Stanford



Robert Hawkins

Assistant Professor of Linguistics and, by courtesy, of Psychology

Bio

BIO

I direct the Social Interaction & Language (SoIL) Lab at Stanford University. We're interested in the cognitive mechanisms that allow people to flexibly communicate, collaborate, and coordinate with one another. We work on these problems using large-scale, multi-player web experiments and computational models of language and social reasoning.

ACADEMIC APPOINTMENTS

- Assistant Professor, Linguistics
- Assistant Professor (By courtesy), Psychology
- Member, Bio-X
- Member, Wu Tsai Neurosciences Institute

PROGRAM AFFILIATIONS

- Symbolic Systems Program

PROFESSIONAL EDUCATION

- BS, Indiana University , Cognitive Science and Mathematics (2014)
- PhD, Stanford University , Psychology (2019)

Teaching

COURSES

2026-27

- How We Talk Online: LINGUIST 34N (Aut)
- Language & Social Interaction Research Lab: LINGUIST 247S (Aut, Win, Spr)
- Methods in Psycholinguistics: LINGUIST 245B, SYMSYS 195L (Spr)
- Research Workshop: LINGUIST 395 (Spr)

2025-26

- Language & Social Interaction Research Lab: LINGUIST 247S (Aut, Win, Spr)
- Methods in Psycholinguistics: LINGUIST 245B, SYMSYS 195L (Spr)
- Research Workshop: LINGUIST 395 (Spr)

2024-25

- Language & Social Interaction Research Lab: LINGUIST 247S (Aut, Win, Spr)
- Methods in Psycholinguistics: LINGUIST 245B, SYMSYS 195L (Spr)

STANFORD ADVISEES

Tilly Brooks, Hannah Guan, Arjun Pawar

Doctoral Dissertation Reader (AC)

Grace Brown, Alvin Tan

Postdoctoral Faculty Sponsor

Yajun Liu

Doctoral Dissertation Advisor (AC)

Ke Fang, Selena She

Doctoral (Program)

Yuka Machino

Publications

PUBLICATIONS

- **When More Words Say Less: Decoupling Length and Specificity in Image Description Evaluation**
  Kapur, R., Hawkins, R., Kreiss, E.
  edited by Liakata, M., Moreira, V. P., Zhang, J., Jurgens, D.
  ASSOC COMPUTATIONAL LINGUISTICS-ACL.2026: 410-422
- **Gesturing Toward Abstraction: Multimodal Convention Formation in Collaborative Physical Tasks**
  Maeda, K., McCarthy, W. P., Tsai, C., Mu, J., Wang, H., Hawkins, R., Fan, J. E., Abtahi, P., ACM
  ASSOC COMPUTING MACHINERY.2026
- **Using LLMs to advance the cognitive science of collectives.** *Nature computational science*
  Sucholutsky, I., Collins, K. M., Jacoby, N., Thompson, B. D., Hawkins, R. D.
  2025
- **Relevant answers to polar questions.** *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*
  Hawkins, R. D., Tsvilodub, P., Bergey, C. A., Goodman, N. D., Franke, M.
  2025; 380 (1932): 20230505
- **Lexical search and social reasoning jointly explain communication in associative reference games.** *Journal of experimental psychology. General*
  Kumar, A. A., Hawkins, R. D.
  2025
- **Core Knowledge Deficits in Multi-Modal Language Models**
  Li, Y., Gao, Q., Zhao, T., Wang, B., Sun, H., Lyu, H., Hawkins, R. D., Vasconcelos, N., Golan, T., Luo, D., Deng, H., Wagstaff, K.
  edited by Singh, A., Fazel, M., Hsu, D., Lacoste-Julien, S., Berkenkamp, F., Maharaj, T., Zhu, J.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2025: 34379-34409
- **Evaluating distillation methods for data-efficient syntax learning**
  Yamakoshi, T., Griffiths, T. L., McCoy, R., Hawkins, R. D.
  edited by Christodoulopoulos, C., Chakraborty, T., Rose, C., Peng
  ASSOC COMPUTATIONAL LINGUISTICS-ACL.2025: 14834-14847
- **Parents spontaneously scaffold the formation of conversational pacts with their children** *CHILD DEVELOPMENT*
  Leung, A., Yurovsky, D., Hawkins, R. D.

2024

- **Interaction structure constrains the emergence of conventions in group communication.** *Proceedings of the National Academy of Sciences of the United States of America*
  Boyce, V., Hawkins, R. D., Goodman, N. D., Frank, M. C.
  2024; 121 (28): e2403888121

- **A Hierarchical Bayesian Model of Adaptive Teaching** *COGNITIVE SCIENCE*
  Chen, A. M., Palacci, A., Velez, N., Hawkins, R. D., Gershman, S. J.
  2024; 48 (7): e13477

- **Group Coordination Catalyzes Individual and Cultural Intelligence.** *Open mind : discoveries in cognitive science*
  Wu, C. M., Dale, R., Hawkins, R. D.
  2024; 8: 1037-1057

- **Flexible social inference facilitates targeted social learning when rewards are not observable.** *Nature human behaviour*
  Hawkins, R. D., Berdahl, A. M., Pentland, A. '., Tenenbaum, J. B., Goodman, N. D., Krafft, P. M.
  2023

- **The Emergence of Specialized Roles Within Groups** *TOPICS IN COGNITIVE SCIENCE*
  Goldstone, R. L., Andrade-Lotero, E. J., Hawkins, R. D., Roberts, M. E.
  2024; 16 (2): 257-281

- **Show or tell? Exploring when (and why) teaching with language outperforms demonstration** *COGNITION*
  Sumers, T. R., Ho, M. K., Hawkins, R. D., Griffiths, T. L.
  2023; 232: 105326

- **Shades of confusion: Lexical uncertainty modulates ad hoc coordination in an interactive communication task** *COGNITION*
  Murthy, S. K., Griffiths, T. L., Hawkins, R. D.
  2022; 225: 105152

- **A Pragmatic Account of the Weak Evidence Effect.** *Open mind : discoveries in cognitive science*
  Barnett, S. A., Griffiths, T. L., Hawkins, R. D.
  2022; 6: 169-182

- **Probing BERT's priors with serial reproduction chains**
  Yamakoshi, T., Griffiths, T. L., Hawkins, R. D., Assoc Computa Linguist
  ASSOC COMPUTATIONAL LINGUISTICS-ACL.2022: 3977-3992

- **Learning Rewards from Linguistic Feedback**
  Sumers, T. R., Ho, M. K., Hawkins, R. D., Narasimhan, K., Griffiths, T. L., Assoc Advancement Artificial Intelligence
  ASSOC ADVANCEMENT ARTIFICIAL INTELLIGENCE.2021: 6002-6010

- **Investigating representations of verb bias in neural language models**
  Hawkins, R. D., Yamakoshi, T., Griffiths, T. L., Goldberg, A. E., Assoc Computat Linguist
  ASSOC COMPUTATIONAL LINGUISTICS-ACL.2020: 4653-4663

- **The Emergence of Social Norms and Conventions.** *Trends in cognitive sciences*
  Hawkins, R. X., Goodman, N. D., Goldstone, R. L.
  2018

- **Improving the Replicability of Psychological Science Through Pedagogy** *Advances in Methods and Practices in Psychological Science.*
  Hawkins, R. D., Smith, E. N., Au, C., Arias, J. M., Catapano, R., Hermann, E., Keil, M., Lampinen, A., Raposo, S., Reynolds, J., Salehi, S., Salloum, J., Tan, et al
  2018; 1 (1): 7-18

- **Path ensembles and a tradeoff between communication efficiency and resilience in the human connectome** *BRAIN STRUCTURE & FUNCTION*
  Avena-Koenigsberger, A., Misic, B., Hawkins, R. X., Griffa, A., Hagmann, P., Goni, J., Sporns, O.
  2017; 222 (1): 603-618

- **Can two dots form a Gestalt? Measuring emergent features with the capacity coefficient.** *Vision research*
  Hawkins, R. X., Houpt, J. W., Eidels, A., Townsend, J. T.
  2016; 126: 19-33
- **A tutorial on General Recognition Theory** *JOURNAL OF MATHEMATICAL PSYCHOLOGY*
  Silbert, N. H., Hawkins, R. X.
  2016; 73: 94-109
- **The Formation of Social Conventions in Real-Time Environments** *PLOS ONE*
  Hawkins, R. X., Goldstone, R. L.
  2016; 11 (3)
- **The Formation of Social Conventions in Real-Time Environments.** *PloS one*
  Hawkins, R. X., Goldstone, R. L.
  2016; 11 (3): e0151670
- **Conducting real-time multiplayer experiments on the web** *BEHAVIOR RESEARCH METHODS*
  Hawkins, R. X.
  2015; 47 (4): 966-976
- **Bootstrap Methods for the Empirical Study of Decision-Making and Information Flows in Social Systems** *ENTROPY*
  DeDeo, S., Hawkins, R. X., Klingenstein, S., Hitchcock, T.
  2013; 15 (6): 2246-2276