

# Zhan, Likan

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## Profile

Likan Zhan, Associate Professor at the School of Psychology and Cognitive Science, Beijing Language and Culture University; Master's supervisor in Linguistics, Psychology and Speech-Language Pathology. He holds a Ph.D. in Cognitive Science from Macquarie University, Australia, and was a visiting scholar at the Department of Mathematics, Linnaeus University, Sweden. His research interests include language comprehension, logical reasoning, quantum cognition, theory of mind, and social cognition, with applications to both typically developing children and those with developmental disorders. He has led a project funded by the National Social Science Foundation of China and has published dozens of papers in SCI and SSCI journals. For more information, please visit his personal website: <https://likan.org>

## Academic Appointment

- 2024.03 ~ 2025.04, Visiting Scholar,  
Department of Mathematics,  
Linnaeus University, Växjö, Sweden
- 2018.12 ~ Now, Associate professor,  
School of Psychology and Cognitive Science,  
Beijing Language and Culture University, Beijing, China
- 2016.06 ~ 2018.11, Assistant professor,  
School of Communication Science,  
Beijing Language and Culture University, Beijing, China
- 2014.09 ~ 2016.05, Assistant professor,  
Faculty of Linguistic Sciences,  
Beijing Language and Culture University, Beijing, China

## Education

- 2010.10 ~ 2014.09, Ph.D. Cognitive Science,  
Macquarie University, Sydney, Australia
- 2007.09 ~ 2010.07, M.E. Cognitive Psychology,  
Beijing Language and Culture University, Beijing, China

- 2000.09 ~ 2004.07, B.A. Teaching Chinese as a Second Language, Beijing Language and Culture University, Beijing, China

## Teaching Experience

- 2025 ~ Now. *Introduction to Linguistics*, Undergraduates, 2 hours per week
- Archives
  - Educational Psychology* (2022 ~ 2024)
  - Statistics with Julia* (2021 ~ 2024)
  - R for Modeling and Visualizing Data* (2016 ~ 2021)
  - Experimental Psychology* (2019 ~ 2021)
  - Introduction to Neurolinguistics* (2019 ~ 2021)
  - Statistics for the Behavioral Sciences* (2017-2024)
  - Introduction to Cognitive Neuroscience* (2015 ~ 2020)
  - Foundations of Scientific Research* (2015 ~ 2021)

## Grants, Projects, and Awards

### 1. Grants

- **Zhan, L.**, Zhou, P., Zhang, L., & Crain, S. (2019 - 2023). The acquisition and online processing of irrealis in Mandarin Chinese. *The National Social Science Fund of China*. [Grant No. 19BYYo87]. (¥200,000). Role: Principle Investigator.
- **Zhan, L.**, Qu, Y., Xu, J., Xiao, Y., & Li, N. (2019 - 2020). The eye movements pattern and neural oscillation markers of predictive processing in language comprehension. *The Fundamental Research Funds for the Central Universities*. [Grant No. 19YJ080002]. (¥70,000). Role: Principle Investigator.
- **Zhan, L.**, Shi, F., Gao, L., & Zhang, L. (2019 - 2020). The online processing and acquisition of lexical tone in Mandarin Chinese. *The Fundamental Research Funds for the Central Universities*. [Grant No. 18YBT15]. (¥70,000). Role: Principle Investigator.
- Shi, D., et al. (2018 - 2023). Studies of Chinese in Generative Grammar and Development of Chinese Grammar in the New Era. *The Major Project of the National Social Science Found of China*. [Grant No. 18ZDA291]. (¥800,000). Role: Co-Investigator.
- Si, F., et al. (2018 - 2023). Language acquisition and language cognition under the perspective of syntactic cartography. *The Fundamental Research Funds for the Central Universities*. [Grant No. 18ZD]o6]. (¥300,000). Role: Co-Investigator.
- **Zhan, L.** (2015 - 2016). Experimental explorations of possible world semantics. *The Fundamental Research Funds for the Central Universities*. [Grant No. 15YBB29]. (¥20,000). Role: Principle Investigator.
- **Zhan, L.** (2015 - 2016). Introduction to psychology and the scientific research. *The Funds Supporting the Growth of the New Teachers*. [Grant No. FD201530]. (¥7,000). Role: Principle Investigator.

- **Zhan, L.**, Shi, F., Gao, L., & Zhang, L. (2015 - 2016). The Processing and acquisition of tone in Mandarin Chinese. *The Fundamental Research Funds for the Central Universities*. [Grant No. 15YJ050003]. (¥70,000). Role: Principle Investigator.
- **Zhan, L.** (2010 - 2014). The interpretation of conditionals in natural language. *Cognitive Science Postgraduate Research Grant of Macquarie University*. (\$10,570). Role: Principle Investigator.
- **Zhan, L.** (20103). The hypothetical property of conditionals in natural language. *Macquarie University Postgraduate Research Fund*. (\$4,684). Role: Principle Investigator.

## 2. Projects

- Zhang, L., et al. (2018 - Now). The psychological and brain development of atypical developing adolescences. *The Program of WuTong Innovations Platforms*. Role: Co-Investigator.
- Chen, M., et al. (2019 - Now). The study of Chinese as a second language acquisition and second language teaching (The JunCai Group). *The Program of Establishing First-Class Disciplines in BLCU*. Role: Co-Investigator.

## 3. Awards

- 2013.11. The Paula Menyuk Travel Award for the 38th Boston University Conference on Language Development. (\$300).
- 2013.04. The Travel Award for the 26th Annual CUNY Sentence Processing Conference. (\$350).

# Professional Activities

## 1. Ad-hoc reviews

*Acta Psychologica* (2025 - )  
*Architectures and Mechanisms for Language Processing (AMLaP)* (2024 - )  
*Annual Conference on Human Sentence Processing (HSP)* (2024 - )  
*Journal of Psycholinguistic Research* (2023 - )  
*Journal of Pragmatics* (2022 - )  
*Cognition* (2021 - )  
*International Journal of Developmental Disabilities* (2021 - )  
*Language, Cognition and Neuroscience* (2021 - )  
*First Language* (2021 - )  
*Frontiers in Psychology* (2020 - )  
*Scientific Reports* (2018 - )  
*Journal of Visualized Experiments* (2018 - )  
*Language Teaching and Linguistic Studies* (In Chinese, 2016 - )  
*SAGE Open* (2016 - )

## 2. Clinical licenses

- Licensed Examiner of Wechsler Preschool and Primary Scale of Intelligence 4th Edition (WPPSI-VI) Chinese Version.
- Licensed Examiner of Adaptive Behavior Assessment System 2nd Edition (ABAS-II) Chinese Version.









## 3. Frontiers in Psychology, Review Editor in Language Sciences (2020 - )














## 4. Organization of international meetings

- Academic Advisory Committee, The 24th annual conference of the International Association of Chinese Linguistics (IACL-24), Beijing Language and Culture University, Beijing, China.


# Publications

## 1. Periodicals







- Yang, X., & **Zhan, L.** (2026). Orthographic processing was facilitated by phonologically but not semantically similar distractors: Evidence from the visual structure judgment of Mandarin Chinese characters using the Flanker paradigm. *Cognitive Processing*. <https://doi.org/10.1007/s10339-026-01336-6> 
- **Zhan, L.**, Lv, W., Yin, L., Guo, C., & Lu, C. (2025). Tone disruptions in Mandarin post-stroke aphasia: an fNIRS study on Broca's area using the auditory oddball paradigm. *Neurophotonics*, 13(S1). <https://doi.org/10.1117/1.NPh.13.S1.S13006> 
- Yang, X., **Zhan, L.**, & Wang, Y. (2025). Semantic projection as a method to measure individual differences in semantic scale length: insights from autism-related traits. *Scientific Reports*, 15, 40119. <https://doi.org/10.1038/s41598-025-23993-x> 
- **Zhan, L.**, Wang, M. (2025). Probabilities of conditionals: The relevance effect might be confounded by the existence of boundary cases. *Psychonomic Bulletin & Review*. <https://doi.org/10.3758/s13423-025-02725-2> 
- Lu, C., Wang, M., **Zhan, L.**, & Lu, M. (2025). Unveiling Cognitive Interference: fNIRS Insights Into Poststroke Aphasia During Stroop Tasks. *Neural Plasticity*, 2025, 1456201. <https://doi.org/10.1155/np/1456201> 
- Xie, Y., Zhou, P., **Zhan, L.**, & Xue, Y. (2025). Low-frequency neural activity tracks syntactic information through semantic mediation. *Brain and Language*, 261. <https://doi.org/10.1016/j.bandl.2025.105532> 
- **Zhan, L.**, Khrennikov, A., & Zhu, Y. (2024). Violation of Leggett–Garg inequality in perceiving cup-like objects and cognitive contextuality. *Entropy*, 26(11). <https://doi.org/10.3390/e26110950> 
- **Zhan, L.**, & Zhou, P. (2023). The online processing of hypothetical events: A visual world eye-tracking study on conditionals and causal statements. *Experimental Psychology*, 70(2), 108-117. <https://doi.org/10.1027/1618-3169/a000579> 

- Zhou, P., Shi, J., & **Zhan, L.** (2021). Real-time comprehension of garden-path constructions by preschoolers: A Mandarin perspective. *Applied Psycholinguistics*, 42(1), 181-205. <https://doi.org/10.1017/S0142716420000697> 
- Zhou, P., Ma, W., & **Zhan, L.** (2019). A deficit in using prosodic cues to understand communicative intentions by children with autism spectrum disorders: An eye-tracking study. *First Language*. <https://doi.org/10.1177/0142723719885270> 
- Zhou, P., **Zhan, L.**, & Ma, H. (2019). Understanding others' minds: Social inference in preschool children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 49(11), 4523-4534. <https://doi.org/10.1007/s10803-019-04167-x> 
- Zhou, P., **Zhan, L.**, & Ma, H. (2019). Predictive language processing in preschool children with Autism Spectrum Disorder: An eye-tracking study. *Journal of Psycholinguistic Research*, 48(2), 431-452. <https://doi.org/10.1007/s10936-018-9612-5> 
- **Zhan, L.** (2018). Using eye movements recorded in the visual world paradigm to explore the online processing of spoken language. *Journal of Visualized Experiments*, 140, e58086. <https://doi.org/10.3791/58086> 
- Zhou, P., Ma, W., **Zhan, L.**, & Ma, H. (2018). Using the visual world paradigm to study sentence comprehension in Mandarin-speaking children with autism. *Journal of Visualized Experiments*, 140, e58452. <https://doi.org/10.3791/58452> 
- **Zhan, L.**, Zhou, P., & Crain, S. (2018). Using the visual-world paradigm to explore the meaning of conditionals in natural language. *Language, Cognition and Neuroscience*, 33(8), 1049-1062. <https://doi.org/10.1080/23273798.2018.1448935> 
- **Zhan, L.** (2018). Scalar and ignorance inferences are both computed immediately upon encountering the sentential connective: The online processing of sentences with disjunction using the visual world paradigm. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.00061> 
- Moscati, V., **Zhan, L.**, & Zhou, P. (2017). Children's on-line processing of epistemic modals. *Journal of Child Language*, 44(5), 1025-1040. <https://doi.org/10.1017/S0305000916000313> 
- **Zhan, L.**, Crain, S., & Zhou, P. (2015). The online processing of only if- and even if- conditional statements: Implications for mental models. *Journal of Cognitive Psychology*, 26(7), 367-379. <https://doi.org/10.1080/20445911.2015.1016527> 
- Zhou, P., Crain, S., & **Zhan, L.** (2014). Grammatical aspect and event recognition in children's online sentence comprehension. *Cognition*, 133(1), 262-276. <https://doi.org/10.1016/j.cognition.2014.06.018> 
- Zhou, P., Crain, S., & **Zhan, L.** (2012). Sometimes children are as good as adults: The pragmatic use of prosody in children's on-line sentence processing. *Journal of Memory and Language*, 67(1), 149-164. <https://doi.org/10.1016/j.jml.2012.03.005> 
- Zhou, P., Su, Y., Crain, S., Gao, L., & **Zhan, L.** (2012). Children's use of phonological information in ambiguity resolution: A view from Mandarin Chinese. *Journal of Child Language*, 39(04), 687-730. <https://doi.org/10.1017/S0305000911000249> 

## 2. Book, book chapters and conference proceedings





- **Zhan, L.** (2015). *The Interpretation of Conditionals in Natural Language*. Saarbrücken, Germany: Lap Lambert Academic Publishing.
- **Zhan, L.** (2018). Magnetoencephalography (MEG) as a Technique for Imaging Brain Function and Dysfunction. In *Top 10 Contributions on Psychology* (Chapter 4, pp. 1-38). Telangana, India: Avid Science 
- **Zhan, L., Crain, S., & Zhou, P.** (2013). The anticipatory effects of focus operators: A visual-world paradigm eye-tracking study of “only if” and “even if” conditionals. In N. Goto, K. Otaki, A. Sato, & K. Takita (Eds.), *Proceedings of GLOW in Asia IX 2012*. Mie University, Japan.






## 4. Peer reviewed conference presentations

- **Zhan, L., Xue, Y., Zhou, P., & Xie, Y.** (2024, September). *Does cortical tracking signify linguistic hierarchical structures in the visual domain?* Poster session presented at the 30th Architectures and Mechanisms for Language Processing (AMLaP24), University of Edinburgh, Scotland. 
- **Zhan, L., Khrennikov, A.** (2024, June). *Violation of Leggett–Garg inequality in perceiving bistable cup-like objects.* Poster session presented at the 25th Quantum Information and Probability: from Foundations to Engineering (QIP24), Linnaeus University, Växjö, Sweden. 
- **Zhan, L.** (2023, April). *The modality engendered by negation and where to find it.* Oral session presented at the 14th Biennial Academic Conference of Beijing Language and Culture University, Beijing, China. 
- **Zhan, L.** (2020, October). *Non-factual property entailed by conditionals has to be endorsed by a valid theory of verbal reasoning.* Oral session presented at the 13th Biennial Academic Conference of Beijing Language and Culture University, Beijing, China. 
- **Zhan, L., & Zhou, P.** (2019, June). *Children differ from adults in interpreting disjunctions: Evidence from an eye-tracking study.* Poster session presented at Psycholinguistics in Iceland - Parsing and Prediction, University of Iceland, Reykjavík, Iceland. 
- **Zhan, L.** (2017, September). *Scalar implicature and ignorance inference are both locally computed: Evidence from the online processing of disjunctions using the visual world paradigm.* Oral session presented at the Second High-level Forum on Cognitive Linguistics, University of International Business and Economics, Beijing, China. 
- **Zhan, L., Crain, S., & Zhou, P.** (2013, November). *Going beyond the information that is perceived: The hypothetical property of if-conditionals in Mandarin Chinese.* Oral session presented at the Second International Conference on Psycholinguistics in China, Fuzhou, China.
- **Moscatti, V., Zhan, L., & Zhou, P.** (2013, November). *Reasoning on possibilities: An eye tracking study on modal knowledge.* Poster session presented at the 38th Annual Boston University Conference on Language Development, Boston University, MA.

- Zhou, P., Crain, S., & **Zhan, L.** (2013, November). *Anticipatory eye movements in children's processing of grammatical aspect*. Poster session presented at the 38th Annual Boston University Conference on Language Development, Boston University, MA.
- **Zhan, L.**, Crain, S., & Zhou, P. (2013, March). *The hypothetical property of "if"-statements: A visual-world paradigm eye-tracking study*. Poster session presented at CUNY2013: The 26th annual CUNY Sentence Processing Conference, Columbia, SC.
- **Zhan, L.**, Crain, S., & Zhou, P. (2012, July). *The interpretation of conditionals*. Oral session presented at the 7th International Conference on Thinking (ICT2012), Birkbeck/UCL, London, UK.
- Zhou, P., Crain, S., & **Zhan, L.** (2012, March). *Children's pragmatic use of prosody in sentence processing*. Poster session presented at the 35th Generative Linguistics in the Old World (GLOW) Workshop: Production and Perception of Prosodically-Encoded Information Structure, University of Potsdam, Potsdam, Germany.
- **Zhan, L.**, Crain, S., & Khlentzos, D. (2011, August). *The basic semantics of conditionals in natural language*. Oral session presented at the Harvard-Australia Workshop on Language, Learning and Logic, Macquarie University, Sydney, Australia.
- Zhou, P., Crain, S., Gao, L., & **Zhan, L.** (2010, September). *The role of prosody in children's focus identification*. Oral session presented at the Generative Approaches to Language Acquisition - North America 4 (GALANA-4), Toronto, Canada.
- Zhou, P., Su, Y., Crain, S., Gao, L., & **Zhan, L.** (2010, August). *Children's use of prosodic information in ambiguity resolution*. Oral session presented at the 8th Conference of Generative Linguistics in the Old World Asia (GLOW-in-Asia 8), Beijing, China.

### 3. Invited talks

- **Zhan, L.**, Khrennikov, A., & Zhu, Y. (2024, August). *Confirming cognitive contextuality: Violation of the Leggett-Garg inequality and demonstration of cognitive hysteresis in perceiving cup-like objects*. Invited presentation given at 19th Southeast Conference in Mathematics, Blekinge Institute of Technology, Karlskrona, Sweden. 
- **Zhan, L.** (2024, May). *Probability of implication*. Invited presentation given at Department of Mathematics, Linnaeus University, Växjö, Sweden. 
- **Zhan, L.** (2023, November). *Visual world paradigm: An eye-tracking technique to study the real time processing of spoken Language*. Invited presentation given at the "The Frontier of Language and Cognitive Science: Perspectives from Chinese and Western Scholars" Lecture Series organized by the Center for the Cognitive Science of Language, Beijing Language and Culture University, Beijing, China. 
- **Zhan, L.** (2022, May). *Mixed Models with Julia*. Invited virtual lecture given at the course of *Language* organized by Prof. Zhou. 

- **Zhan, L.** (2020, October). *Language and Language Development*. Invited lecture given at the course of *Language +* organized by Prof. Si. 
- **Zhan, L.** (2019, August). *Gardener or Carpenter: Some thoughts on nurturing a child*. Invited presentation given at Smiland Daycare Center. 
- **Zhan, L.** (2018, December). *Sentential reasoning and sentential connectives: Conditional, disjunction, negation, and modality*. Invited presentation given at the Workshop of Theoretical and Experimental Linguistics, Tsinghua University, Beijing, China. 
- **Zhan, L.** (2018, November). *Methods of cognitive neuroscience: Focus on language*. Invited presentation given at the Child Cognition Laboratory, Department of Foreign Languages and Literatures, Tsinghua University, Beijing, China. 
- **Zhan, L.** (2018, November). *Visual world paradigm: An eye-tracking technique to study the real time processing of spoken Language*. Invited presentation given at the Center for Studies of Chinese as a Second Language, Beijing Language and Culture University, Beijing, China. 
- **Zhan, L.** (2018, October). *Experimental Builder: A what-you-see-is-what-you-get tool to build experiment scripts*. Invited presentation given at the Center for Studies of Chinese as a Second Language, Beijing Language and Culture University, Beijing, China. 