

# Richard Landy Jones Futrell

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## Academic Employment

2022–present *Associate Professor*, UC Irvine  
2018–2022 *Assistant Professor*, UC Irvine  
Department of Language Science  
And by courtesy, Department of Computer Science  
2017–2018 *Postdoctoral Associate*, MIT  
Department of Brain and Cognitive Sciences

## Education

2017 PhD in Cognitive Science, Massachusetts Institute of Technology  
2012 MA in Linguistics, Stanford University  
2010–2011 Inter-University Program for Chinese Language Study, Tsinghua University, Beijing  
2010 BA in Linguistics, with Honors, with Distinction, Stanford University

## Non-Academic Employment

2013–2014 Intern, Siri Advanced Development Group. Apple, Inc. Cupertino, CA and then Cambridge, MA.  
2012 Computational Linguistics Intern. Wordnik, Inc. San Mateo, CA.

## Grants & fellowships

2023 University of California Online Course Development Award  
2023 Intel GPU Grant  
2022 William K. and Katherine W. Estes Fund Grant (with Lisa Pearl, Gregory Scontras, & Sameer Singh)  
2020 NSF CISE Research Initiation Initiative Grant (#1947307)  
2017 NVIDIA GPU Grant  
2015 NSF Doctoral Dissertation Research Improvement Grant (#1551543) (with Edward Gibson)  
2011 Fellowship at Summer Institute of the Linguistic Society of America

## Honors & awards

2024	Best Paper Award, Association for Computational Linguistics 2024
2023	Best Paper Award in Computational Modeling of Language, Cognitive Science Society
2021	Excellence in Digital Learning Award, UC Irvine Division of Teaching Excellence and Innovation
2019 & 2021	Outstanding Teaching Award, UCI School of Social Sciences
2016	Angus MacDonald Award for Excellence in Undergraduate Teaching, MIT Department of Brain & Cognitive Sciences
2010	Robert M. Golden Award for Outstanding Undergraduate Thesis, Stanford University
2010	Phi Beta Kappa
2006	National Merit Scholar

## Papers

### JOURNAL ARTICLES

2024	J36. <b>Richard Futrell</b> . An information-theoretic account of availability effects in language production. <i>Topics in Cognitive Science</i> 1–16.
2023	J35. <b>Richard Futrell</b> . Information-theoretic principles in incremental language production. <i>Proceedings of the National Academy of Sciences</i> 120(39): e2220593120.
2023	J34. William Dyer, Charles Torres, Gregory Scontras, and <b>Richard Futrell</b> . Evaluating a century of progress on the cognitive science of adjective ordering. <i>Transactions of the Association for Computational Linguistics</i> 11: 1185–1200.
2023	J33. Ethan Wilcox, <b>Richard Futrell</b> , and Roger P. Levy. Using computational models to test syntactic learnability. <i>Linguistic Inquiry</i> : 1–44.
2023	J32. Thomas Hikaru Clark, Clara Meister, Tiago Pimentel, Michael Hahn, Ryan Cotterell, <b>Richard Futrell</b> , and Roger Levy. A cross-linguistic pressure for Uniform Information Density in word order. <i>Transactions of the Association for Computational Linguistics</i> 11: 1048–1065.
2023	J31. Sihan Chen, <b>Richard Futrell</b> , and Kyle Mahowald. An information-theoretic approach to the typology of spatial demonstratives. <i>Cognition</i> 240:105505.
2022	J30. Michael Hahn, <b>Richard Futrell</b> , Roger P. Levy, and Edward Gibson. A resource-rational model of human processing of recursive linguistic structure. <i>Proceedings of the National Academy of Sciences</i> 119(43): e2122602119.
2022	J29. <b>Richard Futrell</b> and Michael Hahn. Information theory as a bridge between language function and language form. <i>Frontiers in Communication</i> 7:657725.
2022	J28. Himanshu Yadav, Samar Husain, and <b>Richard Futrell</b> . Assessing corpus evidence for formal and psycholinguistic constraints on nonprojectivity. <i>Computational Linguistics</i> 48(2): 375–401.
2022	J27. Yingtong Liu, Rachel Ryskin, <b>Richard Futrell</b> , and Edward Gibson. A verb-frame frequency account of constraints on long-distance dependencies in English. <i>Cognition</i> 222: 104902.
2021	J26. <b>Richard Futrell</b> . An information-theoretic account of semantic interference in word production. <i>Frontiers in Psychology</i> 12: 672408.
2021	J25. Himanshu Yadav, Samar Husain, and <b>Richard Futrell</b> . Do dependency lengths explain constraints on crossing dependencies? <i>Linguistics Vanguard</i> 7(s3): 20190070.
2021	J24. Michael Hahn, Dan Jurafsky, and <b>Richard Futrell</b> . Sensitivity as a complexity measure for sequence classification tasks. <i>Transactions of the Association for Computational Linguistics</i> .
2021	J23. Michael Hahn, Judith Degen, and <b>Richard Futrell</b> . Modeling word and morpheme order in natural language as an efficient tradeoff of memory and surprisal. <i>Psychological Review</i> 128(4): 726–756.
2021	J22. Hannah Rohde, <b>Richard Futrell</b> , and Christopher Lucas. What’s new? A comprehension bias in favor of informativity. <i>Cognition</i> 209: 104491.

- 2020 J21. **Richard Futrell**, Edward Gibson, Harry J. Tily, Idan Blank, Anastasia Vishnevetsky, Steven T. Piantadosi, and Evelina Fedorenko. The Natural Stories corpus: A reading-time corpus of English texts containing rare syntactic constructions. *Language Resources and Evaluation* 55(1):63–77.
- 2020 J20. **Richard Futrell**, Roger P. Levy, and Edward Gibson. Dependency locality as an explanatory principle for word order. *Language* 96(2): 371–413.
- 2020 J19. Francis Mollica, Matthew Siegelman, Evgeniia Diachek, Steven T. Piantadosi, Zachary Mineroff, **Richard Futrell**, Hope Kean, Peng Qian, and Evelina Fedorenko. Composition is the Core Driver of the Language-selective Network. *Neurobiology of Language* 1(1): 104–134.
- 2020 J18. **Richard Futrell**, Edward Gibson, and Roger P. Levy. Lossy-context surprisal: An information-theoretic model of memory effects in sentence processing. *Cognitive Science* 44: e12814.
- 2020 J17. Michael Hahn, Dan Jurafsky, and **Richard Futrell**. Universals of word order reflect optimization of grammars for efficient communication. *Proceedings of the National Academy of Sciences* 117(5): 2347–2353.
- 2020 J16. Veronica Boyce, **Richard Futrell**, and Roger P. Levy. Maze made easy: Better and easier measurement of incremental processing difficulty. *Journal of Memory and Language* 111: 104082.
- 2020 J15. Bevil Conway, Sivalogeswaran Ratnasingam, Julian Jara-Ettinger, **Richard Futrell**, and Edward Gibson. 2020. Communication efficiency of color naming across languages provides a new framework for the evolution of color terms. *Cognition* 195: 104086.
- 2019 J14. Michael Hahn and **Richard Futrell**. Estimating predictive rate–distortion curves using neural variational inference. *Entropy* 21(7): 640.
- 2019 J13. Edward Gibson, **Richard Futrell**, Steven Piantadosi, Isabelle Dautriche, Kyle Mahowald, Leon Bergen and Roger P. Levy. How Efficiency Shapes Human Language. *Trends in Cognitive Sciences*.
- 2018 J12. Rachel Ryskin, **Richard Futrell**, Swathi Kiran, and Edward Gibson. Comprehenders model the nature of noise in the environment. *Cognition* 181: 141–150.
- 2017 J11. **Richard Futrell**, Roger P. Levy, and Edward Gibson. Generalizing dependency distance: Comment on “Dependency distance: A new perspective on syntactic patterns in natural languages” by Haitao Liu et al. *Physics of Life Reviews* 21: 197–199.
- 2017 J10. Edward Gibson, **Richard Futrell**, Julian Jara-Ettinger, Kyle Mahowald, Leon Bergen, Sivalogeswaran Ratnasingam, Mitchell Gibson, Steven T. Piantadosi, and Bevil R. Conway. Color naming across languages reflects color use. *Proceedings of the National Academy of Sciences* 114(40): 10785–10790.
- 2017 J9. Edward Gibson, Caitlin Tan, **Richard Futrell**, Kyle Mahowald, Lars Konieczny, Barbara Hemforth, and Evelina Fedorenko. Don’t underestimate the benefits of being misunderstood. *Psychological Science*: 1–10.
- 2017 J8. **Richard Futrell**, Adam Albright, Peter Graff, and Timothy J. O’Donnell. A generative model of phonotactics. *Transactions of the Association for Computational Linguistics* 5: 73–86.
- 2017 J7. Kyle Mahowald, Ariel James, **Richard Futrell**, and Edward Gibson. Structural priming is most useful when the conclusions are statistically robust (Commentary). *Behavioral and Brain Sciences* 40.
- 2016 J6. Kyle Mahowald, Ariel James, **Richard Futrell**, and Edward Gibson. A meta-analysis of syntactic priming in language production. *Journal of Memory and Language* 91: 5–27.
- 2016 J5. **Richard Futrell**, Laura Stearns, Daniel L. Everett, Steven T. Piantadosi\*, and Edward Gibson\*. A corpus investigation of syntactic embedding in Pirahã. *PLOS ONE* 11(3): e0145289.
- 2016 J4. **Richard Futrell** and Edward Gibson. L2 processing as noisy channel language comprehension (Commentary). *Bilingualism: Language and Cognition*.
- 2015 J3. **Richard Futrell**, Kyle Mahowald, and Edward Gibson. Response to Liu, Xu, and Liang (2015) and Ferrer-i-Cancho and Gómez-Rodríguez (2015) on dependency length minimization. *Glottometrics* 33: 39–44.
- 2015 J2. **Richard Futrell**, Kyle Mahowald, and Edward Gibson. Large-scale evidence of dependency length minimization in 37 languages. *Proceedings of the National Academy of Sciences* 112(33): 10336–10341.

2015 J1. **Richard Futrell**, Tina Hickey, Aldrin Lee, Elena Luchkina, and Edward Gibson. Cross-linguistic gestures reflect typological universals: A subject-initial, verb-final bias in speakers of diverse languages. *Cognition* 136: 215–221.

REFEREED CONFERENCE AND WORKSHOP PROCEEDINGS

- 2024 C44. Julie Kallini, Isabel Papadimitriou, **Richard Futrell**, Kyle Mahowald, and Christopher Potts. Mission: Impossible Language Models. In *Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, pages 14691–14714. **Best Paper Award**
- 2024 C43. Yanting Li, Gregory Scontras, and **Richard Futrell**. On the communicative utility of code-switching. In *Proceedings of the Society for Computation in Linguistics 2024*, pages 343–349.
- 2024 C42. Jiaxuan Li and **Richard Futrell**. An information-theoretic model of shallow and deep language comprehension. In *Proceedings of the 46th Annual Conference of the Cognitive Science Society*, pages 5033–5041.
- 2024 C41. Weijie Xu and **Richard Futrell**. A hierarchical Bayesian model for syntactic priming. In *Proceedings of the 46th Annual Conference of the Cognitive Science Society*, pages 3693–3700.
- 2024 C40. Weijie Xu and **Richard Futrell**. Syntactic dependency length shaped by strategic memory allocation. In *Proceedings of SIGTYP Workshop*.
- 2023 C39. Charles Torres and **Richard Futrell**. Simpler neural networks prefer subregular languages. In *Findings of the Association for Computational Linguistics: EMNLP 2023*, pages 1651–1661, Singapore.
- 2023 C38. Weijie Xu, Jason S. Chon, Tianran Liu, and **Richard Futrell**. The Linearity of the Effect of Surprisal on Reading Times across Languages. In *Findings of the Association for Computational Linguistics: EMNLP 2023*, pages 15711–15721, Singapore.
- 2023 C37. Manikanta Loya, Divya Sinha, and **Richard Futrell**. Exploring the Sensitivity of LLMs’ Decision-Making Capabilities: Insights from Prompt Variations and Hyperparameters. In *Findings of the Association for Computational Linguistics: EMNLP 2023*, pages 3711–3716, Singapore.
- 2023 C36. Huteng Dai, Connor Mayer, and **Richard Futrell**. Rethinking representations: A log-bilinear model of phonotactics. In *Proceedings of the Society for Computation in Linguistics*, pages 259–268.
- 2023 C35. **Richard Futrell**. An information-theoretic account of availability effects in language production. In *Proceedings of the 45th Annual Meeting of the Cognitive Science Society*. **Best Paper Award for Computational Modeling of Language**
- 2023 C34. Jiaxuan Li and **Richard Futrell**. A decomposition of surprisal tracks the N400 and P600 brain potentials. In *Proceedings of the 45th Annual Meeting of the Cognitive Science Society*.
- 2023 C33. Shiva Upadhye and **Richard Futrell**. Typing time PWI: A scalable paradigm for studying lexical production. In *Proceedings of the 45th Annual Meeting of the Cognitive Science Society*.
- 2023 C32. Yanting Li, Gregory Scontras, and **Richard Futrell**. Chinese words shorten in more predictive contexts. In *Proceedings of the 45th Annual Meeting of the Cognitive Science Society*.
- 2022 C31. Michaela Socolof, Jacob Louis Hoover, **Richard Futrell**, Alessandro Sordoni, and Timothy J. O’Donnell. Measuring morphological fusion using Partial Information Decomposition. In *Proceedings of the 29th International Conference on Computational Linguistics*, 44–54. Gyeongju, Republic of Korea.
- 2022 C30. Isabel Papadimitriou, **Richard Futrell**, and Kyle Mahowald. When classifying grammatical role, BERT doesn’t care about word order... except when it matters. In *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (Volume 2: Short Papers)*, pp. 636–643.
- 2022 C29. **Richard Futrell**. Estimating word co-occurrence probabilities from pretrained static embedding using a log-bilinear model. In *Proceedings of the Workshop on Cognitive Modeling and Computational Linguistics*, pp. 54–60.
- 2022 C28. Neil Rathi, Michael Hahn, and **Richard Futrell**. Explaining patterns of fusion in morphological paradigms using the memory-surprisal tradeoff. In *Proceedings of the 44th Annual Meeting of the Cognitive Science Society*, pp. 184–191. **Winner of the Sayan Gul Award for Best Under-**

### graduate Paper

- 2022 C27. Zeinab Kachakeche, Gregory Scontras, and **Richard Futrell**. 2022. The efficiency of dropping vowels in Romanised Arabic script. In *Proceedings of the 44th Annual Meeting of the Cognitive Science Society*, pp. 1505–1511.
- 2021 C26. Neil Rathi, Michael Hahn\*, and Richard Futrell\*. An information-theoretic characterization of morphological fusion. In *Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing*.
- 2021 C25. Huteng Dai and **Richard Futrell**. Simple induction of (deterministic) probabilistic finite-state automata for phonotactics by stochastic gradient descent. In *SIGMORPHON*.
- 2021 C24. Zeinab Kachakeche, **Richard Futrell**, and Gregory Scontras. 2021. Word order affects the frequency of adjective use across languages. In *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society (CogSci)*.
- 2021 C23. William Dyer, **Richard Futrell**, Zoey Liu, and Gregory Scontras. Predicting crosslinguistic adjective order with information gain. In *Findings of EMNLP*.
- 2021 C22. Isabel Papadimitriou, Ethan Chi, **Richard Futrell**, and Kyle Mahowald. Deep subjecthood: Higher-order grammatical features in Multilingual BERT. In *Proceedings of the 16th Conference of the European Chapter of the Association for Computational Linguistics*, pages 2522-2532.
- 2020 C21. Kartik Sharma, **Richard Futrell\***, and Samar Husain\*. What determines the order of verbal dependents in Hindi? Effects of efficiency in comprehension and production. In *Proceedings of the Workshop on Cognitive Modeling and Computational Linguistics*, pages 1–10.
- 2020 C20. Ethan Wilcox, Peng Qian, **Richard Futrell**, Ryosuke Kohita, Roger P. Levy, and Miguel Ballesteros. Structural Supervision Improves Few-Shot Learning and Syntactic Generalization in Neural Language Models. In *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing*, pages 4640–4652.
- 2020 C19. **Richard Futrell**, William Dyer, and Gregory Scontras. What determines the order of adjectives in English? Comparing efficiency-based theories using dependency treebanks. In *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics*, Seattle, WA.
- 2019 C18. **Richard Futrell**. Information-theoretic locality properties of natural language. In *Proceedings of the First International Conference on Quantitative Syntax*, Paris.
- 2019 C17. **Richard Futrell**, Peng Qian, Edward Gibson, Evelina Fedorenko, and Idan Blank. Syntactic dependencies correspond to word pairs with high mutual information. In *Proceedings of the Fifth International Conference on Dependency Linguistics (DepLing 2019)*, Paris.
- 2019 C16. Himanshu Yadav, Samar Husain\*, and **Richard Futrell\***. Are formal restrictions on crossing dependencies epiphenomenal? In *Proceedings of the 18th International Workshop on Treebanks and Linguistic Theory*, Paris.
- 2019 C15. Ethan Wilcox, Roger P. Levy, and **Richard Futrell**. Hierarchical representation in neural language models: Suppression and recovery of expectations. In *Proceedings of BlackboxNLP 2019*, Florence.
- 2019 C14. Ethan Wilcox, Roger P. Levy, and **Richard Futrell**. What syntactic structures block dependencies in RNN language models? In *Proceedings of the 41st Annual Meeting of the Cognitive Science Society (CogSci)*, Montreal.
- 2019 C13. Yingtong Liu, Rachel Ryskin, **Richard Futrell**, and Edward Gibson. Verb frequency explains the unacceptability of factive and manner-of-speaking islands in English. In *Proceedings of the 41st Annual Meeting of the Cognitive Science Society (CogSci)*, Montreal.
- 2019 C12. **Richard Futrell**, Ethan Wilcox, Takashi Morita, Peng Qian, Miguel Ballesteros and Roger P. Levy. Neural language models as psycholinguistic subjects: Representations of syntactic state. In *Proceedings of the 18th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*, Minneapolis.
- 2019 C11. Ethan Wilcox, Peng Qian, **Richard Futrell**, Miguel Ballesteros and Roger P. Levy. Structural supervision improves learning of non-local grammatical dependencies. In *Proceedings of the 18th Annual Conference of the North American Chapter of the Association for Computational Linguistics:*

*Human Language Technologies*, Minneapolis.

- 2019 C10. **Richard Futrell** and Roger P. Levy. Do RNNs learn human-like abstract word order preferences? In *Proceedings of the Society for Computation in Linguistics*, New York. Pages 50–59.
- 2018 C9. Ethan Wilcox, Roger P. Levy, Takashi Morita, and **Richard Futrell**. What do RNN language models learn about filler–gap dependencies? In *Proceedings of BlackboxNLP 2018*, Brussels. Pages 211–221.
- 2018 C8. Michael Hahn, Judith Degen, Noah Goodman, Dan Jurafsky, and **Richard Futrell**. An information-theoretic explanation of adjective ordering preferences. In *Proceedings of the 40th Annual Meeting of the Cognitive Science Society (CogSci)*.
- 2018 C7. **Richard Futrell**, Edward Gibson, Hal Tily, Idan Blank, Anastasia Vishnevetsky, Steven T. Piantadosi, and Evelina Fedorenko. The Natural Stories Corpus. In *Proceedings of the Language Resource Evaluation Conference (LREC) 2018*, Miyazaki, Japan.
- 2017 C6. Melody Dye, Petar Milin, **Richard Futrell**, and Michael Ramscar. Cute little puppies and nice cold beers: An information theoretic analysis of prenominal adjectives. In *Proceedings of the 39th Annual Conference of the Cognitive Science Society*, London, UK. **Winner of the Marr Prize for Best Student Paper**.
- 2017 C5. **Richard Futrell** and Roger P. Levy. Noisy-context surprisal as a human sentence processing cost model. In *Proceedings of the 15th Conference of the European Chapter of the Association for Computational Linguistics*, Valencia, Spain. Pages 688–698.
- 2016 C4. Cory Shain, Marten van Schijndel, **Richard Futrell**, Edward Gibson and William Schuler. Memory access during incremental sentence processing causes reading time latency. In *Proceedings of COLING Workshop “Computational Linguistics for Linguistic Complexity”*.
- 2015 C3. **Richard Futrell** and Edward Gibson. Experiments with generative models for dependency tree linearization. In *Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing*, Lisbon, Portugal. Pages 1978–1983.
- 2015 C2. **Richard Futrell**, Kyle Mahowald, and Edward Gibson. Quantifying word order freedom in dependency corpora. In *Proceedings of the Third International Conference on Dependency Linguistics (DepLing 2015)*, Uppsala, Sweden. Pages 91–100.
- 2014 C1. Michael Ramscar, Asha Halima Smith, Melody Dye, **Richard Futrell**, Peter Hendrix, Harald Baayen, and Rebecca Starr. The ‘universal’ structure of name grammars and the impact of social engineering on the evolution of natural information systems. *Proceedings of the 35th Meeting of the Cognitive Science Society*, Berlin, Germany.

#### INVITED BOOK CHAPTERS

- to appear IC1. **Richard Futrell**. Processing efficiency. In Adam Ledgeway, Alexandra Simonenko, Anne Breitbarth, Edith Aldridge, Joseph Salmons, Katalin É. Kiss (eds.) *The Wiley Blackwell Companion to Diachronic Linguistics*. John Wiley & Sons.

#### INVITED BOOK REVIEWS

- 2023 R1. **Richard Futrell**. Book Review: *Validity, Reliability, and Significance: Empirical Methods for NLP and Data Science* by Stefan Riezler and Michael Haggmann. *Computational Linguistics* 49(1): 249–251.

#### IN EDITED VOLUMES

- 2017 V2. Melody Dye, Petar Milin, **Richard Futrell**, and Michael Ramscar. A functional theory of gender paradigms. In F. Kiefer, J. P. Blevins, & H. Bartos (eds.) *Morphological Paradigms and Functions*. Brill: Leiden.
- 2015 V1. Stephanie Shih, Jason Grafmiller, **Richard Futrell**, & Joan Bresnan. Rhythm’s role in the

genitive construction choice in spoken English. In Vogel, R. and R. van de Vijver (eds.) *Rhythm in Phonetics, Grammar, and Cognition*. Berlin, Germany: De Gruyter Mouton. 208–234.

#### MANUSCRIPTS

- 2018 A3. **Richard Futrell**, Ethan Wilcox, Takashi Morita, and Roger P. Levy. RNNs as psycholinguistic subjects: Syntactic state and grammatical dependency. *arXiv abs/1809.01329*.
- 2017 A2. **Richard Futrell**, Roger P. Levy, and Matthew Dryer. A statistical comparison of some theories of NP word order. *arXiv abs/1709.02783*.
- 2012 A1. **Richard Futrell** & Samuel Bowman. Measuring amok. Term paper for Stanford CS 224U (Natural Language Understanding).

## Patents

- 2014 **Richard Futrell** and Thomas Gruber. Exemplar-Based Natural Language Processing. US Patent 9,430,463. Assigned to Apple, Inc.

#### OTHER PUBLICATIONS

- 2024 [What is language, and how do human constraints shape it?](#) *Journal of Creativity and Inspiration* 2(3).
- 2022 [When was talking invented? A language scientist explains how this unique feature of human beings may have evolved.](#) *The Conversation*.
- 2010 Translation of *The Key*, by Dezső Kosztolányi, from Hungarian. *Inventory* 1.

#### THESES

- 2017 *Memory and Locality in Natural Language*. Massachusetts Institute of Technology: PhD Thesis.
- 2012 *Processing Effects of the Expectation of Informativity*. Stanford University: MA Thesis.
- 2010 *German Grammatical Gender as a Nominal Protection Device*. Stanford University: Senior Thesis. (Robert M. Golden Award)

## Conference Presentations

- 2024 (P60). **Richard Futrell**. Natural-language-like systematicity from a constraint on excess entropy. Society for Computation in Linguistics, Irvine, CA.
- 2024 (P59). Nathaniel Imel, Richard Futrell, Michael Franke, and Noga Zaslavsky. Noisy Population Dynamics Lead to Efficiently Compressed Vocabularies. Podium presentation at EVOLANG 2024, Madison, WI.
- 2024 (P58). **Richard Futrell**. Natural-language-like systematicity from a constraint on excess entropy. Podium presentation at EVOLANG 2024, Madison, WI.
- 2024 (P57) Yanting Li, Gregory Scontras, and **Richard Futrell**. The meaning behind a code-switch. Poster presentation at Human Sentence Processing 2024, Ann Arbor, MI.
- 2024 (P56) Weijie Xu and **Richard Futrell**. A hierarchical Bayesian model for syntactic priming. Poster presentation at Human Sentence Processing 2024, Ann Arbor, MI.
- 2024 (P56) Weijie Xu and **Richard Futrell**. Dependency length shaped by strategic memory allocation: A corpus study in 11 languages. Poster presentation at Human Sentence Processing 2024, Ann Arbor, MI.
- 2023 (P55) Nathaniel Imel, **Richard Futrell**, Michael Franke, and Noga Zaslavsky. Noisy Population

- Dynamics Lead to Efficiently Compressed Semantic Systems. NeurIPS 2023 Workshop on Information-Theoretic Principles in Cognitive Systems, New Orleans, LA.
- 2023 (P54) **Richard Futrell**. Natural Language Systematicity from a Constraint on Excess Entropy. NeurIPS 2023 Workshop on Information-Theoretic Principles in Cognitive Systems, New Orleans, LA.
- 2023 (P53) **Richard Futrell**. An information-theoretic account of accessibility effects in incremental language production. Society for Computation in Linguistics, Amherst, MA.
- 2023 (P52) Charles Torres and **Richard Futrell**. L0-regularization induces subregular biases in LSTMs. Poster presented at Society for Computation in Linguistics, Amherst, MA.
- 2023 (P51) Yanting Li, Gregory Scontras, and **Richard Futrell**. Evidence for efficiency in Chinese abbreviations. Poster presented at Society for Computation in Linguistics, Amherst, MA.
- 2023 (P50) Jiaxuan Li, Shiva Upadhye, and **Richard Futrell**. Bridging production and comprehension: A computational model of error generation and correction. Poster presented at Society for Computation in Linguistics, Amherst, MA.
- 2023 (P49) Jiaxuan Li, Shiva Upadhye, and **Richard Futrell**. Bridging production and comprehension: A computational model of error generation and correction. 36th Annual Conference on Human Sentence Processing.
- 2023 (P48) Himanshu Yadav, Stefan Frank, **Richard Futrell**, Samar Husain. Nested versus crossed dependencies: Reexamining German and Dutch verb clusters. 36th Annual Conference on Human Sentence Processing.
- 2023 (P47) Thomas Hikaru Clark, Clara Meister, Tiago Pimentel, Michael Hahn, Ryan Cotterell, **Richard Futrell**, and Roger Levy. A Cross-Linguistic Pressure for Uniform Information Density in Word Order. 36th Annual Conference on Human Sentence Processing.
- 2023 (P46) Charles Torres and **Richard Futrell**. Formal language and computational complexity: seeking explanations for subregular natural language patterns. 36th Annual Conference on Human Sentence Processing.
- 2022 (P45) Jiaxuan Li and **Richard Futrell**. A unified information-theoretic model of EEG signatures of human language processing. NeurIPS 2022 Workshop on Information-Theoretic Principles in Cognitive Systems.
- 2022 (P44) Shiva Upadhye and **Richard Futrell**. Information-theoretic analysis of disfluencies in speech. NeurIPS 2022 Workshop on Information-Theoretic Principles in Cognitive Systems.
- 2022 (P43) Himanshu Yadav, Stefan Frank, **Richard Futrell**, and Samar Husain. Understanding nested versus crossed dependencies: The case of German and Dutch verb clusters. Architectures and Mechanisms for Language Processing 28.
- 2022 (P42) Shiva Upadhye and **Richard Futrell**. The typing modality preserves semantic interference effects in Picture Word Interference. Architectures and Mechanisms for Language Processing 28.
- 2022 (P41) Weijie Xu and **Richard Futrell**. Informativity enhances memory precision in the agreement attraction effect. Architectures and Mechanisms for Language Processing 28.
- 2022 (P40) Jiaxuan Li and **Richard Futrell**. A decomposition of surprisal predicts N400 and P600 in language processing. Architectures and Mechanisms for Language Processing 28.
- 2022 (P39) Weijie Xu and **Richard Futrell**. Informativity affects memory precision in the agreement attraction effect. 35th Annual Conference on Human Sentence Processing.
- 2022 (P38) Jiaxuan Li and **Richard Futrell**. Pre-trained language models can track some ERP components in language processing. 35th Annual Conference on Human Sentence Processing.
- 2022 (P37) Sihan Chen, **Richard Futrell**, and Kyle Mahowald. An information-theoretic approach to the typology of spatial demonstratives. 35th Annual Conference on Human Sentence Processing.
- 2022 (P36) Isabel Papadimitriou, **Richard Futrell**, and Kyle Mahowald. When classifying arguments, BERT doesn't care about word order...except when it matters. Society for Computation in Linguistics.
- 2022 (P35) Niels Dickson, Lisa Pearl, and **Richard Futrell**. Learning constraints on *wh*-dependencies by learning how to efficiently represent *wh*-dependencies: A developmental modeling investigation



with Fragment Grammars. Society for Computation in Linguistics.

- 2021 (P34) Neil Rathi, Michael Hahn, and **Richard Futrell**. Information-theoretic characterization of morphological fusion. Paper presented at the 3rd Workshop on Research in Computational Typology and Multilingual NLP. **Best paper award**
- 2021 (P33) Kyle Mahowald, Isabel Papadimitriou, Dan Jurafsky, and **Richard Futrell**. Accessibility-based constraints on morphosyntax in corpora of 54 languages. Poster presented at the 34th Annual CUNY Conference on Sentence Processing.
- 2021 (P32) Isabel Papadimitriou, Ethan A. Chi, **Richard Futrell**, and Kyle Mahowald. Multilingual BERT, ergativity, and grammatical subjecthood. Society for Computation in Linguistics, 2021.
- 2021 (P31) Michael Hahn and **Richard Futrell**. Crosslinguistic word orders enable an efficient tradeoff of memory and surprisal. Society for Computation in Linguistics, 2021.
- 2020 (P30) Isabel Papadimitriou, Ethan A. Chi, **Richard Futrell**, and Kyle Mahowald. Multilingual BERT learns abstract case representations. ACL Special Interest Group on Typology (SIGTYP), 2020.
- 2020 (P29) Michael Hahn, **Richard Futrell**, and Edward Gibson. Lexical Effects in Structural Forgetting: Evidence for Experience-Based Accounts and a Neural Network Model. Talk presented at the 33rd Annual CUNY Conference on Sentence Processing. Amherst, MA.
- 2020 (P28) Yingtong Liu, Rachel Ryskin, **Richard Futrell** and Edward Gibson. Structural Frequency Effects in Comprehenders' Noisy-Channel Inferences. Poster presented at the 33rd Annual CUNY Conference on Sentence Processing. Amherst, MA.
- 2020 (P27) Huteng Dai and **Richard Futrell**. Work in Progress: Information-theoretic characterization of the Sub-regular Hierarchy. Society for Computation in Linguistics, 2020.
- 2019 (P26) Michael Hahn, Judith Degen, and **Richard Futrell**. Crosslinguistic word orders enable an efficient tradeoff of memory and surprisal. Talk presented at the 32nd Annual CUNY Conference on Sentence Processing. Boulder, CO.
- 2019 (P25) Michael Hahn and **Richard Futrell**. Testing processing explanations of word order universals. Talk presented at the 32nd Annual CUNY Conference on Sentence Processing. Boulder, CO.
- 2019 (P24) **Richard Futrell**, Ethan Wilcox, Takashi Morita, Peng Qian, Miguel Ballesteros, and Roger P. Levy. Large neural network language models learn representations of incremental parse states. Poster presented at the 32nd Annual CUNY Conference on Sentence Processing. Boulder, CO.
- 2019 (P23) **Richard Futrell**, Evgeniia Diachek, Nafisa Syed, Edward Gibson, and Evelina Fedorenko. Formal marking is redundant with lexico-semantic cues to meaning in transitive clauses. Poster presented at the 32nd Annual CUNY Conference on Sentence Processing. Boulder, CO.
- 2019 (P22) Yingtong Liu, Rachel Ryskin, **Richard Futrell**, and Edward Gibson. Factive and manner-of-speaking islands are an artifact of nonlinearity in the acceptability judgment task. Poster presented at the 32nd Annual CUNY Conference on Sentence Processing. Boulder, CO.
- 2019 (P21) Ethan Wilcox, Peng Qian, **Richard Futrell**, Miguel Ballesteros, and Roger P. Levy. Syntactic Structure aids Learning of Grammatical Dependencies in Neural Networks. Poster presented at the 32nd Annual CUNY Conference on Sentence Processing. Boulder, CO.
- 2019 (P20) Veronica Boyce, **Richard Futrell**, and Roger P. Levy. Maze made easy: Better and easier measurement of incremental processing difficulty. Poster presented at the 32nd Annual CUNY Conference on Sentence Processing. Boulder, CO.
- 2018 (P19) Michael Hahn and **Richard Futrell**. Testing processing explanations of word order universals. Talk presented at California Meeting on Psycholinguistics (CAMP) 2018. Los Angeles, CA.
- 2018 (P18) Michael Hahn, **Richard Futrell**, Judith Degen, Dan Jurafsky, and Noah Goodman. Mutual information impacts adjective ordering across languages. Poster presented at the 31st CUNY Conference on Human Sentence Processing. Davis, CA.
- 2018 (P17) **Richard Futrell**, Edward Gibson, and Roger P. Levy. Generalizing dependency length minimization: Crosslinguistic corpus evidence for information locality. Poster presented at the 31st CUNY Conference on Human Sentence Processing. Davis, CA.
- 2018 (P16) Cory Shain, **Richard Futrell**, Marten van Schijndel, Edward Gibson, William Schuler, and Evelina Fedorenko. Evidence of semantic processing difficulty in naturalistic reading. Poster pre-

- 2018 sented at the 31st CUNY Conference on Human Sentence Processing. Davis, CA.  
 (P15) Michael Hahn, **Richard Futrell**, and Judith Degen. Exploring adjective ordering preferences via artificial language learning. Poster presented at the 31st CUNY Conference on Human Sentence Processing. Davis, CA.
- 2017 (P14) Cory Shain, Marten van Schijndel, **Richard Futrell**, Edward Gibson, and William Schuler. Memory access during incremental sentence processing causes reading time latency. Presented at the 30th Annual CUNY Conference on Human Sentence Processing. Cambridge, MA.
- 2017 (P13) **Richard Futrell** and Roger P. Levy. Noisy-context surprisal as a human sentence processing cost model. Presented at the 30th Annual CUNY Conference on Human Sentence Processing. Cambridge, MA.
- 2016 (P12) Kyle Mahowald, Ariel James, **Richard Futrell**, and Edward Gibson. A meta-analysis of syntactic priming. Presented at the 29th Annual CUNY Conference on Human Sentence Processing. Gainesville, FL.
- 2016 (P11) **Richard Futrell**, Adam Albright, Peter Graff, and Timothy J. O'Donnell. Subsegmental structure facilitates learning of phonotactic distributions. Presented at the 2016 Annual Meeting of the Linguistic Society of America. Washington, DC.
- 2014 (P10) **Richard Futrell**, Kyle Mahowald, and Edward Gibson. CLIQS: Crosslinguistic Investigations in Quantitative Syntax. Poster presented at AMLaP 2014.
- 2014 (P9) **Richard Futrell**, Tina Hickey, Aldrin Lee, Elena Luchkina, & Edward Gibson. A Cross-Linguistic Verb-Final Bias in Gesturing Paradigms. Presented at the 27th Annual CUNY Conference on Human Sentence Processing. Columbus, OH.
- 2014 (P8) **Richard Futrell**, Kyle Mahowald, Steven Piantadosi, & Edward Gibson. Efficient Communication Forward and Backward. Poster presented at the 27th Annual CUNY Conference on Human Sentence Processing. Columbus, OH.
- 2012 (P7) **Richard Futrell** & Hannah Rohde. Expecting the unexpected: How discourse expectations can reverse predictability effects in reading time. Poster presented at the 25th Annual CUNY Conference on Human Sentence Processing. CUNY Graduate Center.
- 2012 (P6) **Richard Futrell** & Michael Ramscar. German grammatical gender contributes to communicative efficiency. Presented at the 86th Annual Meeting of the Linguistic Society of America. Portland, OR.
- 2011 (P5) **Richard Futrell** & Michael Ramscar. German grammatical gender manages nominal entropy. Poster presented at the Workshop on Information-Theoretic Approaches to Linguistics. University of Colorado, Boulder.
- 2011 (P4) Michael Ramscar & **Richard Futrell**. The predictive function of prenominal adjectives. Poster presented at the Workshop on Information-Theoretic Approaches to Linguistics. University of Colorado, Boulder.
- 2009 (P3) Stephanie Shih, Jason Grafmiller, **Richard Futrell**, & Joan Bresnan. Rhythm's role in the genitive construction choice in spoken English. Presented at 31st Annual Meeting of the Deutsche Gesellschaft für Sprachwissenschaft: Rhythm beyond the word. Osnabruck, Germany.
- 2009 (P2) Laura Staum Casasanto, **Richard Futrell**, & Ivan A. Sag. Parallels between production and comprehension of multiple that: What's good for the goose.... Poster presented at the 22nd Annual CUNY Conference on Sentence Processing. UC Davis.
- 2008 (P1) Laura Staum Casasanto, **Richard Futrell**, & Ivan A. Sag. Extra complementizers increase syntactic predictability. Poster presented at the 14th Annual Conference on Architectures and Mechanisms for Language Processing. Cambridge, UK.

## Conference Tutorials

- 2022 Information theory in linguistics. Tutorial presented at COLING 2022 with Ryan Cotterell, Kyle Mahowald, Tiago Pimentel, Aryaman Arora, Clara Meister, and Lucas Torroba Hennigen.

2019 Language processing and learning in people and machines. Tutorial presented at the North American Chapter of the Association for Computational Linguistics (NAACL) with Aida Nematzadeh and Roger P. Levy.

## Invited Presentations

2024 Systematic structure from a bottleneck on sequential information processing. MIT Language Lab, 6/6/2024.

2024 The place of language models in the information-theoretic science of language. Cognitive Science Institute Summer School, L'Université du Québec à Montréal, 6/3/2024.

2024 Linguistic systematicity from incremental prediction. Center for Theoretical Behavioral Sciences, UC Irvine, 4/20/2024.

2024 Information bottlenecks in human language processing. Invited Talk, workshop "Democratization of Soft Robotics through Embodied Intelligence" at IEEE RoboSoft 2024, San Diego, 4/14/2024.

2023 Constraints on information processing in language comprehension and production. IFLC (Interactions of Formal and Computational Linguistics) Seminar, GdR LIFT. 12/13/2023.

2023 Limits on Information Processing in Language Comprehension and Production. Keynote presentation at Architectures and Mechanisms for Language Processing (AMLaP) Asia, Hong Kong, 12/3/2023.

2023 An information-theoretic model of incremental language production. Indian Institute of Technology, Delhi, Dept. of Linguistics, 9/13/2023.

2023 Informational Bottlenecks in Language Comprehension and Production. University of Oregon Linguistics Colloquium, 5/30/2023.

2023 Rethinking Language Production using Information Theory. Center for Theoretical Behavioral Sciences, UC Irvine, 4/20/2023.

2023 Information and Prediction in Language Comprehension and Production. Stanford Psychology Colloquium, 2/1/2023.

2022 An information-theoretic perspective on dependency grammar. Keynote presentation at International Conference on Dependency Linguistics, 3/22/2022.

2021 Investigating information-theoretic influences on the order of words, phrases, and morphemes. SIGTYP Lecture Series, 7/23/2021.

2021 Information-theoretic models of natural language. McGill Quantitative Language Lab (McQLL), 2/25/2021.

2020 Information-theoretic models of natural language. 4th NeurIPS Workshop on Emergent Communication, Remote, 12/12/2020.

2020 Information processing, communication, and word order. Workshop on Cognitive Modeling and Computational Linguistics, Remote, 11/19/2020.

2020 Efficiency-based models of natural language: Predicting word order universals using information theory. Institute of Cognitive and Brain Sciences Colloquium, UC Berkeley, 9/18/2020.

2020 An information-theoretic model of word production. MIT Language Lab Talk, 9/15/2020.

2020 Information-theoretic models of natural language. Institute for Mathematical Behavioral Sciences Colloquium, UC Irvine, 2/28/2020.

2019 Language as a code: Modeling human language using information theory. Complexity Sciences Center, UC Davis, 7/10/2019.

2019 Memory and Locality in Natural Language. Psycholinguistics Lab, Indian Institute of Technology, Delhi, 5/29/2019.

2019 Representation of syntactic structures in neural-network language models. Linguistics Department Colloquium, UC Davis, 5/6/2019.

2019 Language as a code: Modeling human language using information theory. Computational Intelli-

- gence, Learning, Vision, and Robotics (CILVR) Lab, New York University, 4/29/2019.
- 2019 Memory, Locality, and Word Order Universals. Center for Language Research, UC San Diego, 2/19/2019.
- 2019 Natural language as a code: Modeling human language using information theory. Institute for Mathematical Behavioral Sciences Colloquium, UC Irvine, 2/14/2019.
- 2018 Natural language as a code: Modeling human language using information theory. AI and Machine Learning Seminar, UC Irvine, 11/26/2018.
- 2018 Information locality: An information-theoretic principle of natural language word order. Conference on Quantitative Approaches to Language Science, UC Irvine, 5/4/2018.
- 2018 How Natural Language Wants to be Understood: Language processing in humans and machines. Siri Data Science Group, Apple, Inc., 4/12/2018.
- 2018 Information Locality: An information-theoretic principle of natural language word order. Language and Cognition Lab, UC Berkeley, 4/6/2018.
- 2018 Memory and locality in natural language. Cognition and Language Workshop, Stanford University, 4/5/2018.
- 2018 Memory and locality in natural language. Harvard Language & Cognition, Language Development Lab, 2/20/2018.
- 2018 Memory and locality in natural language. Language Learning Laboratory, Boston College, 1/26/2018.
- 2017 Memory and locality in natural language. LingLangLunch, Brown University, 9/27/2017.
- 2017 A generative model of phonotactics. Workshop on Simplicity in Grammar Learning, MIT, 9/23/2017.
- 2017 Memory and locality in natural language. Linguistics Colloquium, University of Arizona, 9/15/2017.
- 2017 Information locality in natural language. Workshop on the Relationship between Executive Functions and Language Processing, MIT, 5/25/2017.
- 2017 Memory and locality in natural language. Language Science Colloquium, UC Irvine, 2/6/2017.
- 2017 Memory and locality in natural language. Computation & Language Discussion Group Meeting, MIT, 2/2/2017.
- 2016 Memory and locality in natural language. CogLunch, MIT, 11/8/2016.
- 2016 Crosslinguistic investigations in quantitative syntax: Dependency length minimization and beyond. Edinburgh Center for Language Evolution Colloquium, 5/17/2016.
- 2015 A generative model of phonotactics. Spoken Language Systems Seminar, MIT, 4/7/2015.
- 2014 Crosslinguistic investigations in quantitative syntax. Talk at Stanford University Department of Linguistics, 8/12/2014.
- 2014 A tier-based probabilistic phonotactics model. Phonology Circle, MIT, 5/5/2014.
- 2014 Efficiency and robustness in word order universals. CogLunch, MIT, 4/1/2014.

## Departmental Service

- 2024 Member, Language Science Undergraduate Curriculum Committee, UC Irvine.
- 2021–present Director of Graduate Studies, Department of Language Science, UC Irvine
- 2021–present Head of Graduate Admissions Committee, Department of Language Science, UC Irvine
- 2020–2021 Member of Faculty Search Committee, Department of Language Science, UC Irvine
- 2020 Acting Department Chair, Department of Language Science, UC Irvine (two weeks)
- 2019–2021 Colloquium Director, Department of Language Science, UC Irvine
- 2018–2019 Chair of UC Postdoctoral Fellows Recruitment Committee, Department of Language Science, UC Irvine
- 2018–2022 Manager of Department Wiki

## Workshop and Conference Organization

2023–present

2022 Chair of Local Organizing Committee, Society for Computation in Linguistics 2024  
 Organizer, UCI Summer School on Computational Cognitive Modeling for Language Science  
 2020-2021 Chair of Local Organizing Committee, 2021 California Psycholinguistics Meetup (CAMP)  
 2016-2018 Founder & Organizer, MIT Language & Computation Discussion Group [WEBSITE]  
 2016-2017 Member of Organizing Committee, 2017 CUNY Conference on Human Sentence Processing [WEBSITE]

## Reviewing and Editing

2024 ARR Action Editor for ACL.  
 2023-present Action Editor for *Open Mind*.  
 2022 Senior Area Chair in Linguistic Theories, Cognitive Modeling and Psycholinguistics, EMNLP.  
 2021-2022 Guest Editor of Special Issue on “Information-Theoretic Approaches to Explaining Linguistic Structure” in journal *Entropy*, with Kathleen Hall and Uriel Cohen Priva.  
 2021 Area Chair in Psycholinguistics & Linguistic Theories, NAACL.  
 2019 Area Chair in Computational Modeling & Psycholinguistics, EMNLP.  
 2016-present Reviewer for Proceedings of the National Academy of Sciences (PNAS); Transactions of the Association for Computational Linguistics (TACL); Cognitive Science; Cognitive Science Conference; PLOS ONE; Journal of Experimental Psychology: General; Society for Computation in Linguistics (SCiL); Confernece on Natural Language Learning (CoNLL); Australian Journal of Linguistics; Neural Networks; Entropy; Cognition; North American Chapter of the Association for Computational Linguistics–Human Language Technologies (NAACL-HLT); Empirical Methods in Natural Language Processing (EMNLP); Human Sentence Processing Conference; International Conference on Computational Linguistics (COLING); Glossa; Lingua; Language, Cognition and Neuroscience (LCN); Journal of the Royal Society Interface; Computational Linguistics; Journal of Germanic Linguistics; Star SEM; Workshop on Quantitative Syntax (Quasy); Workshop on Typology in NLP (TypNLP); Association for Computational Linguistics (ACL); European Chapter of the Association for Computational Linguistics (EACL); Cognitive Modeling and Computational Linguistics (CMCL); ACL Special Interest Group on Typology (SIGTYP); ACL Special Interest Group on Morphology and Phonology (SIGMORPHON); Journal of Memory & Language (JML); Cognition; Psychonomic Bulletin & Review; Psychological Review; Workshop on BlackboxNLP; Glossa Psycholinguistics; Journal of Linguistics; Frontiers in Psychology; Journal of Psycholinguistic Research; Journal of Experimental Psychology: Learning, Memory, and Cognition; Folia Linguistica

## Professional development

2021 Completion of UCI Office of Inclusive Excellence (OIE) Certificate Program  
 2019 Participant, National Center for Faculty Development & Diversity Faculty Success Program

## Teaching experience

2024 Instructor, [Probabilistic Computational Models for Language Science](#) (UCI Lsci 259).  
 2023 Instructor, [Advanced Language Science Skills I](#) (UCI Lsci 202D, 202E, 202F).  
 2023 Instructor, [Information-theoretic approaches to language](#) (UCI Lsci 109/209)  
 2023 Instructor, [Introduction to Linguistics](#) (UCI Lsci 3).  
 2022 Instructor, [Information-Theoretic Models of Language Processing](#), UCI Summer School on Computational Cognitive Modeling for Language Science.

2022 Instructor, [Information Theory and Language](#) (UCI Lsci 209). Instructor, [Introduction to Linguistics](#) (UCI Lsci 3).

2021–2022 Instructor, [Foundational Readings in Language Science](#) (UCI Lsci 201ABC).

2021 Instructor, [Probabilistic Computational Modeling for Language Science](#) (UCI Lsci 259)

2021 Instructor, [Information-theoretic Linguistics](#) (European Summer School in Logic, Language and Information) (with Ryan Cotterell, Clara Meister, Tiago Pimentel, Lucas Torroba Hennigen, and Adina Williams).

2021 Instructor, [Introduction to Linguistics](#) (UCI Lsci 3).

2021 Instructor, [Linguistic Data Science](#) (UCI Lsci 109).

2020 Instructor, [Computational Skills for Language Science Research](#) (UCI Lsci 202A)

2020 Instructor, [Language Processing](#) (UCI Lsci 159).

2020 Instructor, [Linguistic Data Science](#) (UCI Lsci 109).

2019 Instructor, [Language Processing](#) (UCI Lsci 159).

2019 Instructor, [Introduction to Linguistics](#) (UCI Lsci 3).

2019 Instructor, [Information-theoretic Approaches to Linguistics](#) (UC Davis Linguistic Institute, 6/22/2019 – 7/21/2019)

2019 Instructor, [Linguistic Data Science](#) (UCI Ling 109).

2019 Instructor, [Introduction to Linguistics](#) (UCI Ling 3).

2018 Instructor, [Language Processing](#) (UCI Ling 159).

2018 Teaching Assistant, [Computational Psycholinguistics](#) (MIT 9.19). Main instructor: Roger P. Levy.

2016 Teaching Assistant, [Cognitive Science](#) (MIT 9.012). Main instructors: Pawan Sinha, Josh Tenenbaum, and Edward Gibson.

2015 Teaching Assistant, [Lab in Psycholinguistics](#) (MIT 9.59). Main instructor: Edward Gibson.

2014 Teaching Assistant, [Cognitive Processes](#) (MIT 9.65). Main instructor: Molly Potter.

## Research Advising and Mentorship

### PHD STUDENT ADVISEES AT UC IRVINE

2023 Nathaniel Imel

2022–present Yanting Li (with Gregory Scontras)

2021–present Jiaxuan Li

2021–present Shiva Upadhye

2021–present Weijie Xu

2020–present Charles J. Torres

2020–present Niels Dickson (with Lisa Pearl)

2020–present Zeinab Kachakeche (with Gregory Scontras)

### OTHER PHD STUDENT MENTORSHIP

2023–present Julie Kallini (Stanford)

2021–present Sihan Chen (MIT)

2019–present Huteng Dai (Rutgers University)

2020–present Isabel Papadimitriou (Stanford)

2018–present Himanshu Yadav (University of Potsdam)

2018–2023 Ethan Wilcox (MIT)

2018–2022 Michael Hahn (Stanford)

2018–2020 Veronica Boyce (MIT)

#### MASTER'S STUDENTS

2023	Manikanta Loya (UC Irvine Computer Science)
2023	Divya Sinha (UC Irvine Computer Science)
2020–2021	Zachary Rosen (UC Irvine Language Science)
2019	Peter Schaedler (UC Irvine Computer Science)
2018–2019	Brandon Cabrera Lopez (UC Irvine Computer Science)

#### UNDERGRADUATES

2022–2023	Michael Mersinias (UT Austin)
2022–2023	Ishan Shah (UT Austin)
2021–2022	Neel Gore (UC Irvine)
2021–2022	Brian Chu (UC Irvine)
2020–2022	Kartik Sharma (IIT Delhi)
2020–2021	Charles Rodriguez de Vera (UC Irvine)
2020	Tianran Liu (UC Irvine)
2019–2020	Ethan Chi (Stanford)
2018–2019	Alan Kai Yuen (UC Irvine)
2017–2018	Chad Kringen (MIT)
2016	Heeyoon Kim (MIT)

#### HIGH SCHOOL STUDENTS

2020–present	Neil Rathi (Palo Alto High School), now undergraduate at Stanford University
2021–2023	Jason S. Chon (Canyon High School), now undergraduate at Stanford University
2022	Adam Farris (San Mateo High School), now undergraduate at Stanford University

### Student Committee Memberships

2024	Shiva Upadhye (PhD Advancement, UCI Language Science)
2024	Jiaxuan Li (PhD Advancement, UCI Language Science)
2024	Weijie Xu (PhD Advancement, UCI Language Science)
2024	Charles Torres (PhD Advancement, UCI Language Science)
2024	Yongjia Song (PhD Advancement, UCI Language Science)
2024	Jeremy Yeaton (PhD Advancement, UCI Language Science)
2024	Soo Ryu (PhD Defense, University of Michigan Cognitive Science)
2023	Dheeru Dua (PhD Defense, UCI Computer Science)
2023	Anthony Chen (PhD Defense, UCI Computer Science)
2023	Shiva Upadhye (Concentration Exam, UCI Language Science)
2023	Weijie Xu (Concentration Exam, UCI Language Science)
2023	Jiaxuan Li (Concentration Exam, UCI Language Science)
2023	Kolby Nottingham (PhD Advancement, UCI Computer Science)
2023	Shivanshu Gupta (PhD Advancement, UCI Computer Science)
2022	Christian Navarro-Torres (PhD Defense, UCI Language Science)
2022	Niels Dickson (Concentration Exam, UCI Language Science)
2022	Charles Torres (Concentration Exam, UCI Language Science)
2022	Jeremy Yeaton (Concentration Exam, UCI Language Science)
2022	Zeinab Kachakeche (Concentration Exam, UCI Language Science)
2022	Yasaman Razeghi (PhD Advancement, UCI Computer Science)
2021	Zesheng Chen (PhD Advancement, UCI Logic & Philosophy of Science)

2021 Robert Logan (PhD Advancement, UCI Computer Science)  
2021 Noa Attali (Concentration Exam, UCI Language Science)  
2021 Zachary Rosen (Concentration Exam, UCI Language Science)  
2020 Arsenii Moskvichev (PhD Advancement, UCI Cognitive Sciences)  
2020 Eric Meinhardt (PhD Defense, UCSD Linguistics)  
2020 Andrea Takahesu Tabori (PhD Advancement, UCI Language Science)  
2019 Ying Xu (PhD Advancement, UCI Education)  
2019 Peter Schaedler (MS, UCI Computer Science)  
2019 Brandon Cabrera López (MS, UCI Computer Science)

## Natural Languages

Conversant in: English, Mandarin, German, Spanish, Hungarian

## Programming Languages

Python, R, Julia, Scheme, Haskell, Java, C++, perl