Baishen Liang

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EDUCATION

Doctor of Philosophy in Cognitive Neuroscience **2017 – 2023**
University of Chinese Academy of Sciences, Beijing, China *GPA: 3.94*

Exchanged Student, Department of Linguistics **2016 – 2016**
University of California, Berkeley, Berkeley, CA, USA *GPA: 3.78*

Bachelor of Science in Psychology **2013–2017**
Central China Normal University, Wuhan, China *GPA: 3.88*

WORK EXPERIENCE

Postdoctoral Associate **July 2024 – present**
Department of Neurology, Duke University, Durham, NC, USA

- Lead a project to Design and establish an experiment to **study production-based verbal working memory maintenance and manipulation**. Collect, analyze, and maintain neurosurgical patients' intracranial electroencephalogram (iEEG) data.

PhD Student **September 2017 – June 2023**
Institute of Psychology, Chinese Academy of Sciences, Beijing, China

Technology Consultant for the Core Facility IPCAS (Nominated Position)
- Assisted in maintaining transcranial magnetic stimulation (TMS) facilities.
- Gave regular public lectures and courses for faculty and students.
- Provided one-on-one technical consultation for faculty and students requiring TMS.

Project 1: Bilateral Laryngeal Motor Cortex in Speech Perception in Noise
- Lead a project to apply functional magnetic resonance imaging (fMRI) to localize Mandarin speakers' laryngeal motor cortices. Designed and established a TMS experiment, and collected and analyzed data.

Project 2: Transcranial Alternative Electric Stimulation (tACS) on Auditory and Motor Cortex
- Led a project to establish a technical pipeline combining phase-controlled dual-site tACS and electroencephalogram (EEG) recordings for auditory cognitive neuroscience research.

Project 3: Cortical Functional Map for the Perception of Speech Features
- Systematically reviewed 148 published fMRI studies on speech perception and comprehension.

PEER REVIEWED PUBLICATIONS

1. **Baishen Liang,** Yanchang Li, Wanying Zhao, Yi Du[*]**.** Bilateral human laryngeal motor cortex in perceptual decision of lexical tone and voicing of consonant. ***Nature Communications***, 2023, 14, 4710. (First author, **Journal Impact Factor = 14.7**)
2. **Baishen Liang** & Yi Du[*]. The functional neuroanatomy of lexical tone perception: an activation likelihood estimation meta-analysis. ***Frontiers in Neuroscience***, 2018, 12, 495. (First author, **cited by 62 publications**)
3. **Baishen Liang** & Yi Du[*]. Mechanisms of sensorimotor integration in speech perception [言语知觉中的感觉运动整合机制]. ***Science & Technology Review [科技导报]***, 2017, 35(19):21-28. (First author)

MANUSCRIPTS IN PROGRESS

1. Yaxuan Wang[#], Keke Yu[#], Shuqi Yin, **Baishen Liang**[*], Ruiming Wang[*]. Theta and gamma transcranial alternating current stimulation modulate Mandarin consonant and lexical tone perception. ***bioRxiv***, 2025, 679546. (Co-corresponding author)
2. Weijin Hu[#], **Baishen Liang[#]**, Yi Du[*], Singing enhances poetry learning and memorization in preschool children. Under review. (Co-first author)

HONORS & AWARDS

- **Best Presentation Award in the 4th IEEE EMBS International Summer School of Neural Engineering. Tsinghua University**, Beijing, August 2018.
- **University of Chinese Academy of Sciences Student Grant (￥10,000)**. University of Chinese Academy of Sciences, Beijing. December 2017.
- **National Scholarship (￥8,000)**. Ministry of Education of the People's Republic of China, Beijing. November 2016.

PROFESSIONAL MEETINGS ATTENDED

- **Liang, B.,** Earle-Richardson, A. M., Grant, G., Zafar, M., Frauscher, B., Southwell, D., Hickok, G. & Cogan, G. B.* Sensory-motor mechanisms for verbal working memory.
  - *Society for the Neurobiology of Language 17th Annual Meeting*. Washington DC, USA, September 2025 (poster).
  - Duke Comprehensive Epilepsy Center Research Colloquium. Durham, USA, September 2025 (slide presentation)
  - *Duke Neurology TBS/DCEC Research Symposium*. Durham, USA, September 2025 (poster)
  - *North Carolina Conference on Cognition 2025*. Chapel Hill, USA, April 2025 (poster).
- **Liang, B.**, Li, Y., Zhao, W., Du, Y.* Bilateral human laryngeal motor cortex in the perceptual decision of lexical tone and voicing of consonant (poster and presentation). *Society for the Neurobiology of Language Annual Meeting 2023*. Marseille, France, October 2023.

- **Liang, B.**, Hong, Y., Li, Y., Du, Y.* Causal involvement of auditory-motor low-frequency oscillation coupling in sentence perception under noisy conditions: a tACS study (poster). *Society for the Neurobiology of Language Annual Meeting 2023*. Marseille, France, October 2023.
- **Liang, B.**, Li, Y., Zhao, W., Du, Y.* A causal role of the human laryngeal motor cortex in lexical tone and voicing perception (poster and presentation). Neurobiology of Language: *Key Issues and Ways Forward II*. Nijmegen, Netherlands (online), March 2022.
- **Liang, B.**, Du, Y.* Neuroanatomy of lexical tone: an activation likelihood estimation meta-analysis (poster). *Organization for Human Brain Mapping Annual Meeting 2018*. Singapore, June 2018.

PEER REVIEW EXPERIENCE

***Nature*,** 2025

***Brain and Language*,** 2025

***International Journal of Multilingualism*,** 2025

Acta Psychologica Sinica [心理学报], 2024

TECHNICAL SKILLS

- **Programming languages**
  - Matlab, Python, R, and C++.
- **Psychology**
  - Psychophysics experimental designs.
  - Statistics: linear models, logistic models, and drift diffusion models (DDMs).
- **Linguistics**
  - Acoustic processing and feature extractions by Praat/Matlab.
- **Neuroscience**
  - Electroencephalography (EEG), Magnetoencephalography (MEG), and intracranial EEG experimental design, data collection, preprocessing, and analyses.
  - Transcranial magnetic stimulation (TMS) and transcranial electrical stimulation (tES) experimental design, data collection, and analyses.