

Lei Zhang | 张磊

PERSONAL DETAILS

Gender:	male	Citizenship:	Chinese
Date of Birth:	19 / 05 / 1988	Place of Birth:	Tianjin, China
Email:	lei.zhang@univie.ac.at	Website:	lei-zhang.net
Twitter:	@lei_zhang_lz	Github:	@lei-zhang
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EMPLOYMENT

01/2019 – present	University of Vienna (UNIVIE), Vienna, Austria <i>Univ.-Ass. (Postdoctoral Researcher)</i> at Social, Cognitive and Affective Neuroscience Unit
05/2019 – present	University of Tromsø (UiT), Tromsø, Norway <i>Adjunct researcher</i> at Department of Psychology
01/2019 – present	University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany <i>Guest Lecturer</i> at Institute for Systems Neuroscience
01/2018 – 12/2018	University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany <i>Postdoctoral Researcher</i> at Institute for Systems Neuroscience
12/2016 – 08/2017	F. Hoffmann-La Roche AG , Basel, Switzerland Neuroscience, Ophthalmology and Rare Diseases (NORD) <i>Roche intern for Scientific Exchange (RiSE)</i>
04/2016 – 12/2017	University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany <i>Predoctoral Researcher</i> at Institute for Systems Neuroscience
09/2012 – 10/2013	Basque Center on Cognition, Brain and Language (BCBL), San Sebastián, Spain <i>Predoctoral Researcher</i>

EDUCATION

2013 – 2018	University Medical Center Hamburg-Eppendorf , Hamburg, Germany Dr. rer. biol. hum. (Ph.D.), <i>summa cum laude</i> / with distinction (Oct. 2018) Supervisor: Jan Gläscher
2012 – 2013	University of the Basque Country , San Sebastián, Spain M.Sc. Cognitive Neuroscience (Oct. 2013)
2007 – 2011	Beijing Normal University , Beijing, China B.Sc. Psychology (Jul. 2007)

FELLOWSHIPS, HONORS AND AWARDS

2019	Chinese government award for outstanding dissertation abroad (\$ 6,000)
2019	Fellow of Kavli Summer Institute in Cognitive Neuroscience, Santa Barbara, CA, USA
2018	Fellow of Advanced Scientific Programming in Python, G-Node. Camerino, Italy.
2014	Fellow of European Summer School on “Computational Modeling of Cognition with Applications to Society”. Laufen, Germany.
2014	Fellow of HBP Training School, Human Brain Project (HBP). Alpbach, Austria.
2010	National Scholarship for Undergraduate Students (\$1,000), China

FUNDINGS

2019	Researchers Career Grants (€ 2,300), FFG (Austrian Research Promotion), Austria
2018	Transitional Postdoc Fellowship (€ 56,000), UKE, Germany
2013 – 2016	Graduate Fellowship (€ 43,000), DFG (German Research Foundation), Germany
2012 – 2013	Graduate Fellowship (€ 16,000), BCBL, Spain
2009 – 2011	National Innovation Experiment Program (€ 1,400), China
2009 – 2010	BNU Undergraduate Research Fund (€ 250), China

TRAINING SCHOOLS

09 / 2015	Programming for Everybody (Python). Coursera.
02 / 2015	Zurich SPM Course. Zurich, Switzerland.
11 / 2014	Bayesian Statistics for Cognitive Modeling. UKE, Hamburg, Germany.
04 / 2014	Statistical Analysis of fMRI Data. Coursera.
12 / 2013	2 nd Lübecker Short Course on fMRI Data Acquisition and Analysis. Lübeck, Germany.

TEACHING EXPERIENCE

since 2019 WS	Introductory course for first-year PhD students. Experimental Design and Statistics. Max Planck School of Cognition. Leipzig, Germany
since 2019 WS	Introductory Seminar (bachelor’s level) Biological Basis of Experience and Behavior: Decision Neuroscience (6 ETCS). UNIVIE, Vienna, Austria.
since 2019 SS	Advanced seminar (master’s level). Bayesian Statistics and Hierarchical Bayesian Modeling for Psychological Science (4 ETCS). UNIVIE, Vienna, Austria.
08 / 2019	2-day workshop: Bayesian Sprint 2.0. Peking University, Beijing, China.
08 / 2019	3-day workshop: Bayesian Sprint 2.0. Nanjing University, Nanjing, China.
04 / 2019	2-day workshop: Bayesian Sprint 2.0. UNIVIE, Vienna, Austria.
11 / 2018	4-day workshop: (Part1) Statistical Thinking with R; (Part2) Reinforcement learning: From theory to implementation. UiT, Tromsø, Norway.
10 / 2018	3-day workshop: Bayesian hierarchical modeling (2 ECTS). UKE, Hamburg, Germany.
06 / 2018	3-day workshop: R stats and Bayesian hierarchical modeling. UiT, Tromsø, Norway.
08 / 2017	Workshop: Modeling reinforcement learning and decision-making tasks with the hBayesDM package. King’s College London, London, UK.
10 / 2016	3-day workshop: Bayesian statistics and Bayesian cognitive modeling (with teaching certificate, 2 ECTS). UKE, Hamburg, Germany.
09 / 2014	2-day workshop: Intro2Matlab for psychologists. Institute of Psychology, Chinese

Academy of Science, Beijing, China.

2010 Teaching assistant for undergraduate courses *Social Psychology* (Autumn 2010) and
2011 *Cognition and Emotion of Children* (Spring 2011). BNU, Beijing, China.

RESEARCH SKILLS

Research Methods	Behavioral measure (advanced knowledge), fMRI (advanced knowledge), EEG/ERP (good knowledge), Physiological recording (basic knowledge)
Data Analysis Methods	Bayesian hierarchical modeling (advanced knowledge), Cognitive modeling (advanced knowledge), Reinforcement learning (advanced knowledge), General linear models (good knowledge), Machine learning (good knowledge)
Data Analysis Tools	The hBayesDM package (co-author), SPM (good knowledge), FSL (basic knowledge)
Programming	Matlab (advanced knowledge), Stan (advanced knowledge), JAGS (good knowledge), R (good knowledge), Python (basic knowledge), Shell scripting (basic knowledge)
Stimulus Presentation	Cogent Toolbox (advanced knowledge), Psychophysics Toolbox (basic knowledge)

PUBLICATIONS

Working papers

Zhang, L., Gläscher, J. (in prep.). Falsifying cognitive computational models is as important as model selection: A tutorial on evaluating posterior predictions with hierarchical Bayesian methods.

Bayer, J., Rusch, T., **Zhang, L.**, Gläscher, J., & Sommer, T. (under review). Dose-dependent effects of estrogen on prediction error related neural activity in the nucleus accumbens of healthy young women.

Preprints

Zhang, L.*, Lengersdorff, L.*, Mikus, N., Gläscher, J., & Lamm, C. (2019). Using reinforcement learning models in social neuroscience: Frameworks, pitfalls, and suggestions. ***Co-first authors**. *PsyArXiv*, 10.31234/osf.io/uthw2

Zhang, L., Gläscher, J. (2019). A network supporting social influences in human decision-making. *bioRxiv*, 551614.

Crawley, D.*, **Zhang, L.***, Emily, J., ..., den Ouden, H., Loth, E., & the EU-AIMS LEAP group (2019).

Modeling cognitive flexibility in autism spectrum disorder and typical development reveals comparable developmental shifts in learning mechanisms ***Co-first authors**. *PsyArXiv*, 10.31234/osf.io/h7jcm

Zhou, L.*, **Zhang, L.***, Su, Y., & Liang, ZY. (2019). Is zero void? Attentional mechanism of hidden-zero effect in risky decision-making. ***Co-first authors**. *PsyArXiv*, 10.31234/osf.io/pmhsa

Conference proceedings

Zhang, L., Kandil, F., Hilgetag, C.C., & Gläscher, J. (2019). The causal role of temporoparietal junction in computing social influence in human decision-making. *Cognitive Computational Neuroscience (CCN 2019)*. Berlin, Germany. 10.32470/CCN.2019.1120-0

Peer-reviewed articles

Zhou, L., Li, AM., **Zhang, L.**, Li, S., & Liang, ZY. (2019). Similarity in processes of risky choice and intertemporal choice: The case of certainty effect and immediacy effect. *Acta Psychologica Sinica*. 51(3), 337-352.

Zhang, L., Redžepović, S., Rose, M., & Gläscher, J. (2018). Zen and the Art of Making a Bayesian Espresso. *Neuron*, 98(6), 1066-1068.

- Hu, Y., He, L.* , **Zhang, L.***, Wölk, T., Dreher, J. C., & Weber, B. (2018). Spreading inequality: Neural computations underlying paying-it-forward reciprocity. *Social cognitive and affective neuroscience*, 13(6), 578-589. ***Equal contribution.**
- Ahn, W.-Y., Haines, N., & **Zhang, L.** (2017). Revealing neurocomputational mechanisms of reinforcement learning and decision-making with the hBayesDM package. *Computational Psychiatry*, 1, 24-57.
- Zhang, L.**, Martínez, A., & Salillas, E. (2014). Brain potentials reveal audiovisual integration in bilinguals on arithmetic fact retrieval. *Proceedings of the 2014 IEEE International Conference on Multisensor Fusion and Information Integration for Intelligent Systems (MFI)*, pp. 1-6.
- Yu, S., Lei, X., & **Zhang, L.** (2010). A survey on need-abandonment among university students. *Proceedings of the 18th BNU "JingShi Cup" Academic Competition*, the 3rd Prize, (in Chinese).
- Zhang, L.***, Zheng, X.* (2009). An investigation of college students' concept of death and self-identity attribution analysis. *Proceedings of the 17th BNU "JingShi Cup" Academic Competition*, the 2nd Prize, (in Chinese). ***Co-first authors.**

CONFERENCE ABSTRACTS

- Zhang, L.***, Lengersdorff, L.* , Mikus, N., Gläscher, J., & Lamm, C. (2019). Using reinforcement learning models in social neuroscience: Frameworks, pitfalls, and suggestions. ***Co-first authors.** Talk presented at the 3rd Chinese Association for Psychological & Brain Science annual meeting. Utrecht, Netherlands.
- Zhang, L.**, Kandil, F., Hilgetag, C.C., & Gläscher, J. (2019). The causal role of temporoparietal junction in computing social influence in human decision-making. *Poster presented at Symposium on "Biology of Decision Making (SBDM)*. Oxford, UK.
- Crawley, D.* , **Zhang, L.***, Emily, J., ..., den Ouden, H., Loth, E., & the EU-AIMS LEAP group (2019). Modeling cognitive flexibility in autism spectrum disorder and typical development reveals comparable developmental shifts in learning mechanisms. ***Co-first authors.** *Poster to be presented at Roche Joint RPF/RiSE Symposium*. Basel, Switzerland.
- Zhang, L.**, Gläscher, J. (2018). Neurocomputational mechanisms of social influence in goal-directed learning. *Poster (poster spotlight) presented at FENS Spring Brain Conference: Computational Neuroscience of Prediction*. Rungstedgaard, Denmark.
- Zhang, L.**, Hipp, J., Taylor, K., Chatham, C., & Bolognani, F. (2017). Age-binned normalization of Vineland™-II increases variability in standard scores: Implications for clinical trials in Autism Spectrum Disorder (ASD). *Poster presented at The International Meeting for Autism Research (IMFAR)*, San Francisco, CA, USA.
- Zhou, L.* , **Zhang, L.***, & Liang, Z.-Y. (2016). Comparing the underlying process between intertemporal choice and risky choice. *Talk presented at the 35th Annual Meeting of the European Group of Process Tracing Studies (EGPROC)*, Bonn, Germany. ***Co-first authors.**
- Zhang, L.**, Gläscher, J. (2015). Modeling social influence on human decision-making with reinforcement learning theory: A Bayesian perspective. *Poster presented at the Society for Neuroscience Annual meeting (SfN 2015)*, Chicago, IL, USA.
- Zhang, L.**, Gläscher, J. (2015). Modeling social influence on human decision-making. *Talk presented at the 57th Conference of Experimental Psychologists (TeaP)*, Hildesheim, Germany.
- Zhang, L.**, Gläscher, J. (2014). Reinforcement learning signals of social influence on human decision-making. *Poster presented at the Bernstein Conference 2014*, Göttingen, Germany.
- Zhang, L.**, Martínez, A., & Salillas, E. (2014). The role of finger-based number representations in online

arithmetic facts retrieval. *Poster presented at the 20th Annual Meeting of the Organization for Human Brain Mapping (OHBM)*, Hamburg, Germany.

TALKS

2019	Decision Neuroscience Lab (PI: Sebastian Gluth), University of Basel, Switzerland
2018	Neuroeconomics Lab (PI: Jean-Claude Dreher), CNRS, Lyon, France
2017	Loth Lab (PI: Eva Loth), King's College London, London, UK
2017	Roche NORD Research Forum, Basel, Switzerland
2016	Internal seminar at UKE, Hamburg, Germany
2015	International Workshop on the Neurobiology of Social Influence Moscow, Russia

PROFESSIONAL AFFILIATIONS AND MEMBERSHIPS

2018 – 2020	The European Society for Cognitive and Affective Neuroscience (ESCAN)
2014 – 2017	Bernstein Association for Computational Neuroscience
2015	Society for Neuroscience (SfN)
2014	Organization for Human Brain Mapping (OHBM)
2013	Society for the Neurobiology of Language (SNL)

AD HOC REVIEWING

Review editor	Frontiers in Psychology
Reviewer	Social, Cognitive and Affective Neuroscience, Scientific Reports
Co-reviewer	Nature Communications, Proceedings of the National Academy of Sciences, Journal of Neuroscience, NeuroImage
Conference Reviewer	Cognitive Computational Neuroscience (CCN) 2019, Chinese Association for Psychological & Brain Science (CAPBS) 2019

PERSONAL QUALIFICATIONS

Languages	Chinese (native), English (working proficiency), German (beginner), Spanish (basic)
Computer Skills	Microsoft Certified Application Specialist (MCAS) in Microsoft Word 2007, Google Power Searcher, Windows OS, Linux OS, Mac OS

MISCELLANEOUS

2013 – 2014	Contract Translator. Zheng, X., Zhang, L. , & Jiang, W. (2016). Health psychology. <i>China Light Industry Press</i> . Beijing, China. (Original copy: Brannon, L., Feist, J., & Updegraff, J. (2013). <i>Health psychology: An introduction to behavior and health</i> . United States: Cengage Learning.)
2008	Excellent Olympic Volunteer of Olympic Media Village, Beijing Olympic Games.
2007 – 2009	Member of BNU Student Choir, participated in national concerts.
2006	Member of Tianjin No.1 High School Student Choir, participated in regional and international concerts.

STUDENT SUPERVISIONS

Fabian Renz	University of Vienna (2019 – present)
Vivien Breckwoldt	University Medical Center Hamburg-Eppendorf (2018 – present)
Julia Majewski	University Medical Center Hamburg-Eppendorf (2016 – 2017)
Kiona Weisel	University Medical Center Hamburg-Eppendorf (2014 – 2015)

ACADEMIC REFERENCES

Prof. Dr. Claus Lamm

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Department of Basic Psychological Research and Research Methods
Faculty of Psychology, University of Vienna, Vienna, Austria
Email: claus.lamm@univie.ac.at

Dr. Jan Gläscher

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“Valuation and Social Decision-Making”
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Prof. Dr. med. Christian Büchel

Director
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Dr. Christopher Chatham

Senior Scientist, Biomarker Experimental Medicine Leader
F. Hoffmann-La Roche AG, Basel, Switzerland
Neuroscience, Ophthalmology and Rare Diseases (NORD)
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