Liang Zhang

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EDUCATION AND TRAINING

Doctor of Philosophy – Cognitive Neuroscience
Beijing Normal University September 2019 — July 2024

- Dissertation: Cognitive And Neural Mechanisms Of General Cognitive Abilities: Evidence From Psychometrics And Brain Networks
- Supervised by Prof. Gui Xue

Research Assistant
Beijing Normal University August 2017 — August 2019

- Collected and analyzed data from a large-scale longitudinal study of children's cognitive development
- Used structural equation modeling to explore the structure of children's cognitive abilities

Master of Science – Cognitive Neuroscience
Beijing Normal University September 2014 — July 2017

- Thesis: The Structure and Development Trajectory of Children's Executive Function
- Graduated as an outstanding graduate of Beijing

Bachelor of Science – Statistics
Beijing Normal University September 2009 — July 2013

- Graduated as top 5% of the class
- GPA: 3.7/4.0

PUBLICATIONS

Sheng, J.#, **Zhang, L.**#, Xue, G*. (In preparation). Shared and individualized representational transformations support episodic memory formation.

Zhang, L., Feng, J., Liu, C., Hu, H., Zhou, Y., Yang, G., Peng, X., Li, T., Chen, C., & Xue, G. (2024). Improved estimation of general cognitive ability and its neural correlates with a large battery of cognitive tasks. Cerebral Cortex, 34(2), bhad510. https://doi.org/10.1093/cercor/bhad510

Sheng, J., Wang, S., **Zhang, L.**, Liu, C., Shi, L., Zhou, Y., Hu, H., Chen, C., & Xue, G. (2023). Intersubject similarity in neural representations underlies shared episodic memory content. Proceedings of the National Academy of Sciences, 120(35), e2308951120. https://doi.org/10.1073/pnas.2308951120

Feng, J., **Zhang, L.**, Chen, C., Sheng, J., Ye, Z., Feng, K., Liu, J., Cai, Y., Zhu, B., Yu, Z., Chen, C., Dong, Q., & Xue, G. (2022). A cognitive neurogenetic approach to uncovering the structure of executive functions. Nature Communications, 13(1), 4588. https://doi.org/10.1038/s41467-022-32383-0

Sheng, J., **Zhang, L.**, Liu, C., Liu, J., Feng, J., Zhou, Y., Hu, H., & Xue, G. (2022). Higher-dimensional neural representations predict better episodic memory. Science Advances, 8(16), eabm3829. https://doi.org/10.1126/sciadv.abm3829

Liu, J., Zhang, H., Yu, T., Ren, L., Ni, D., Yang, Q., Lu, B., **Zhang, L.**, Axmacher, N., & Xue, G. (2021). Transformative neural representations support long-term episodic memory. Science Advances, 7(41), eabg9715. https://doi.org/10.1126/sciadv.abg9715

Feng, J., Chen, C., Cai, Y., Ye, Z., Feng, K., Liu, J., **Zhang, L.**, Yang, Q., Li, A., Sheng, J., Zhu, B., Yu, Z., Chen, C., Dong, Q., & Xue, G. (2020). Partitioning heritability analyses unveil the genetic architecture of human brain multidimensional functional connectivity patterns. Human Brain Mapping, 41(12), 3305–3317. https://doi.org/10.1002/hbm.25018

#: equal contribution; *: corresponding author

CONFERENCE PRESENTATIONS

Zhang, L., Xue, G. The neural substrates of general cognitive ability based on multiple cognitive tasks. Poster presented at the Annual Meeting of the Society for Neuroscience, November 2023, Washington, DC. USA.

RELEVANT SKILLS

- Programming: R, Python, MATLAB
- Statistical Analysis: Machine Learning, Structural Equation Modeling, Hierarchical Bayesian Modeling.
- Neuroimaging: fMRI, brain network analysis