Mingyue Zuo
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Corresponding Address: Department of Language Science and Technology, PloyU, HongKong
School of Psychology, SCNU, Guangzhou

EDUCATION

Zhengzhou Normal University **Applied Psychology** **2015-2019**
Academic Award: Outstanding Bachelor's Thesis

Liaoning Normal University **Basic Psychology** **2020-2023**
Academic Award: Outstanding Master's Thesis of Liaoning Province

South China Normal University **Psychology** **2023-Present**
PhD Student

The Hong Kong Polytechnic University **Psycholinguistics** **2025-present**
Visiting PhD student

RESEARCH AREA

Language comprehension, Prediction, Natural Language Processing, Large Language Model, bilingual, Synchronization, Speech Perception in Autism

PUBLICATIONS

[1] Zuo, M., Schwieter, J. W., Cao, N., & Liu, H. (2023). The role of language control in cross-language phoneme processing: Evidence from Chinese – English bilinguals. *International Journal of Bilingualism*, 27(3), 293-305.

[2] Liu, H., Li, W., Zuo, M., Wang, F., Guo, Z., & Schwieter, J. W. (2022). Cross-task adaptation effects of bilingual language control on cognitive control: a dual-brain EEG examination of simultaneous production and comprehension. *Cerebral Cortex*, 32(15), 3224-3242.

[3] Zuo, M., Zhang, Y., Wang, R., Huang, D., Yu, L., & Wang, S. (2025). Discrimination and Integration of Phonological Features in Children with Autism Spectrum Disorder: An Exploratory Multi-Feature Oddball Protocol. *Brain Sciences*, 15(9), 905.

[4] Prediction errors adaptively modulate language control in the bilingual brain
Zuo, M., Liu,H., Liu,L., John W. Schwieter, Wu,Y,j *Under review*

SKILLS

Programming: MATLAB, Python, R

Behavioral data analysis: Mixed effects model, Reinforcement Learning modeling

EEG data analysis: Event-Related Potential analysis, Phase Locking Value Analysis(Synchronicity Computation Methods for dual-brain), Granger causality analyses, Time-resolved correlation

fMRI data analysis: Whole Brain Activation Analysis, Region of Interest Analysis, Parameter Modulation Analysis, Representation Similarity Analysis, Connectome-based predictive modeling

RESEARCH EXPERIENCE

[1] The role of language control in cross-language phoneme processing: Evidence from Chinese – English bilinguals Liaoning Normal University
Supervisor: **Prof. Huanhuan Liu** 2020 -2022

- **Contribution**: Conceptualization, Methodology, Software, Formal analysis, Investigation, Data Curation, Writing - Original Draft & Editing, Visualization
- Exploring bilingual language control of speech switching and the role of phonemes in bilingual language control

[2] Cross-task adaptation effects of bilingual language control on cognitive control: a dual-brain EEG examination of simultaneous production and comprehension Liaoning Normal University

Supervisor: **Prof. Huanhuan Liu** 2020 - 2022

- **Contribution**: Data analysis, Data Curation, Writing - results & Editing, Visualization, Writing - review & editing
- Investigating the adaptive effects of language control in simultaneous bilingual production and comprehension on cognitive control

[3] The study of language control on executive control: ERP evidence from bilingual production and comprehension Liaoning Normal University

Supervisor: **Prof. Huanhuan Liu** 2020 - 2022

- **Contribution**: Formal analysis, Investigation, Data Curation, Writing - Original Draft & Editing, Visualization
- Investigating the impact of language control in production and comprehension on executive control

[4] The cognitive mechanisms of language switching influenced by reward Liaoning Normal University

Supervisor: **Prof. Huanhuan Liu** 2021 - 2022

- **Contribution**: Writing - Original Draft & Editing
- Exploring the impact of rewards on language control and the underlying mechanisms

[5] Prediction errors adaptively modulate language control in the bilingual brain Liaoning Normal University

Supervisor: **Prof. Huanhuan Liu** 2022 - 2024

- **Contribution**: Conceptualization, Methodology, Software, Formal analysis, Investigation, Data Curation, Writing - Original Draft & Editing, Visualization
- We use a reinforcement learning paradigm to simulate based on feedback.Our findings demonstrate how feedback and experiential learning refine the language control system in bilinguals

[6] Perception and Integration of Sound in Autism and Typical Children South China Normal University

Supervisor: **Prof. Suiping Wang** 2024

- **Contribution**: Data analysis, Writing - Original Draft
- Exploring sound perception and integration in children with Autism Spectrum Disorder and Typically Developing children using the Oddball Paradigm

[7] The Impact of AI-based Teaching Methods on Student Learning South China Normal University

Supervisor: **Prof. Suiping Wang** 2024

- **Contribution**: Conceptualization, Methodology, Software, Data collection in progress
- Exploring how AI-generated teaching models guide changes in neural synchrony and how these changes affect different types of learning outcomes

[8] Processing Units of Language Comprehension from a Predictive Perspective South China Normal University

Supervisor: **Prof. Suiping Wang** 2024 - Present

- **Contribution**: Conceptualization, Methodology, Predictive modeling, Neuroimaging data analysis
- Integrating linguistic features and LLMs with neuroimaging data from auditory and visual natural language processing to identify language processing units and dynamic modulation in response to contextual constraints.

Academic Activities

Oral Presenter, The 6th International Symposium on Psycholinguistics in China 2022

Oral Presenter, The 6th Annual Conference of the Language Psychology Professional Committee of the Chinese Psychological Society 2023

Doctoral Research Focus

- Investigating the predictive mechanisms of language comprehension in the brain and the similarity between LLMs (e.g., GPT-2) and human neural representations.
- Currently, Combining linguistic features and predictive modeling by integrating neuroimaging data (MEG, EEG) from auditory and visual Natural Language Processing with linguistic features to explore the basic language processing units and their dynamic modulation under contextual constraints.