Research Assistant

Research Interests

- Production and Perception of Non-native Languages
- Cross-domain Transfer Effects between Music and Language Experience
- Age-related Differences in Language Learning

Publications & Presentations

- Zhang, H., **Liang, J.** (co-first author). Benefits of Melodic Training on the Production and Perception of Cantonese Level Tones by Korean and Chinese Older Adults. (in preparation)
- **Liang, J.**, Zhang, H. Mandarin-speaking Musicians Show Enhanced Perception-Production Link of L2 English Vowels. (in preparation)
- **Liang, J.**, Zhang, H. Effects of Mandarin Speakers' Musical Aptitude on the Perception of English Vowels: An Eye-tracking Study. (in preparation)
- **Liang, J.**, Zhang, H. (2024). Effects of Mandarin Speakers' Musical Aptitude on the Perception of English Vowels: An Eye-tracking Study. In *The 15th International Conference in Evolutionary Linguistics (CIEL2024)*, Changsha, Hunan. (poster)
- **Liang, J.**, Zhang, H. (2023). Perception-Production Links in Mandarin Speakers' English Vowels: A Behavioral and Eye-tracking Study. In *The 2nd National Symposium on Clinical Linguistics (NSCL2023)*, Jinan, Shandong. (oral presentation)
- **Liang, J.**, Jia, B., Liu, J., Li, X., Zhang, H. (2023). Music Experience Enhances Categorical Perception of English Vowels in Mandarin Speakers. In *The 14th International Conference in Evolutionary Linguistics (CIEL2023)*, Hong Kong. (poster)
- **Liang, J.**, Jia, B., Liu, J., Li, X., Zhang, H. (2023). Music Experience Enhances Categorical Perception of English Vowels in Mandarin Speakers. In *The 15th Phonetic Conference of China (PCC2023)*, Shenzhen, Guangdong. (oral presentation)

Research Experience

Benefits of Melodic Training on the Production and Perception of Cantonese Level Tones by Korean and Chinese Older Adults
Individual Project [*Nov.*2023 – *Jun.*2024]

- Conducted comprehensive literature review.
- Developed and implemented a Melodic Height Identification Training program and associated assessments (identification and discrimination tests), utilizing JavaScript (jsPsych).
- Recruited 30 participants, including 15 Korean and 15 Chinese older adults.

- Employed SPPAS and Montreal Forced Aligner for automatic annotation of production data, and MATLAB (VoiceSauce) for automatic extraction of F0 values.
- Analyzed participants' tone differentiability and hit rate to evaluate production performance and generated tone overlap plots.
- Transformed perception data (accuracy percentages) into rationalized arcsine units (RAUs) for statistical analysis.
- Conducted Linear Mixed Effects (LME) analysis using R (lme4) to examine the effects of melodic training on Cantonese level tones perception and production.

Perception-Production Links in Mandarin Speakers' English Vowels: A Behavioral and Eye-tracking Study
Undergraduate Thesis [*Sep.*2023 – *Jun.*2024]

- Conducted thorough literature review.
- Synthesized and manipulated experimental stimuli using MATLAB (TANDEM-STRAIGHT).
- Designed eye-tracking experiments with Experiment Builder.
- Recruited 60 college students for participation.
- Employed automatic annotation for production data using SPPAS and DARLA, and automatic extraction of F1 and F2 values in MATLAB (VoiceSauce).
- Calculated participants' boundary width in Python to assess perception performance.
- Processed eye-movement data in R (eyetrackingR) and calculated the difference between the empirical log-transformed proportions of target and competitor fixations.
- Calculated participants' Pillai score in R to measure vowel overlap and plotted vowel overlap using F1 and F2 values in R (ggplot2).
- Conducted LME and Growth Curve Analysis (GCA) in R (lme4).

Music Experience Enhances Categorical Perception of English Vowels in Mandarin Speakers
Group Project [*Mar.*2023 – *Jun.*2023]

- Conducted literature review, synthesized and manipulated experimental stimuli using MATLAB (TANDEM-STRAIGHT).
- Recruited 24 college students for participation.
- Designed and executed experiments in Psychopy.
- Performed ANOVA and Pearson correlation analysis in Python (Pandas).
- Wrote the manuscript.

Awards

- College Students' Innovative and Entrepreneurial Training Program Funding Supported by Shandong University [*Jun.*2023 – *Jun.*2024]
- The Third-Class Undergraduate Academic Scholarship [*Sep.*2021]

Skills

Programming: Python, R, JavaScript and MATLAB
Language proficiency: Mandarin (native), Cantonese (native) and English (IELTS score: 8.0)