

Xiaoli Chen

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Working Experience

- 2014-present, postdoc researcher, DZNE, Magdeburg

Supervisor: Dr. Thomas Wolbers

Note: I was not able to work full time between March 2017 to February 2018 because of several mandated rests due to pregnancy complications and subsequent childcare responsibilities.

Education

- 2009-2014, Vanderbilt University, USA, Ph.D. in Psychology
Doctoral program in Psychology: Cognition and Cognitive Neuroscience Program
Dissertation: Cue Integration in Spatial Navigation – a Bayesian Approach.
Advisor: Dr. Timothy P. McNamara
- 2007-2009, Sun Yat-Sen University, China, M.A. in Basic Psychology
Master's thesis: Active and passive short-term visual perceptual learning: an ERP study.
Advisor: Dr. Yulong Ding
- 2003-2007, Sun Yat-Sen University, China, B.A. in Applied Psychology

Research Interest

I'm interested in how people navigate in the environment and how they memorize locations. Currently, I'm focusing on how humans make use of different spatial inputs to optimize navigation behaviors. By using virtual reality techniques and functional magnetic resonance imaging (3T and 7T), I investigate both the behavioral aspect and the neural basis of human spatial navigation and memory. I'm also interested in early detection of Alzheimer's disease, by studying APOE4 carriers.

List of Publications

Peer-reviewed journals

- Kuehn E., **Chen, X.**, Geise P., Oltmer J., Wolbers T. (2018). Social targets improve body-based and environment-based strategies during spatial navigation. *Experimental Brain Research*.
- **Chen, X.**, McNamara, T.P., Kelly J. W. & Wolbers T. (2017). Cue combination in human spatial navigation. *Cognitive Psychology*, 95, 105-144.

- **Chen, X.**, He, Q., Kelly J.W., Fiete I. & McNamara, T.P. (2015). Bias in human path integration is predicted by properties of grid cells. *Current Biology*, 25(13), 1771-1776.
- **Chen, X.** & McNamara, T.P. (2011). Object-centered reference systems and human spatial memory. *Psychonomic Bulletin and Review*, 18(5): 985-991.
- **Chen, X.**, Qu, Z., Wang Y., & Ding, Y. (2008). Diagonal mirror-transfer in perceptual learning of orientation discrimination. *Acta Psychologica Sinica*, 40, 969-974. (in Chinese)

Other publications

- **Chen, X.**, Vieweg, P., & Wolbers, T. (submitted). The human hippocampus contributes to egocentric coding of distance to a local landmark. *bioRxiv* (preprint, 2018).
- **Chen, X.** & McNamara, T.P. (2014). Bayesian cue interaction in human spatial navigation. *Spatial Cognition* IX: 147-160 (conference proceedings).

Working Papers

- **Chen, X.**, Vieweg P. & Wolbers T. "The human entorhinal cortex encodes metric spatial information for landmarks and self-motion cues in navigation." (*in preparation*)
- **Chen, X.** & Wolbers T. "A model spatial representation in the human hippocampus: a 7T fMRI study." (*in preparation*)

Conference Presentations

- **Chen, X.**, Vieweg P. & Wolbers T. (2018). "The human entorhinal cortex encodes metric spatial information for landmarks and self-motion cues in navigation", Spatial Cognition 2018, Tuebingen.
- **Chen, X.** (2016). "Neural mechanisms of spatial navigation in the human hippocampus and entorhinal Cortex", Sino-German Symposium, Cologne.
- **Chen, X.**, Vieweg P. & Wolbers T. "Hippocampus volume predicts spatial navigation performance with a single landmark in humans." iNav 2016, Bad Gastein, Austria.
- **Chen, X.**, McNamara, T.P., & Kelly, J.W. (2012). "Grid cells and human path integration." Poster, Psychonomic Society 53rd Annual Meeting.
- **Chen, X.**, & McNamara, T.P. (2011). "Object-centered reference systems and human spatial memory." Poster, Psychonomic Society 52rd Annual Meeting.

Professional Membership and Service

Memberships: Spatial Intelligence and Learning Center Spatial Network (SILC)

Reviewing: Journal of Experimental Psychology: General (Ad Hoc), Psychonomic Bulletin & Review (Ad Hoc), Plos One (Ad Hoc)