

Sean T. Trott

Assistant Professor | University of California, San Diego
Cognitive Science | Psycholinguistics | Large Language Models

Phone: (707) 292-0136

Email: sttrott@ucsd.edu

Website: <https://seantrott.github.io/>

PROFESSIONAL EXPERIENCE

Assistant Teaching Professor

2022-Present

Department of Cognitive Science, University of California, San Diego
Joint Appointment in *Computational Social Science*

EDUCATION

Ph.D. Student in Cognitive Science

2016-2022

University of California, San Diego
Advisor: Benjamin Bergen

B.A. in Cognitive Science, High Honors

2010-2014

University of California, Berkeley
Thesis advisor: Terry Regier

HONORS AND AWARDS

Kavli Institute for Brain and Mind Innovative Research Grant

2025-2026

A universal code for meaning in biological and artificial neural networks.
Meenakshi Khosla, Lily Weng, **Sean Trott**, Pamela Riviere, Shreya Saha

Chancellor's Research Excellence Scholarship (CRES)

2018-2019

Why are some people better at inferring what others mean?
Mentors: Benjamin Bergen (Cognitive Science); James Hollan (Cognitive Science, CSE)

UC San Diego Teaching Awards (*Nominated by department*)

2021

PEER-REVIEWED PUBLICATIONS

Journal Articles

Ruytenbeek, N., & **Trott, S.** (2025). Do prosodic cues convey intent directly or through contrastive marking? A study of French indirect requests. *Glossa Psycholinguistics*, 4(1).

Trott, S., Walker, D. E., Taylor, S. M., & Coulson, S. (2025). Turing Jest: Distributional Semantics and One-Line Jokes. *Cognitive Science*, 49(5), e70066.

Schoenegger, P., Park, P. S., Karger, E., **Trott, S.**, & Tetlock, P. E. (2025). AI-augmented predictions: Llm assistants improve human forecasting accuracy. *ACM Transactions on Interactive Intelligent Systems*.

Zeelenberg, R., Pecher, D., van der Meijden, M. E., **Trott, S.**, & Bergen, B. (2025). Non-native Language Comprehenders Encode Implied Shapes of Objects in Memory. *Cortex*.

Trott, S. (2024). Large Language Models and the Wisdom of Small Crowds. *Open Mind*, 8, 723-738.

Trott, S. (2024). Can large language models help augment English psycholinguistic datasets? *Behavior Research Methods*, 1-19.

Jones, C., Bergen, B., & **Trott, S.** (2024). Do Multimodal Large Language Models and Humans Ground Language Similarly? *Computational Linguistics*, 1-25.

Jones, C., **Trott, S.**, & Bergen, B. (2024). Comparing Humans and Large Language Models on an Experimental Protocol Inventory for Theory of Mind Evaluation (EPITOME). *Transactions of the Association for Computational Linguistics (TACL)*.

Trott, S., Jones, C., Chang, T., Michaelov, J., & Bergen, B. (2023). Do Large Language Models know what humans know? *Cognitive Science*, 47(7), e13309.

Trott, S., & Bergen, B. (2023). Word meaning is both categorical and continuous. *Psychological Review*.

Ruytenbeek, N., Bergen, B., & **Trott, S.** (2023). Prosody and speech act interpretation: The case of French indirect requests. *Journal of French Language Studies*.

DeLong, K., **Trott, S.**, Kutas, M. (2022). Offline dominance and zeugmatic similarity normings of variably ambiguous words assessed against a neural language model (BERT). *Behavior Research Methods*.

Trott, S., Bergen, B., & Wittenberg, E. (2022). Spontaneous, controlled acts of reference between friends and strangers. *Language Resources and Evaluation*, 1-25.

Morey, R. D., Kaschak, M. P., Díez-Álamo, A. M., Glenberg, A. M., Zwaan, R. A., Lakens, D., ... **Trott, S.** ... & Ziv-Crispel, N. (2022). A pre-registered, multi-lab non-replication of the action-sentence compatibility effect (ACE). *Psychonomic bulletin & review*, 29(2), 613-626.

Trott, S., Reed, S., Kaliblotzky, D., Ferreira, V., & Bergen, B. (2022). The Role of Prosody in Disambiguating English Indirect Requests. *Language and Speech*, 00238309221087715.

Trott, S., & Bergen, B. (2022). Languages are efficient, but for whom? *Cognition*, 225, 105094.

Trott, S., & Bergen, B. (2020). Why do human languages have homophones? *Cognition*, 205, 104449.

Trott, S., & Bergen, B. (2020). When Do Comprehenders Mentalize for Pragmatic Inference?. *Discourse Processes*, 1-21.

Trott, S., & Rossano, F. (2020). The Role of Entitlement in Formatting Preferences Across Requesters and Recipients. *Discourse Processes*, 1-22.

Trott, S., & Bergen, B. (2018). Individual Differences in Mentalizing Capacity Predict Indirect Request Comprehension. *Discourse Processes*, 1-33.

Peer-Reviewed Conference Proceedings

He, Z., **Trott, S.,** Khosla, M. (2025, November.) Seeing Through Words, Speaking Through Pixels: Deep Representational Alignment Between Vision and Language Models. *Empirical Methods in Natural Language Processing (EMNLP), Main Conference*.

Vinaya, H., **Trott, S.,** & Coulson, S. (2025, September). Vision Language Model Representations Predict EEG Response to Visual and Auditory Attributes in Property Verification. *Architectures and Mechanisms for Language Processing*.

Rivière, P. D., Parkinson-Coombs, O., Jones, C., & **Trott, S.** (2025, July). Does Language Stabilize Quantity Representations in Vision Transformers? In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 47, No. 47).

Rivière, P. D., Beatty-Martínez, A. L., & **Trott, S.** (2025, April). Evaluating Contextualized Representations of (Spanish) Ambiguous Words: A New Lexical Resource and Empirical Analysis. In *Proceedings of the 2025 Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics: Human Language Technologies (Volume 1: Long Papers)* (pp. 8322-8338).

Shin, H., & **Trott, S.** (2024, June). Do language models capture implied discourse meanings? *The 2024 Meeting of the Society for Computation in Linguistics (SCiL)*.

Jones, C., **Trott, S.,** & Bergen, B. (2024). Does Reading Words Help You Read Minds? In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 46, No. 46).

Vinaya, H., **Trott, S.**, & Coulson, S. (2024) Effects of Distributional and Sensorimotor Distance Measures on the EEG during Property Verification. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 46, No. 46).

Jones, C., & **Trott, S.** (2024, May). Multimodal Large Language Models Show Evidence of Embodied Simulation. *The 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation*. Torino, Italy. (Acceptance rate: ~33%)

Jones, C. R., Chang, T. A., Coulson, S., Michaelov, J. A., **Trott, S.**, & Bergen, B. (2022). Distributional Semantics Still Can't Account for Affordances. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 44, No. 44). (Acceptance rate: 20.4%)

Trott, S., & Bergen, B. (2022). Can a pressure against homophones explain phonological neighborhoods?. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 44, No. 44). (Acceptance rate: 20.4%)

Trott, S., & Bergen, B. (2021). RAW-C: Relatedness of Ambiguous Words—in Context (A New Lexical Resource for English). *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th Joint International Conference on Natural Language Processing*. (Acceptance rate: 21.3%)

Trott, S., Torrent, T. T., Chang, N., & Schneider, N. (2020). (Re) construing Meaning in NLP. *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics*. (Acceptance rate: 25.2%)

Trott, S., Reed, S., Ferreira, V., Bergen, B. (2019). Prosodic cues signal the intent of potential indirect requests. *Proceedings of the 41st annual meeting of the Cognitive Science Society*. Montreal, Cognitive Science Society. (Acceptance rate: 18.2%)

Pending Articles

Rivière, P., & **Trott, S.** (To appear). Start Making Sense(s): A Developmental Probe of Attention Specialization Using Lexical Ambiguity. *Transactions of the Association for Computational Linguistics (TACL)*.

Conde, J., Martínez, G., Arriaga, C., **Trott, S.**, & Reviriego, P. (To appear). LLM estimates of word characteristics. *International Encyclopedia of Language and Linguistics, 3rd Edition*.

Vinaya, H., **Trott, S.**, Zeelenberg, R., Pecher, D., Coulson, S. (To appear). Words and Worlds Both: Dynamic Effects of Distributional and Sensorimotor Information in Semantic Processing. *Open Mind*.

PRESENTATIONS AND PANELS

Conference Symposia

Trott, S. [Co-organizer and Speaker]. (2025). The role of language in human and machine intelligence. *Annual Meeting of the Cognitive Science Society*. Full organizer list: Lupyan, G., Trott, S., Zettersten, M., Gentry, H., Griffiths, T., & Ivanova, A.

Invited Talks

Trott, S. (2025). Using Cognitive Science to Understand Large Language Models. *Osher Institute for Lifelong Learning in San Diego*. (November 12, 2025).

Trott, S. (2025). Epistemological challenges in the study of “Theory of Mind” in LLMs and Humans. *University of Quebec in Montreal (UQAM): Colloquium on Generative AI on the 75th Anniversary of the Turing Test*. (October 9, 2025). Recording available at: <https://dic.uqam.ca/seminaire-dic/seminaire-dic-isc-cria-9-octobre-2025-par-sean-trott/>.

Trott, S. (2025). Psychology Meets LLM-ology. *Department of Psychology, Rutgers University-Newark*. (January 29, 2025.)

Trott, S. (2025). Cognitive Science Meets LLM-ology. *Department of Cognitive Science, UC San Diego*. (January 17, 2025.)

Trott, S. (2024). Large Language Models as Model Organisms—Opportunities and Challenges. *Department of Linguistics Colloquium, UC San Diego*. (November 4, 2024.)

Trott, S. (2024). Large Language Models as Model Organisms—Opportunities and Challenges. *BetterUp Invited Speaker*. (April 2, 2024.)

Trott, S. (2024). Using Large Language Models to understand human cognition. *Weinberg Institute for Cognitive Science, University of Michigan*. (February 19, 2024).

Trott, S. (2024). Do Large Language Models Know What We Know? *COGS I, Winter 2024*. (January, 2024).

Trott, S. (2023). Using Large Language Models to understand human cognition. *COGS I, Winter 2023*. (February, 2023).

Trott, S. (2022). Word meaning is both categorical and continuous. *Department of Cognitive Science, UC San Diego* (April, 2022).

Conference Presentations

Trott, S. (2025). Do we know enough to know what language models know? *Annual Cognitive Science Society* [Symposium Presentation] (San Francisco, CA).

Jones, C., Bergen, B., & **Trott, S.** (2024). Do Multimodal Large Language Models and Humans Ground Language Similarly? *Computational Linguistics*, 1-25. (Presented at EMNLP 2024.)

Trott, S., & Bergen, B. (2022). Can a pressure against homophones explain phonological neighborhoods?. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 44, No. 44). (Acceptance rate: 20.4%)

Trott, S., & Bergen, B. (2021). RAW-C: Relatedness of Ambiguous Words—in Context (A New Lexical Resource for English). *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th Joint International Conference on Natural Language Processing*. (Acceptance rate: 21.3%)

Trott, S., Torrent, T. T., Chang, N., & Schneider, N. (2020). (Re) construing Meaning in NLP. *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics*. (Acceptance rate: 25.2%)

Select Posters and Workshop Presentations

Vinaya, H., Coulson, S., & **Trott, S.** (2025). Vision Language Model Representations Predict EEG Response to Visual and Auditory Attributes in Property Verification. *Society for Neurobiology of Language*.

He, Z., **Trott, S.,** & Khosla, M. (2025). Many-to-Many, Yet Convergent: Insights into the Alignment of Vision and Language Models. *8th Annual Conference on Cognitive Computational Neuroscience*.

Trott, S., & Rivière, P. D. (2024). Measuring and Modifying the Readability of English Texts with GPT-4. *Third Workshop on Text Simplification, Accessibility, and Readability (TSAR) at EMNLP 2024*.

Chkhaidze, A., Coulson, S., **Trott, S.,** & Kiyonaga, A. (2024, October). Visual imagery vividness predicts degree of embodied simulation during language comprehension. *Presented at the Embodied and Situated Language Processing Conference (ESLP), Naples, Italy*.

Arnett, C., Rivière, P., Chang, T., & **Trott, S.** (2024). Different Tokenization Schemes Lead to Comparable Performance in Spanish Number Agreement. In *Special Interest Group on Computational Morphology and Phonology (SIGMORPHON), North American Association for Computational Linguistics (NAACL)*.

Jones, C. R., **Trott, S.,** & Bergen, B. (2023, June). EPITOME: Experimental Protocol Inventory for Theory Of Mind Evaluation. In *First Workshop on Theory of Mind in Communicating Agents*.

Trott, S., Walker, D. (2023). Do Large Language Models Display the Fundamental Attribution Error? Presented at *Society for Judgment and Decision-Making (SJDM) 2023, in San Francisco, California.*

Trott, S., Semenuks, A., & Bergen, B. (2019). Sub-morphemic form-meaning systematicity: the impact of onset phones on word concreteness. In *The Annual Meeting of the Cognitive Science Society, 2019, Montreal, Canada.*

Trott, S., Rossano, F. (2017). Theoretical Concerns for the Integration of Repair. *AAAI Fall Symposia Series: AI for Human-Robot Interaction. Arlington, Virginia.*

Trott, S., Bergen, B. (2017). A Theoretical Model of Indirect Request Comprehension. *AAAI Fall Symposia Series: AI for Human-Robot Interaction. Arlington, Virginia.*

Dodge, E., **Trott, S.,** Gilardi, L., & Stickles, E. (2017). *Grammar Scaling: Leveraging FrameNet Data to Increase Embodied Construction Grammar Coverage.* Technical report, AAAI SS-17-02.

Trott, S., Eppe, M., & Feldman, J. (2016). Recognizing Intention from Natural Language : Clarification Dialog and Construction Grammar. *Workshop on Communicating Intentions in Human-Robot Interaction.* Columbia University, New York University.

Trott, S., Appriou, A., Feldman, J., & Janin, A. (2015). Natural Language Understanding and Communication for Multi-Agent Systems. *AAAI Fall Symposium*, 137–141. Arlington, 2017.

TEACHING AND MENTORSHIP

Note: although I develop material for all courses I teach, the “” means that a course design was either entirely re-envisioned or created from scratch.*

Primary Instructor

2020-Present

CSS 211*: Statistical Methods for Computational Social Science [Fall, 2025]

COGS 150*: Large Language Models and Cognitive Science [Fall, 2025]

COGS 150*: Large Language Models and Cognitive Science [Spring, 2025]

CSS 100*: Advanced Programming for Computational Social Science [Spring, 2025]

CSS 100*: Advanced Programming for Computational Social Science [Spring, 2024]

COGS 101C: Language [Spring, 2024]

COGS 150*: Large Language Models and Cognitive Science [Winter, 2024]

CSS 2*: Data and Model Programming for Computational Social Science [Winter, 2024]

COGS 153*: Language Comprehension [Fall, 2023]

CSS 1*: Introductory Programming for Computational Social Science [Fall, 2023]

COGS 14A: Introduction to Research Methods [Spring, 2023]

COGS 101C: Language [Winter, 2023]

CSS 2*: Data and Model Programming for Computational Social Science [Winter, 2023]
CSS 1*: Introductory Programming for Computational Social Science [Fall, 2022]
COGS 101C: Language [Spring, 2022]
COGS 14B: Introduction to Statistical Analysis [Summer 2021]
COGS 14B: Introduction to Statistical Analysis [Summer 2020]

Teaching Assistant

2016-2022

COGS 101C: Language [Winter, 2022]
COGS 137: Practical Data Science in R [Fall 2021]
COGS 101B: Learning, Memory, and Attention [Winter 2021]
COGS 109: Data Analysis and Modeling [Spring 2021]
COGS 153: Language Comprehension [Spring 2021]
COGS 14B: Introduction to Statistical Analysis [Fall 2020]
COGS 14B: Introduction to Statistical Analysis [Winter 2020]
COGS 14A: Introduction to Research Methods [Winter 2018]
COGS 100: Cyborgs Now and in the Future [Fall 2017]
COGS 101C: Language [Spring 2017]
COGS 3: Introduction to Computing [Winter 2017]

Mentorship

2023-2024: Yuhan Fu (Honors student), Kai Bian (Faculty Mentor Program), Alice Li (Faculty Mentor Program), Sydney Taylor (Faculty Mentor Program)
2022-2023: Owen Pi
2021-2022: Monica Van (Honors student), Dan Kaliblotzky
2020-2021: Alex Liebscher (Honors student)
2019-2020: Stefanie Reed

Mentee-led Presentations and Publications

Liebscher, A., Trott, S., & Bergen, B. (2020). Effects of Battle and Journey Metaphors on Charitable Donations for Cancer Patients. In *Proceedings of the Cognitive Science Society*.

ADDITIONAL TRAINING

2020: **Course Design Workshop:** Teaching and Learning Hub, UC San Diego

SERVICE AND PROFESSIONAL ACTIVITIES

Service to the Field:

Program Committee Member, *COLING 2025*

Department Service:

[UC San Diego] CSS Academic Support Lead [Fall, 2023 - *Present*]

[UC San Diego] CSS Hiring Committee [Fall, 2023]

[UC San Diego] CSS M.S. Admissions Committee [Winter, 2023; Winter, 2024]

[UC San Diego] Statistics Training Assistant [2019 – 2021]

[UC San Diego] Co-organizer of COGS 200 seminar [Spring, 2019]

Reviewer

2025: *National Science Foundation* ad-hoc panel member.

Journal Reviewer

2025: *Open Mind* (2x), Workshop on Cognitive and Computational Linguistics (3x), *Cognitive Science*, *Cognition*, *Cognitive Science* conference (1x), *Language Resources and Evaluation*, Conference on Language Modeling (4x), *PeerJ Computer Science*, *Philosophical Transactions of the Royal Society*, *Computational Linguistics*, *EMNLP* (4x), *Behavior Research Methods*, *Trends in Cognitive Science*, *Linguistics Vanguard*, *Mechanistic Interpretability Workshop* (2x).

2024: *Research Methods in Applied Linguistics*, *Empirical Methods in Natural Language Processing* (8x), *Computational Linguistics*, *Behavior Research Methods*, *COLING* (5x)

2023: *Natural Language Engineering*, *Proceedings of the National Academy of Sciences*

2022: *Cognitive Science*, *Mind and Language*, *Linguistics Vanguard*, *Behavior Research Methods*, *Frontiers in Communication*

OTHER PROFESSIONAL EXPERIENCE

Google

Research Intern (6/10/2019 – 9/10/2019)

- Proposed and implemented a system to analyze non-literal language use (e.g., metaphor, construal).
- Probed state-of-the-art language models (BERT) for evidence of construal.
- Wrote a paper for eventual publication in *ACL* (Trott et al, 2020).

Classy

Data Science Intern (6/20/2018 – 9/15/2019)

- Constructed a feature extraction pipeline (e.g., sentiment analysis, topic modeling) for charity campaigns.
- Conducted statistical analyses to predict measures of campaign success.

International Computer Science Institute

Research Assistant (6/2/2014 – 7/16/2016)

- Built an end-to-end system for Natural Language Understanding in a restricted domain.
- Created documentation and published papers about the NLU system in academic conferences
- (e.g., Trott et al., 2016).