

Mingxia Zhang

Associate Professor, Institute of Psychology, Chinese Academy of Sciences, Beijing, China

Research Interests

My research focuses on exploring the impact of motivation on behaviors. This exploration involves examining how internal motivators, including self-determination, efficacy, and curiosity, as well as external motivators like monetary rewards and punishments, affect decision making, memory and learning, along with their underlying mechanisms. My research also extends to the influence of motivation on behaviors across development.

Publications

English Journals:

Ding, Z., Li, W., Chen, C., Yang, Z., Wang, S., Xu, J., Liu, X., & **Zhang, M.** (2024). The effect of choice on memory across development. *Journal of Experimental Child Psychology*, 246, 105982.

Cheng S#, Ding Z#, Chen C, Sun W, Jiang T, Liu X, **Zhang M*** (2023). The effect of choice on memory: The role of theta oscillations. *Psychophysiology*, e14390. (# co-first authors). (*corresponding authors).

Xue J#, Jiang T#, Chen C, Murty V. P, Li Y, Ding Z, **Zhang M*** (2023). The interactive effect of external rewards and self-determined choice on memory. *Psychological Research-Psychologische Forschung*, 1-10.

Ding Z#, Jiang T#, Chen C, Murty VP, Xue J, **Zhang M*** (2021) The effect of choice on intentional and incidental memory, *Learning & Memory*, 28(12), 440-444.

Chen C*, Wang Z, Chen C, Xue G, Lu S, Liu H, Dong Q, **Zhang M*** (2021) CPNE3 moderates the association between anxiety and working memory. *Scientific Reports*, 11(1), 6891.

Qin N, Gu R, Xue J, Chen C, **Zhang M*** (2021) Reward-driven attention alters perceived salience. *Journal of Vision*, 21(1), 7.

Cheng S#, Jiang T#, Xue J, Wang S, Chen C, **Zhang M*** (2020) The influence of rewards on incidental memory: more does not mean better. *Learning & Memory*, 27(11), 462-466.

Qin, N#, Xue J#, Chen C, **Zhang M*** (2020) The bright and dark sides of performance-dependent monetary rewards: evidence from visual perception tasks. *Cognitive Science*, 44(3), e12825.

Zhang M*#, Tu J#, Dong B, Chen C, Bao M* (2017) Preliminary evidence for a role of the personality trait in visual perceptual learning. *Neurobiology of learning and memory* 139:22-27.

Zhang M, Chen C, Xue G, Lu Z, Mei L, Wei M, Xue H, He Q, Dong Q (2014) Language-general and -specific white matter microstructural bases for reading. *Neuroimage* 2014. 98: p. 435-41.

Zhang M, Li J, Chen C, Xue G, Lu Z, Mei L, Xue H, Xue F, He Q, Wei M, Dong Q (2014) Resting-state functional connectivity and reading abilities in first and second languages. *Neuroimage* 84C: 546-553.

Zhang M, Li J, Chen C, Mei L, Xue G, Lu Z, He Q, Wei M, Dong Q (2013) The contribution of the left mid-fusiform cortical thickness to Chinese and English reading in a large Chinese sample. *Neuroimage* 65:250-256.

Zhang M, Jiang T, Mei L, Yang H, Chen C, Xue G, Dong Q (2011) It's a word: Early electrophysiological response to the character likeness of pictographs. *Psychophysiology* 48:950-959.

Dong X, **Zhang M**, Dong B, Jiang Y, Bao M (2021) Reward produces learning of a consciously inaccessible feature. *British Journal of Psychology*.

Lin N, Yu X, Zhao Y, **Zhang M** (2016). Functional Anatomy of Recognition of Chinese Multi-Character Words: Convergent Evidence from Effects of Transposable Nonwords, Lexicality, and Word Frequency. *PLoS One*, 11(2), e0149583.

Li J, Chen C, Wu K, **Zhang M**, Zhu B, Moyzis RK, Dong Q (2015) Genetic variations in the serotonergic system contribute to amygdala volume in humans. *Front Neuroanat* 9:129.

Wei M, Joshi A, **Zhang M**, Mei L et al.(2015), How age of acquisition influences brain architecture in bilinguals. *Journal of Neurolinguistics* 36:35–55.

Mei L, Xue G, Lu ZL, He Q, Wei M, **Zhang M**, Dong Q, Chen C (2015) Native language experience shapes neural basis of addressed and assembled phonologies. *Neuroimage* 114:38-48.

Mei, L., Xue, G., Lu, Z., He, Q., **Zhang, M**, Wei, M., Xue, F., Chen, C., Dong, Q. (2014). Artificial language training reveals the neural substrates underlying addressed and assembled phonologies. *PLoS One*, 9(3): e93548.

Mei L, Xue G, Lu ZL, Chen C, **Zhang M**, He Q, et al. (2014). Learning to read words in a new language shapes the neural organization of the prior languages. *Neuropsychologia*, 65, 156-168.

Mei L, Xue G, Lu ZL, He Q, **Zhang M**, Xue F, Chen C, Dong Q (2013). Orthographic

transparency modulates the functional asymmetry in the fusiform cortex: An artificial language training study. *Brain Lang* 125:165–172.

Lei X, Chen C, He Q, Moyzis R, Xue G, Cao Z, Li J, Li H, Zhu B, **Zhang M**, Dong Q (2012). Haplotype polymorphism in the alpha-2B-adrenergic receptor gene influences response inhibition in a large Chinese sample. *Neuropsychopharmacology* 37:1115-1121.

Mei L, Xue G, Chen C, Xue F, **Zhang M**, Dong Q (2010). The "visual word form area" is involved in successful memory encoding of both words and faces. *Neuroimage* 52:371-378.

Chinese Journals:

Ke X, Qi H, Liang J, Jin X, Gao J, **Zhang M**, Wang Y (2021). Situational evaluation method of the Chinese people's holistic thinking characteristics and their application. *Acta Psychologica Sinica*.

Zhang, M.*, Li, Y., Li, J., Liu, X. (2023). The Impact of Intrinsic and Extrinsic Motivation on Adolescents' Memory and Its Neural Mechanisms. *Advances in Psychological Science*.

Wang, S., Cheng, S., Jiang, T., Liu, X., **Zhang, M.*** (2023). The Effect of Reward on Declarative Memory. *Advances in Psychological Science*.

Xu, J., **Zhang, M.*** (2023). Constructing a Learning-Based Classroom Motivation System. *Research in Educational Science*.

Luo, Y., Shi, J., **Zhang, M.***, Ding, Z., Liu, S., Zan, S., Du, R., Tan, Y., Yang, F., Wang, Z.* (2023). Characteristics of Intrinsic Motivation in Patients with Depression. *Chinese Journal of Mental Health*.

Research Projects

Principal Investigator, National Natural Science Foundation of China, "The Impact of Intrinsic and Extrinsic Motivation on Learning in Adolescents: Behavioral and Neural Mechanisms", 2022-2025, ¥480,000.

Principal Investigator, National Natural Science Foundation of China, "Brain Functional Connectivity during Visual Perception Learning ", 2016-2018, ¥240,000.

Principal Investigator, Open Topics in the Beijing Key Laboratory of Applied Experimental Psychology, Beijing Normal University, "The Promotion of Reward Motivation on Episodic Memory and Neural Mechanisms ", 2021-2022, ¥40,000 (Collaborator: Ting Jiang).

Principal Investigator, Open Topic Project of the National Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, "The Resting-State Functional

Connectivity in the Modulation of Rewards on Visual Perceptual Learning ", 2016-2017, ¥80,000 (Collaborator: Professor Xue Gui).

Principal Investigator, High-Level Talent Cross-Training Program of Beijing Higher Education Institutions, "Idiom Learning and Cognitive Ability Training Based on VR Scenarios", 2019, ¥60,000.

Principal Investigator, High-Level Talent Cross-Training Program of Beijing Higher Education Institutions, "The Impact of Rewards on Visual Perception ", 2018, ¥60,000.

Principal Investigator, Young Talent Research Startup Fund of the Institute of Psychology, Chinese Academy of Sciences, "The Influence of Visual Memory on Multiple Mechanisms of Visual Adaptation", 2014-2016, ¥100,000.

Education

Ph.D. in Cognitive Neuroscience, National Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China (2010 – 2014). Advisor: Professor Qi Dong.

Joint Training Ph.D. Student, Department of Psychology and Social Behavior, University of California, Irvine (UCI), USA (2011 – 2013). Under the "National Program for Developing High-Level University Graduates". Foreign Advisor: Professor Chuansheng Chen.

M.A. in Developmental and Educational Psychology, National Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China (2007 – 2010). Advisor: Professor Qi Dong.