

## Roger Levy

Department of Brain and Cognitive Sciences      *Voice:* +1 (617) 253-5763  
Massachusetts Institute of Technology              *Fax:* +1 (617) 253-9216  
77 Massachusetts Avenue, Room 46-3033          *E-mail:* rplevy@mit.edu  
Cambridge, MA 02139-4307                          *WWW:* <http://www.mit.edu/~rplevy>

### RESEARCH INTERESTS

My research focuses on theoretical and applied questions in the processing and acquisition of natural language. Linguistic communication involves the resolution of uncertainty over a potentially unbounded set of possible signals and meanings. How can a fixed set of knowledge and resources be deployed to manage this uncertainty, how is the knowledge acquired, and what is the character of the resources required for these operations by the human mind? To address these questions I combine computational modeling, psycholinguistic experimentation, and analysis of large naturalistic language datasets. This work furthers our understanding of the cognitive underpinning of language processing and acquisition, and helps us design models and algorithms that will allow machines to process human language.

### POSITIONS HELD

Professor	2021–
Department of Brain & Cognitive Sciences, Massachusetts Institute of Technology	
Associate Professor	2016–2021
Department of Brain & Cognitive Sciences, Massachusetts Institute of Technology	
Associate Professor	2012–2016
Department of Linguistics, University of California, San Diego	
Assistant Professor	2006–2012
Department of Linguistics, University of California, San Diego	
UK Economic & Social Research Council Postdoctoral Fellow	2005–2006
<i>Syntax, Probability, Prediction, and Memory in Human Sentence Processing</i>	
Institute for Communicating and Collaborative Systems	
School of Informatics, University of Edinburgh	

### EDUCATION

Stanford University, Ph.D. in Linguistics	2005
Dissertation Title: <i>Probabilistic Models of Word Order and Syntactic Discontinuity</i>	
Committee: Christopher Manning (chair), Dan Jurafsky, Ivan Sag, Tom Wasow	
Stanford University, M.S. in Anthropological Sciences	2002
Thesis Title: <i>Evolution of Inbreeding Avoidance</i>	
Advisor: Arthur Wolf	
University of Tokyo, Research Student in Biological Anthropology	1997–1998
Advisor: Kenichi Aoki	

Inter-University Program for Chinese Language Study Fulbright Fellow Taipei, Taiwan (Stanford Center)	1996–1997
University of Arizona, B.S. in Mathematics Magna cum Laude (Minor: Physics)	1996

## HONORS AND AWARDS

Guggenheim Fellowship	2024
Outstanding Paper Award, EMNLP 2023 (Olausson et al. 2023)	2023
MIT School of Science Teaching Prize for Undergraduate Education	2023
Outstanding Paper Award, ACL 2023 (Sinha et al. 2023)	2023
Test of Time Award Honorable Mention, ACM SIGMM Test of Time Paper Award, for Rasiwasia et al. 2010	2021
MIT Brain & Cognitive Sciences Award for Excellence in Undergraduate Teaching, for 9.19/9.190: <i>Computational Psycholinguistics</i>	2021
Outstanding Reviewer, International Conference on Learning Representations	2021
MIT Brain & Cognitive Sciences Postdoc Award to an Outstanding Mentor	2020
International Chair in Empirical Foundations of Linguistics, LabEx collaborative	2018
Marr Prize for Best Student Paper, Annual Conference of the Cognitive Science Society, to Meilin Zhan (Zhan & Levy 2018)	2018
Cambridge Community Television Rossi Award for Creative and Responsive Leadership, presented to MIT Day of Action	2017
MIT Institute Community and Equity Award, for work on the Day of Action	2017
Best Paper Award, Annual Meeting of the Association for Computational Linguistics (Gutierrez, Levy, & Bergen 2016)	2016
Fellow, Center for Advanced Study of the Behavioral Sciences, Stanford, CA	2013–2014
Alfred P. Sloan Research Fellowship	2012–2014
NSF Faculty Early Career Development (CAREER) Award	2010–2015
Best Student Paper Award, ACM International Conference on Multimedia (Rasiwasia et al., 2010)	2010
UC San Diego Hellman Fellow	2010–2011
UC San Diego Faculty Career Development Program Award	2009–2010
UC San Diego Academic Senate Grants	2009, 2010, 2011, 2015
Royal Society of Edinburgh travel grant	2007
UK Economic & Social Research Council Postdoctoral Fellowship	2005–2006
Departmental Fellowship, Stanford University	2003–2004
Summer Research Grant, Center for East Asian Studies, Stanford University	2003
Departmental Fellowship, Stanford University	2001–2002
National Science Foundation Graduate Fellowship	1998–2001
Japanese Ministry of Education Graduate Fellowship	1997–1998
Fulbright Graduate Fellowship	1996–1997
University of Michigan Technical Japanese Program Summer Fellowship	1996
Phi Beta Kappa	1996

---

Outstanding Graduate in Mathematics, University of Arizona	1996
Minnesota Supercomputer Institute Summer Internship	1995
National Security Education Program Scholarship	1994–1995
Flinn Scholarship	1991–1996

## REFEREED JOURNAL ARTICLES

- Shain, C., Meister, C., Pimentel, T., Cotterell, R., & Levy, R. P. (2024). Large-scale evidence for logarithmic effects of word predictability on reading time. *Proceedings of the National Academy of Sciences*, *121*(10), e2307876121.
- Zhan, M., Chen, S., Levy, R. P., Lu, J., & Gibson, E. (2023). Rational sentence interpretation in Mandarin Chinese. *Cognitive Science*, *47*, e13383.
- Wilcox, E. G., Futrell, R., & Levy, R. (2023). Using Computational Models to Test Syntactic Learnability. *Linguistic Inquiry*, 1–44.
- Wilcox, E. G., Pimentel, T., Meister, C., Cotterell, R., & Levy, R. P. (2023). Testing the Predictions of Surprisal Theory in 11 Languages. *Transactions of the Association for Computational Linguistics*, *11*, 1451–1470.
- Kauf, C., Tuckute, G., Levy, R., Andreas, J., & Fedorenko, E. (2023). Lexical-Semantic Content, Not Syntactic Structure, Is the Main Contributor to ANN-Brain Similarity of fMRI Responses in the Language Network. *Neurobiology of Language*, 1–36.
- Meylan, S. C., Foushee, R., Wong, N. H., Bergelson, E., & Levy, R. P. (2023). How adults understand what young children say. *Nature Human Behaviour*, *7*(2111–2125).
- Pimentel, T., Meister, C., Wilcox, E. G., Levy, R. P., & Cotterell, R. (2023). On the Effect of Anticipation on Reading Times. *Transactions of the Association for Computational Linguistics*, *11*, 1624–1642.
- Hu, J., Levy, R., Degen, J., & Schuster, S. (2023). Expectations over Unspoken Alternatives Predict Pragmatic Inferences. *Transactions of the Association for Computational Linguistics*, *11*, 885–901.
- Berzak, Y., & Levy, R. P. (2023). Eye movement traces of linguistic knowledge in native and non-native reading. *Open Mind*, *7*, 179–196.
- Clark, T. H., Meister, C., Pimentel, T., Hahn, M., Cotterell, R., Futrell, R., & Levy, R. P. (2023). A cross-linguistic pressure for Uniform Information Density in word order. *Transactions of the Association for Computational Linguistics*, *11*, 1048–1065.
- Boyce, V., & Levy, R. P. (2023). A-maze of Natural Stories: Comprehension and surprisal in the Maze task. *Glossa Psycholinguistics*, *2*(1), 1–34.
- Hahn, M., Futrell, R., Levy, R. P., & Gibson, E. (2022). A resource-rational model of human processing of recursive linguistic structure. *Proceedings of the National Academy of Sciences*, *119*(43), e2122602119.
- Berzak, Y., Nakamura, C., Smith, A., Weng, E., Katz, B., Flynn, S., & Levy, R. (2022). CELER: A 365-participant corpus of eye movements in L1 and L2 English reading. *Open Mind*, 1–10.
- Jara-Ettinger, J., Levy, R. P., Sakel, J., Huanca, T., & Gibson, E. (2022). The origins of

the shape bias: Evidence from the Tsimane'. *Journal of Experimental Psychology: General*, 151(10), 2437–2447.

Smith, S. L., Nyirandagijimana, B., Hakizimana, J., Levy, R. P., Bienvenu, R., Uwamwezi, A., Hakizimfura, O., Uwimana, E., Kundu, P., Mpanumusingo, E., Nshimyiryo, A., Rusangwa, C., Kateera, F., Mukasakindi, H., & Raviola, G. J. (2021). Evaluating the delivery of Problem Management Plus in primary care settings in rural Rwanda: A study protocol using a pragmatic randomized hybrid type 1 effectiveness-implementation design. *BMJ Open*, 11, e054630.

Wehbe, L., Blank, I. A., Shain, C., Futrell, R., Levy, R., von der Malsburg, T., Smith, N., Gibson, E., & Fedorenko, E. (2021). Incremental Language Comprehension Difficulty Predicts Activity in the Language Network but Not the Multiple Demand Network. *Cerebral Cortex*, 1–18.

Zhan, M., Levy, R., & Kehler, A. (2020). Pronoun interpretation in Mandarin Chinese follows principles of Bayesian inference. *PLoS One*, 15(8), 1–42.

Futrell, R., Levy, R. P., & Gibson, E. (2020). Dependency locality as an explanatory principle for word order. *Language*, 96(2), 371–412.

Futrell, R., Gibson, E., & Levy, R. P. (2020). Lossy-context surprisal: An information-theoretic model of memory effects in sentence processing. *Cognitive Science*, 44, 1–54.

Ryskin, R., Levy, R. P., & Fedorenko, E. (2020). Do domain-general executive resources play a role in linguistic prediction? Re-evaluation of the evidence and a path forward. *Neuropsychologia*, 136, 1–12.

Bicknell, K., Levy, R., & Rayner, K. (2020). Ongoing cognitive processing influences precise eye movement targets in reading. *Psychological Science*, 1–12.

von der Malsburg, T., Poppels, T., & Levy, R. (2020). Implicit gender bias in linguistic descriptions for expected events: The cases of the 2016 US and 2017 UK elections. *Psychological Science*, 1–14.

Boyce, V., Futrell, R., & Levy, R. (2020). Maze made easy: Better and easier measurement of incremental processing difficulty. *Journal of Memory and Language*, 111, 1–13.

Gibson, E., Futrell, R., Piantadosi, S., Dautriche, I., Mahowald, K., Bergen, L., & Levy, R. (2019). How efficiency shapes human language. *Trends in Cognitive Sciences*, 23(5), 389–407.

Aslin, R. N., & Levy, R. P. (2019). Cognitive science honors the memory of Jeffrey Elman. *Open Mind*, 3, 23–30.

Kaestner, E., Morgan, A. M., Snider, J., Zhan, M., Jiang, X., Levy, R., Ferreira, V. S., Thesen, T., & Halgren, E. (2018). Toward a database of intracranial electrophysiology during natural language presentation. *Language, Cognition and Neuroscience*.

Gibson, E., Jara-Ettinger, J., Levy, R. P., & Piantadosi, S. T. (2018). The use of a computer display exaggerates the connection between exact and approximate number ability in remote populations. *Open Mind*, 2(1), 37–46.

Meylan, S., Frank, M. C., Roy, B. C., & Levy, R. (2017). The emergence of an abstract grammatical category in children's early speech. *Psychological Science*, 28(2), 181–192.

Jara-Ettinger, J., Piantadosi, S., Spelke, E. S., Levy, R., & Gibson, E. (2017). Mastery of

- the logic of natural numbers is not the result of mastery of counting: Evidence from late counters. *Developmental Science*, 20(6), e12459.
- Wittenberg, E., & Levy, R. (2017). If you want a quick kiss, make it count: How choice of syntactic construction affects event construal. *Journal of Memory and Language*, 94, 254–271.
- Leininger, M., Myslin, M., Rayner, K., & Levy, R. (2017). Do resource constraints affect lexical processing? Evidence from eye movements. *Journal of Memory and Language*, 93, 82–103.
- Gibson, E., Piantadosi, S. T., & Levy, R. (2017). *Post Hoc* analysis decisions drive the reported reading time effects in Hackl, Koster-Hale & Varvoutis (2012). *Journal of Semantics*, 34, 539–546.
- Futrell, R., Levy, R., & Gibson, E. (2017). 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.
- Morgan, E., & Levy, R. (2016a). Abstract knowledge versus direct experience in processing of binomial expressions. *Cognition*, 157, 384–402.
- Potts, C., Lassiter, D., Levy, R., & Frank, M. C. (2016). Embedded implicatures as pragmatic inferences under compositional lexical uncertainty. *Journal of Semantics*, 33(4), 755–802.
- Bergen, L., Levy, R., & Goodman, N. (2016). Pragmatic reasoning through semantic inference. *Semantics and Pragmatics*, 9(20).
- Pajak, B., Creel, S. C., & Levy, R. (2016). Difficulty in learning similar-sounding words: A developmental stage or a general property of learning? *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 42(9), 1377–1399.
- Myslin, M., & Levy, R. (2016). Comprehension priming as rational expectation for repetition: Evidence from syntactic processing. *Cognition*, 147, 29–56.
- Myslin, M., & Levy, R. (2015a). Codeswitching and predictability of meaning in discourse. *Language*, 91(4), 871–905.
- Kao, J. T., Levy, R., & Goodman, N. D. (2015). A computational model of linguistic humor in puns. *Cognitive Science*, 1–16.
- Pajak, B., & Levy, R. (2014). The role of abstraction in non-native speech perception. *Journal of Phonetics*, 46, 147–160.
- Pereira, J. C., Coviello, E., Doyle, G., Rasiwasia, N., Lanckriet, G., Levy, R., & Vasconcelos, N. (2014). On the role of correlation and abstraction in cross-modal multimedia retrieval. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 36(3), 521–535.
- Schotter, E. R., Bicknell, K., Howard, I., Levy, R., & Rayner, K. (2014). Task effects reveal cognitive flexibility responding to frequency and predictability: Evidence from eye movements in reading and proofreading. *Cognition*, 131(1), 1–27.
- Levy, R., Fedorenko, E., & Gibson, E. (2013). The syntactic complexity of Russian relative clauses. *Journal of Memory and Language*, 69(4), 461–495.
- Smith, N. J., & Levy, R. (2013). The effect of word predictability on reading time is logarithmic. *Cognition*, 128(3), 302–319.

- Levy, R., & Gibson, E. (2013). Surprisal, the PDC, and the primary locus of processing difficulty in relative clauses. *Frontiers in Psychology*, 4(229).
- Barr, D. J., Levy, R., Scheepers, C., & Tily, H. J. (2013). Random effects structure for confirmatory hypothesis testing: Keep it maximal. *Journal of Memory and Language*, 68(3), 255–278.
- Levy, R., & Keller, F. (2013). Expectation and locality effects in German verb-final structures. *Journal of Memory and Language*, 68(2), 199–222.
- Bicknell, K., & Levy, R. (2012a). The utility of modeling word identification from visual input within models of eye movements in reading. *Visual Cognition*, 20(4–5), 422–456.
- Levy, R., Fedorenko, E., Breen, M., & Gibson, T. (2012). The processing of extraposed structures in English. *Cognition*, 122(1), 12–36.
- Levy, R., & Daumé III, H. (2011). Computational methods are invaluable for typology, but the models must match the questions: Commentary on Dunn et al. (2011). *Linguistic Typology*, 15(2), 393–399.
- Rohde, H., Levy, R., & Kehler, A. (2011). Anticipating explanations in relative clause processing. *Cognition*, 118(3), 339–358.
- Levy, R., Bicknell, K., Slattery, T., & Rayner, K. (2009a). Eye movement evidence that readers maintain and act on uncertainty about past linguistic input. *Proceedings of the National Academy of Sciences*, 106(50), 21086–21090.
- Levy, R. (2008a). Expectation-based syntactic comprehension. *Cognition*, 106(3), 1126–1177.
- Benor, S. B., & Levy, R. (2006). The chicken or the egg? A probabilistic analysis of English binomials. *Language*, 82(2), 233–278.

## REFEREED CONFERENCE PROCEEDINGS PAPERS

- Hu, J., & Levy, R. (2023, December). Prompting is not a substitute for probability measurements in large language models. In H. Bouamor, J. Pino & K. Bali (Eds.), *Proceedings of the 2023 conference on empirical methods in natural language processing* (pp. 5040–5060). Association for Computational Linguistics.
- Gauthier, J., & Levy, R. (2023, December). The neural dynamics of word recognition and integration. In H. Bouamor, J. Pino & K. Bali (Eds.), *Proceedings of the 2023 conference on empirical methods in natural language processing* (pp. 980–995). Association for Computational Linguistics.
- Olausson, T., Gu, A., Lipkin, B., Zhang, C., Solar-Lezama, A., Tenenbaum, J., & Levy, R. (2023, December). LINC: A neurosymbolic approach for logical reasoning by combining language models with first-order logic provers. In H. Bouamor, J. Pino & K. Bali (Eds.), *Proceedings of the 2023 conference on empirical methods in natural language processing* (pp. 5153–5176). Association for Computational Linguistics.
- Sinha, K., Gauthier, J., Mueller, A., Misra, K., Fuentes, K., Levy, R., & Williams, A. (2023). Language model acceptability judgements are not always robust to context [Outstanding Paper Award]. *Proceedings of the 61st Annual Meeting of the Association for Computational*

*Linguistics (Volume 1: Long Papers)*, 6043–6063.

Yang, S., Levy, R., & Kim, Y. (2023). Unsupervised discontinuous constituency parsing with mildly context-sensitive grammars. *Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers)*, 5747–5766.

Martin, K., Gauthier, J., Breiss, C., & Levy, R. P. (2023). Probing Self-supervised Speech Models for Phonetic and Phonemic Information: A Case Study in Aspiration. *Proceedings of Interspeech*, 251–255.

Eisape, T., Gangireddy, V., Levy, R. P., & Kim, Y. (2022). Probing for incremental parse states in autoregressive language models. *Findings of EMNLP 2022*.

Tucker, M., Levy, R. P., Shah, J., & Zaslavsky, N. (2022). Trading off utility, informativeness, and complexity in emergent communication. *Proceedings of NeurIPS 2022*.

Clark, T. H., Wilcox, E. G., Gibson, E., & Levy, R. P. (2022). Evidence for availability effects on speaker choice in the Russian comparative alternation. *Proceedings of the 44th Annual Meeting of the Cognitive Science Society*.

Zhou, I., Hu, J., Levy, R. P., & Zaslavsky, N. (2022). Teasing apart models of pragmatics using optimal reference game design. *Proceedings of the 44th Annual Meeting of the Cognitive Science Society*.

Tucker, M., Eisape, T., Qian, P., Levy, R. P., & Shah, J. (2022). When does syntax mediate neural language model performance? Evidence from dropout probes. *Proceedings of the 21st Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*.

Qian, P., & Levy, R. (2022). Flexible generation from fragmentary linguistic input. *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics*, 8176–8196.

Meister, C., Pimentel, T., Clark, T., Cotterell, R., & Levy, R. (2022). Analyzing wrap-up effects through an information-theoretic lens. *Proceedings of the 59th Annual Meeting of the Association for Computational Linguistics*, 20–28.

Mao, J., Shi, F. H., Wu, J., Levy, R. P., & Tenenbaum, J. B. (2021). Grammar-based grounded lexicon learning. *Proceedings of NeurIPS 2021*.

Meister, C., Pimentel, T., Haller, P., Jäger, L., Cotterell, R., & Levy, R. (2021). Revisiting the Uniform Information Density hypothesis. *Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing*, 963–980.

Wang, Y., Hu, J., Levy, R., & Qian, P. (2021). Controlled evaluation of grammatical knowledge in Mandarin Chinese language models. *Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing*, 5604–5620.

Qian, P., Naseem, T., Levy, R., & Astudillo, R. F. (2021). Structural guidance for Transformer language models. *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics*.

Wilcox, E., Vani, P., & Levy, R. P. (2021). A targeted assessment of incremental processing in neural language models and humans. *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics*.

Tucker, M., Qian, P., & Levy, R. P. (2021). What if this modified that? Syntactic interven-

tions with counterfactual embeddings. *Findings of the Association for Computational Linguistics*.

Berzak, Y., & Levy, R. P. (2021). Eye movement traces of linguistic knowledge. *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society*.

Chen, R., Levy, R. P., & Eisape, T. (2021). On factors influencing typing time: Analyzing TypeRacer's massive open access dataset. *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society*.

Meylan, S. C., Foushee, R., Bergelson, E., & Levy, R. P. (2021). Child-directed listening: How caregiver inference enables children's early verbal communication. *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society*.

Vani, P., Wilcox, E. G., & Levy, R. P. (2021). Using the Interpolated Maze task to assess incremental processing in English relative clauses. *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society*.

Hu, J., Zaslavsky, N., & Levy, R. (2021). Competition from novel features drives scalar inferences in reference games. *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society*.

Aparicio, H., Chen, C., Levy, R., & Coppock, E. (2021). Granularity in the semantics of comparison. *Semantics and Linguistic Theory*, 31, 550–569.

Wilcox, E. G., Levy, R. P., & Davidson, K. (2021). Which presuppositions are subject to contextual felicity constraints? In N. Dreier, C. Kwon, T. Darnell & J. Starr (Eds.), *Proceedings of the 31st Conference on Semantics and Linguistic Theory* (pp. 345–364, Vol. 31).

Eisape, T., Zaslavsky, N., & Levy, R. P. (2020). Cloze distillation improves psychometric predictive power. *Proceedings of the 24th Conference on Computational Natural Language Learning (CoNLL)*, 609–619.

Malmaud, J., Levy, R. P., & Berzak, Y. (2020). Bridging information-seeking human gaze and machine reading comprehension. *Proceedings of the 24th Conference on Computational Natural Language Learning (CoNLL)*, 142–152.

Wilcox, E., Qian, P., Futrell, R., Kohita, R., Levy, R. P., & Ballesteros, M. (2020). Structural supervision improves few-shot learning and syntactic generalization in neural language models. *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing*.

Tessler, M. H., Tsvilodub, P., Snedeker, J., & Levy, R. P. (2020). Informational goals, sentence structure, and comparison class inference. *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*, 537–543.

Hofer, M., Verhoef, T., & Levy, R. P. (2020). Hierarchical generalizations support systematicity inferences in the lexicon. *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*, 2398–2404.

Wilcox, E. G., Gauthier, J., Hu, J., Qian, P., & Levy, R. P. (2020). On the predictive power of neural language models for human real-time comprehension behavior. *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*, 1707–1713.

Meylan, S., Levy, R. P., & Bergelson, E. (2020). Children's expressive and receptive knowledge of the English regular plural. *Proceedings of the 42nd Annual Meeting of the Cognitive*



*Science Society*, 2270–2276.

Tenenbaum, A. L., Braginsky, M., & Levy, R. P. (2020). Integrating semantics into developmental models of morphology learning. *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*, 1700–1706.

Hu, J., Gauthier, J., Qian, P., Wilcox, E., & Levy, R. P. (2020). A systematic assessment of syntactic generalization in neural language models. *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics*, 1725–1744.

Gauthier, J., Hu, J., Wilcox, E., Qian, P., & Levy, R. P. (2020). SyntaxGym: An online platform for targeted evaluation of language models. *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics*, 70–76.

Berzak, Y., Malmaud, J., & Levy, R. P. (2020). STARC: Structured annotations for reading comprehension. *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics*, 5726–5735.

Hu, J., Chen, S. Y., & Levy, R. P. (2020). A closer look at the performance of neural language models on reflexive anaphor licensing. *Proceedings of the Society for Computation in Linguistics (SCiL) 2020*, 382–392.

An, A., Qian, P., Wilcox, E., & Levy, R. P. (2019). Representation of constituents in neural language models: Coordination phrase as a case study. *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and 9th International Joint Conference on Natural Language Processing*, 2888–2899.

Gauthier, J., & Levy, R. P. (2019). Linking artificial and human neural representations of language. *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and 9th International Joint Conference on Natural Language Processing*, 529–539.

Zhan, M., & Levy, R. P. (2019). Availability-based production predicts speakers' real-time choices of Mandarin classifiers. *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*, 1268–1274.

Wilcox, E., Levy, R. P., & Futrell, R. (2019b). What syntactic structures block dependencies in RNN language models? *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*, 1199–1205.

Hofer, M., & Levy, R. P. (2019). Iconicity and structure in the emergence of combinatoriality. *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*, 442–448.

Tessler, M. H., Gu, K., & Levy, R. P. (2019). Incremental understanding of conjunctive generic sentences. *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*, 2954–2960.

Qian, P., Hewitt, L., Tenenbaum, J. B., & Levy, R. P. (2019). Inferring structured visual concepts from minimal data. *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*, 2620–2626.

Gauthier, J., Levy, R. P., & Tenenbaum, J. B. (2019). A rational model of syntactic bootstrapping. *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*, 1815–1821.

Futrell, R., Wilcox, E., Morita, T., Qian, P., Ballesteros, M., & Levy, R. (2019). Neural language models as psycholinguistic subjects: Representations of syntactic state. *Proceedings of the 18th Annual Conference of the North American Chapter of the Association for Computa-*

*tional Linguistics: Human Language Technologies*, 32–42.

Wilcox, E., Qian, P., Futrell, R., Ballesteros, M., & Levy, R. (2019). Structural supervision improves learning of non-local grammatical dependencies. *Proceedings of the 18th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*, 3302–3312.

Futrell, R., & Levy, R. P. (2019). Do RNNs learn human-like abstract word order preferences? *Proceedings of the Society for Computation in Linguistics (SCiL) 2019*, 2, 50–59.

Shen, J., Hofer, M., Felbo, B., & Levy, R. (2018). Comparing models of associative meaning: An empirical investigation of reference in simple language games. *Proceedings of the Twenty-Second Conference on Computational Natural Language Learning (CoNLL)*, 292–301.

Levy, R. P. (2018). Communicative efficiency, Uniform Information Density, and the Rational Speech Act Theory. *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*, 684–689.

Gauthier, J., Levy, R. P., & Tenenbaum, J. B. (2018). Word learning and the acquisition of syntactic–semantic overhypotheses. *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*, 1699–1704.

Ivanova, A., & Levy, R. (2018). Pragmatic inference of intended referents from binomial word order. *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*, 1865–1870.

Zhan, M., & Levy, R. (2018b). Comparing theories of speaker choice using a model of classifier production in Mandarin Chinese. *Proceedings of the 17th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*, 1997–2005.

Berzak, Y., Katz, B., & Levy, R. (2018). Assessing language proficiency from eye movements in reading. *Proceedings of the 17th Annual Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*, 1986–1996.

Hofer, M., & Levy, R. (2017). Modeling sources of uncertainty in spoken word learning. *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*, 550–555.

Futrell, R., & Levy, R. (2017). Noisy-context surprisal as a human sentence processing cost model. *Proceedings of the 15th Conference of the European Chapter of the Association for Computational Linguistics (EACL)*, 688–698.

Doyle, G., & Levy, R. (2016). Data-driven learning of symbolic constraints for a log-linear model in a phonological setting. *Proceedings of the 26th International Conference on Computational Linguistics (COLING)*, 2217–2226.

Gutiérrez, E. D., Levy, R., & Bergen, B. (2016). Finding non-arbitrary form-meaning systematicity using string-metric learning for kernel regression [Best Paper Award]. *Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics*, 2379–2388.

Zhan, M., Levy, R., & Kehler, A. (2016a). Bayesian pronoun interpretation in Mandarin Chinese. *Proceedings of the 38th Annual Meeting of the Cognitive Science Society*, 2393–2398. Oral presentation.

Poppels, T., & Levy, R. (2016d). Structure-sensitive noise inference: Comprehenders expect exchange errors. *Proceedings of the 38th Annual Meeting of the Cognitive Science Society*,

378–383. Poster presentation.

Morgan, E., & Levy, R. (2016c). Frequency-dependent regularization in iterated learning. In S. Roberts, C. Cuskley, L. McCrohon, L. Barceló-Coblijn, O. Feher & T. Verhoef (Eds.), *The evolution of language: Proceedings of the 11th international conference (EVOLANG11)*.

Poppels, T., & Levy, R. (2015a). Resolving quantity and informativeness implicature in indefinite reference. In W. Zuidema & J. Szymanik (Eds.), *Proceedings of the 2015 Amsterdam Colloquium: The Workshop on Reasoning in Natural Language* (pp. 313–322).

Morgan, E., & Levy, R. (2015b). Modeling idiosyncratic preferences: How generative knowledge and expression frequency jointly determine language structure. *Proceedings of the 37th Annual Meeting of the Cognitive Science Society*, 1649–1654.

Potts, C., & Levy, R. (2015). Negotiating lexical uncertainty and speaker expertise with disjunction. *Proceedings of the 41st Annual Meeting of the Berkeley Linguistics Society*.

Levy, R., Bergen, L., & Goodman, N. D. (To appear). *Roses and flowers: An informativeness implicature in probabilistic pragmatics. Proceedings of the 24th Conference on Semantics and Linguistic Theory.*

Doyle, G., Bicknell, K., & Levy, R. (2014b). Nonparametric learning of phonological constraints in Optimality Theory. *Proceedings of the 52nd Annual Meeting of the Association for Computational Linguistics*, 1094–1103.

Kao, J., Levy, R., & Goodman, N. (2013). The funny thing about incongruity: A computational model of humor in puns. *Proceedings of the 35th Annual Meeting of the Cognitive Science Society*, 728–733.

Bicknell, K., Higgins, E., Levy, R., & Rayner, K. (2013). Evidence for cognitively controlled saccade targeting in reading. *Proceedings of the 35th Annual Meeting of the Cognitive Science Society*, 197–202.

Meylan, S., Frank, M. C., & Levy, R. (2013). Modeling the development of determiner productivity in children's early speech. *Proceedings of the 35th Annual Meeting of the Cognitive Science Society*, 3032–3037.

Doyle, G., & Levy, R. (2013). Combining multiple information types in Bayesian word segmentation. *Proceedings of the 2013 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies*, 117–126.

Bicknell, K., & Levy, R. (2012c). Word predictability and frequency effects in a rational model of reading. *Proceedings of the 34th Annual Meeting of the Cognitive Science Society*, 126–131.

Bergen, L., Goodman, N. D., & Levy, R. (2012). That's what she (could have) said: How alternative utterances affect language use. *Proceedings of the 34th Annual Meeting of the Cognitive Science Society*, 120–125.

Bergen, L., Levy, R., & Gibson, E. (2012). Verb omission errors: Evidence of rational processing of noisy language inputs. *Proceedings of the 34th Annual Meeting of the Cognitive Science Society*, 1320–1325.

Pajak, B., Creel, S. C., & Levy, R. (2012). Can native-language perceptual bias facilitate learning words in a new language? *Proceedings of the 34th Annual Meeting of the Cognitive Science Society*, 2174–2179.

- Pajak, B., & Levy, R. (2012). Distributional learning of L2 phonological categories by listeners with different language backgrounds. In A. Biller, E. Chung & A. Kimball (Eds.), *Proceedings of the 36th Boston University conference on language development* (pp. 400–413). Somerville, MA: Cascadilla Press.
- Park, Y. A., & Levy, R. (2011). Automated whole sentence grammar correction using a noisy channel model. *Proceedings of the 49th Annual Meeting of the Association for Computational Linguistics: Human Language Technologies*, 934–944.
- Levy, R. (2011a). Integrating surprisal and uncertain-input models in online sentence comprehension: Formal techniques and empirical results. *Proceedings of the 49th Annual Meeting of the Association for Computational Linguistics: Human Language Technologies*, 1055–1065.
- Pajak, B., & Levy, R. (2011). Phonological generalization from distributional evidence. *Proceedings of the 33rd Annual Meeting of the Cognitive Science Society*.
- Smith, N. J., & Levy, R. (2011). Cloze but no cigar: The complex relationship between Cloze, corpus, and subjective probabilities in language processing. *Proceedings of the 33rd Annual Meeting of the Cognitive Science Society*, 1637–1642.
- Rasiwasia, N., Pereira, J. M. C., Coviello, E., Doyle, G., Lanckriet, G. R. G., Levy, R., & Vasconcelos, N. (2010). A new approach to cross-modal multimedia retrieval [Best Student Paper Award]. *Proceedings of the ACM International Conference on Multimedia*, 251–260. **Best student paper award.**
- Bicknell, K., & Levy, R. (2010c). A rational model of eye movement control in reading. *Proceedings of the 48th Annual Meeting of the Association for Computational Linguistics*, 1168–1178.
- Bicknell, K., & Levy, R. (2010b). Rational eye movements in reading combining uncertainty about previous words with contextual probability. *Proceedings of the 32nd Annual Meeting of the Cognitive Science Society*, 1142–1147.
- Smith, N. J., & Levy, R. (2010). Fixation durations in first-pass reading reflect uncertainty about word identity. *Proceedings of the 32nd Annual Meeting of the Cognitive Science Society*, 1313–1318.
- Smith, N. J., Chan, W.-H., & Levy, R. (2010). Is perceptual acuity asymmetric in isolated word recognition? Evidence from an ideal-observer reverse-engineering approach. *Proceedings of the 32nd Annual Meeting of the Cognitive Science Society*, 1483–1488.
- Colavin, R., Levy, R., & Rose, S. (2010). Modeling OCP-Place with the Maximum Entropy Phonotactic Learner. *Proceedings of the Chicago Linguistic Society*.
- Levy, R., Reali, F., & Griffiths, T. L. (2008). Modeling the effects of memory on human online sentence processing with particle filters. *Proceedings of the 22nd Conference on Neural Information Processing Systems (NIPS)*.
- Bicknell, K., & Levy, R. (2009). A model of local coherence effects in human sentence processing as consequences of updates from bottom-up prior to posterior beliefs. *Proceedings of the 10th Annual Meeting of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT) conference*, 665–673.
- Park, Y. A., & Levy, R. (2009). Minimal-length linearizations for mildly context-sensitive

dependency trees. *Proceedings of the 10th Annual Meeting of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT) conference*, 335–343.

Bicknell, K., Levy, R., & Demberg, V. (2009). Correcting the incorrect: Local coherence effects modeled with prior belief update. *Proceedings of the 35th Annual Meeting of the Berkeley Linguistics Society*, 13–24.

Levy, R. (2008c). A noisy-channel model of rational human sentence comprehension under uncertain input. *Proceedings of the 13th Conference on Empirical Methods in Natural Language Processing*, 234–243.

Doyle, G., & Levy, R. (2008). Environment prototypicality in syntactic alternation. *Proceedings of the 34th Annual Meeting of the Berkeley Linguistics Society*.

Smith, N. J., & Levy, R. (2008a). Optimal processing times in reading: A formal model and empirical investigation. *Proceedings of the 30th Annual Meeting of the Cognitive Science Society*, 595–600.

Levy, R., & Jaeger, T. F. (2007). Speakers optimize information density through syntactic reduction. *Proceedings of the 20th Conference on Neural Information Processing Systems (NIPS)*.

Levy, R., & Andrew, G. (2006). Tregex and Tsurgeon: Tools for querying and manipulating tree data structures. *Proceedings of the 2006 conference on Language Resources and Evaluation*, 2231–2234.

Levy, R., & Manning, C. (2004). Deep dependencies from context-free statistical parsers: Correcting the surface dependency approximation. *Proceedings of the 42nd Annual Meeting of the Association for Computational Linguistics*.

Levy, R., & Manning, C. (2003). Is it harder to parse Chinese, or the Chinese Treebank? *Proceedings of the 41st Annual Meeting of the Association for Computational Linguistics*.

Levy, R., & Oshima, D. (2003). Non-transitive information flow in Japanese noun-classifier matching [Available online at <http://csli-publications.stanford.edu/HPSG/4/>]. In S. Müller (Ed.), *Proceedings of the 10th international conference on Head-Driven Phrase Structure Grammar* (pp. 257–277). CSLI Publications.

Thompson, C., Levy, R., & Manning, C. (2003). A generative model for FrameNet semantic role labeling. *Proceedings of the 14th European Conference on Machine Learning*, 397–408.

Levy, R., & Pollard, C. (2001). Coordination and neutralization in HPSG [Available online at <http://csli-publications.stanford.edu/HPSG/2/>]. In F. V. Eynde, L. Hellan & D. Beer-mann (Eds.), *Proceedings of the 8th international conference on Head-Driven Phrase Structure Grammar* (pp. 221–234). CSLI Publications.

## REFEREED WORKSHOP PROCEEDINGS PAPERS

Liu, E., Tessler, M. H., Dubosh, N., Hiller, K., & Levy, R. (2022). Assessing group-level gender bias in professional evaluations: The case of medical student end-of-shift feedback. *Proceedings of the 4th Workshop on Gender Bias in Natural Language Processing (GeBNLP)*, 86–93.

- Hu, J., Levy, R., & Zaslavsky, N. (2021). Scalable pragmatic communication via self-supervision. *Proceedings of the 2021 ICML Workshop on Self-Supervised Learning for Reasoning and Perception*.
- Thrush, T., Wilcox, E. G., & Levy, R. P. (2020). Investigating novel verb learning in BERT: Selectional preference classes and alternation-based syntactic generalization. *Proceedings of the Third BlackboxNLP Workshop on Analyzing and Interpreting Neural Networks for NLP*, 265–275.
- Eisape, T., Levy, R. P., Tenenbaum, J. B., & Zaslavsky, N. (2020). Toward human-like object naming in artificial neural systems. *Proceedings of the ICLR Workshop on Bridging AI and Cognitive Science (BAICS)*.
- Wilcox, E., Levy, R. P., & Futrell, R. (2019a). Hierarchical representation in neural language models: Suppression and recovery of expectations. *Proceedings of the Second BlackboxNLP workshop*.
- Gillani, N., & Levy, R. (2019). Simple dynamic word embeddings to map perceptions in the public sphere. *Proceedings of the Third Workshop on Natural Language Processing and Computational Social Science*, 94–99.
- Wilcox, E., Levy, R. P., Morita, T., & Futrell, R. (2018). What do RNN language models learn about filler–gap dependencies? *Proceedings of the Workshop on Analyzing and Interpreting Neural Networks for NLP*.
- Pajak, B., Bicknell, K., & Levy, R. (2013c). A model of generalization in distributional learning of phonetic categories. *Proceedings of the 4th Annual Workshop on Cognitive Modeling and Computational Linguistics*, 11–20.
- Fossum, V., & Levy, R. (2012). Sequential vs. hierarchical syntactic models of human incremental sentence processing. *Proceedings of the 3rd Annual Workshop on Cognitive Modeling and Computational Linguistics*, 61–69.
- Bicknell, K., & Levy, R. (2012b). Why long words take longer to read: The role of uncertainty about word length. *Proceedings of the 3rd Annual Workshop on Cognitive Modeling and Computational Linguistics*, 21–30.
- West, R., Park, Y. A., & Levy, R. (2011). Bilingual random walk models for automated grammar correction of ESL author-produced text. *Proceedings of the Workshop on Innovative Use of NLP for Building Educational Applications*, 170–179.
- Lev, I., MacCartney, B., Manning, C., & Levy, R. (2004). Solving logic puzzles: From robust processing to precise semantics. *Proceedings of the 2nd Workshop on Text Meaning and Interpretation*, 9–16.

## BOOK CHAPTERS

- Wilcox, E. G., Gauthier, J., Hu, J., Qian, P., & Levy, R. P. (2022). Learning syntactic structures from string input. In S. Lappin & J.-P. Bernardy (Eds.), *Algebraic structures in natural language*. Taylor & Francis.
- Wasow, T., Levy, R., Melnick, R., Zhu, H., & Juzek, T. (2015). Processing, prosody, and optional *to*. In L. Frazier & E. Gibson (Eds.), *Explicit and implicit prosody in sentence processing* (pp. 133–158). Springer.

Levy, R. (2013). Memory and surprisal in human sentence comprehension. In R. P. G. van Gompel (Ed.), *Sentence processing* (pp. 78–114). Hove: Psychology Press.

Aoki, K., Satoh, D., & Levy, R. (2002). Theoretical aspects of brother–sister mating in birds and mammals. In K. Aoki & T. Akazawa (Eds.), *Human mate choice and prehistoric marital networks* (pp. 5–15). Nichibun, Kyoto.

## TECHNICAL REPORTS

Rambow, O., Chiang, D., Diab, M., Habash, N., Hwa, R., Sima'an, K., Lacey, V., Levy, R., Nichols, C., & Shareef, S. (2006). *Parsing Arabic dialects* (tech. rep.). Johns Hopkins University.

## OTHER PUBLICATIONS

Zaslavsky, N., Hu, J., & Levy, R. P. (2020, May 13). *A rate–distortion view of human pragmatic reasoning* (1). arXiv: 2005.06641 [cs.CL].

Futrell, R., Levy, R., & Dryer, M. (2017). *A statistical comparison of some theories of NP word order* (1). arXiv: 1709.02783 [cs.CL].

Levy, R. (2014, May 12). *Using R formulae to test for main effects in the presence of higher-order interactions* (1). arXiv: 1405.2094 [stat.ME].

Levy, R. (2011b). Probabilistic linguistic expectations, uncertain input, and implications for eye movements in reading. *Studies of Psychology and Behavior*, 9(1), 52–63.

## THESES

**2005.** Roger Levy. “Probabilistic Models of Word Order and Syntactic Discontinuity”. Ph.D. Thesis, Stanford University.

**1999.** Roger Levy. “Evolution of Inbreeding Avoidance.” Master’s Thesis, Stanford University. (Degree awarded 2002.)

## MANUSCRIPTS

**2002.** Roger Levy. “Parallelism and Weight Effects in English Coordinate Noun Phrases and Daughter Annotation of PCFGs.” Manuscript, Stanford University.

**2001.** Roger Levy. “Feature Indeterminacy and the Coordination of Unlikes in a Totally Well-Typed HPSG.” Manuscript, Stanford University. Available online at <http://idiom.ucsd.edu/~rlevy/papers/feature-indet.ps>

## FUNDING – EXTRAMURAL

**2022–2025.** Roger Levy, Nidhi Seethapathi, and Noga Zaslavsky. *An integrative computational account of language and locomotion*. James S. McDonnell Foundation Understanding Human Cognition Opportunity Award.

- 2021–2024.** Roger Levy (PI), Edward Gibson (Co-PI). *Noisy-channel processing in human language understanding*. National Science Foundation (BCS-2121074).
- 2021–2023.** Roger Levy (PI). *Developing a scalable theory of alternatives in pragmatics*. National Science Foundation Doctoral Dissertation Research Improvement award (BCS-2116918) for PhD candidate Jennifer Hu.
- 2021–2026.** Evelina Fedorenko, Mark Richardson, Nancy Kanwisher, Ziv Williams, Roger Levy, Sydney Cash, Noga Zaslavsky, Alan Bush, Angélique Paulk. NIH U01 “Computational neuroscience of language processing in the human brain”.
- 2019–2021.** Roger Levy (PI). *Extending and testing theories of language production by investigating speaker choice in a classifier language*. National Science Foundation Doctoral Dissertation Research Improvement award (BCS-1844723) for PhD candidate Meilin Zhan.
- 2018–2021.** Roger Levy (PI). *Computational analysis of eye movements in reading: reader characteristics, cognitive state, and natural language processing*. National Science Foundation (IIS-1815529).
- 2019–2020.** Roger Levy and Joshua Tenenbaum (PIs). *Grounded, grammar-based language learning*. Google Faculty Research Award.
- 2016–2020.** Roger Levy (PI). *The edge of the lexicon: Productive knowledge and direct experience in the acquisition and processing of multiword expressions*. National Science Foundation (BCS-1551866).
- 2015–2018** (extended through 2019). Roger Levy (PI). *Broad-coverage probabilistic models of communication in context*. National Science Foundation (BCS-1456081; collaborative research award with Michael C. Frank and Christopher Potts, Stanford).
- 2012–2014** (extended through 2016). Alfred P. Sloan Foundation Fellowship.
- 2010–2015** (extended through 2016). Roger Levy (PI) and Keith Rayner. *Linguistic Processes in Sentence Comprehension and Reading*. National Institute of Child Health & Human Development (NIH 1R01HD065829-01).
- 2010–2015** (extended through 2016). Roger Levy (PI). *Rational Language Processing with Uncertain and Noisy Input*. National Science Foundation CAREER (CISE/IIS-0953870, co-funded by SBE/BCS).

## FUNDING – INTRAMURAL (MIT)

- 2024.** Roger Levy (MIT BCS), Danny Fox (MIT Linguistics), and Yoon Kim (MIT EECS). *The science of language in the era of generative AI*. MIT Generative AI Impact Awards.
- 2022–2024.** Roger Levy (PI). *Levels of representation in how the brain processes language*. Paul E. and Lilah Newton Brain Science Award.
- 2021–** Jacob Andreas, Regina Barzilay, James Glass, Tommi Jaakkola, Roger Levy (MIT investigators). MIT–IBM Signature Project on Low-Resource Language Learning.
- 2021–2022.** Jacob Andreas, Roger Levy, Evelina Fedorenko, Athulya Aravind. Pilot funding, MIT Quest for Intelligence, Semantics for Language.
- 2020–2021.** Roger Levy (MIT PI) and Ramón Astudillo (IBM PI). *Extending and testing hybrid neuro-symbolic architectures with neural control for natural language*. Exploratory project



for MIT–IBM Watson AI Laboratory.

**2018–2019.** Roger Levy (MIT PI) and Miguel Ballesteros (IBM PI). *Hierarchically structured symbolic architectures with neural control for robust and human-like natural language parsing*. Exploratory project for MIT–IBM Watson AI Laboratory.

**2018–2020.** Roger Levy (PI). *MEG decoding of representations and computations in real-time language comprehension*. Paul E. and Lilah Newton Brain Science Award.

## FUNDING – INTRAMURAL (UCSD)

**2015–2016.** Roger Levy (PI). *Resolving Quantity and Informativity in Language Understanding*. Academic Senate Research Grant.

**2015–2016.** Eric Halgren, Victor Ferreira, Vikash Gilja, Shadi Dayeh, and Roger Levy (co-PIs). *The neural basis of syntax*. Chancellor’s Interdisciplinary Collaboratories program grant.

**2011–2012.** Roger Levy (PI). *The acquisition of phonological categories as hierarchical inductive inference*. Academic Senate Research Grant.

**2011–2012.** Roger Levy, Keith Rayner and Nuno Vasconcelos (co-PIs). *How language and visual saliency jointly guide eye movements in the perception of complex scenes*. Chancellor’s Interdisciplinary Collaboratories program grant.

**2010–2011.** Roger Levy (PI). *Using serial reproduction to investigate human language comprehension*. Hellman Fellowship.

**2010.** Roger Levy (PI). *Error identification and hallucinated garden paths in language comprehension*. Academic Senate Research Grant.

**2009.** Roger Levy (PI). *The deployment of probabilistic knowledge in online sentence comprehension*. Academic Senate Research Grant.

## INVITED PRESENTATIONS

**2024.** “Theory of expectation-based human language processing in the era of large language models.” Keynote talk, *Highlights in the Language Sciences Conference*, Nijmegen, The Netherlands, July 8–11 2024.

**2024.** “Large language models and human cognition.” Keynote talk, LREC–COLING 2024, Turin, Italy, 20–25 May 2024.

**2024.** “How large language models can contribute to cognitive science.” NYU NLP/Text-as-Data Talk Series, 28 March 2024.

**2023.** “Syntactic processing in humans and neural language models”. Workshop on Natural Language Processing, Uppsala University, 22 September 2023.

**2022.** “Unifying expectation-based processing and memory constraints in the theory of human language comprehension”. Cognitive Science Colloquium, Princeton University, 27 October 2022.

**2022.** “The Acquisition and Processing of Grammatical Structure: Insights from Deep Learning”.

Plenary speaker, 58th Annual Meeting of the Chicago Linguistic Society. 24 April 2022.  
Keynote speaker, UC Irvine Computational Cognitive Modeling Summer School for Language Science, 2 August 2022.

**2021.** “How language understanding unfolds in minds and machines.

Colloquium, Language Technologies Institute, Carnegie Mellon University, 10 September 2021.

Colloquium, Cambridge University Natural Language Processing Seminar, 12 November 2021.

Colloquium, Centre for Linguistic Theory and Studies in Probability, University of Gothenburg, 17 November 2021.

**2021.** “Inferring comprehenders’ linguistic abilities and cognitive state.” Invited talk, Duolingo, 9 September 2021.

**2021.** “The Nature and Origins of Grammatical Productivity”. Invited lecture with Stephan Meylan, Leipzig Lectures on Language, 21 July 2021.

**2021.** “Grammatical generalization and language processing in humans and machines”. Invited talk, Collège de France Colloquium *The representation of language in brains and machines*, 24–25 June 2021.

**2021.** “Semantics, Pragmatics, and Context in Grounded Human Language Understanding”. Invited talk, 4th Visually Grounded Interaction and Language (ViGIL) Workshop, NAACL–HLT Conference, 10 June 2021.

**2021.** “Information Density, Availability, and Theories of Speaker Choice in a Classifier Language”. Linguistics Department Colloquium, University of Chicago, 25 February 2021.

**2020.** “Grammatical generalization in neural language models: insights for theory of human language acquisition and processing”. Invited talk, Research Seminar of the Linguistics Department of the University of Geneva, 8 December 2020.

**2020.** “Evaluating and calibrating neural language models for human-like language processing.” Invited talk, third BlackboxNLP workshop, 20 November 2020.

**2020–2021.** “Computational models of language processing in humans and machines.”

Machine Learning Research Group, Oracle Labs, 19 August 2020.

Computer Science Departmental Colloquium, Worcester Polytechnic Institute, 16 April 2021.

**2019.** “The learnability of syntactic generalizations from linguistic input: insights from deep learning”. Center for Research in Language, UC San Diego, 12 November 2019.

**2019.** “Implicit gender bias in preferred linguistic descriptions for expected events: the US and UK elections and beyond.”

Opportunity Insights Lunch Series, Harvard University, 16 October 2019.

Cognitive Psychology Brownbag talk, UC San Diego, 15 November 2019.

**2019.** “Context representation and expectation-based human language processing”. Keynote talk, *Information Structure and Ambiguity: The Process of Integrating Sentences into Discourse*, University of Tübingen, 7–8 October 2019.

**2019.** “Expectation-based Language Processing in Minds and Machines”. Keynote talk,

*Workshop on Computational Cognition*, Institute of Cognitive Science, University of Os-nabrück, 1–2 October 2019.

**2019.** “Neural language models as psycholinguistic subjects: syntactic state and gram-matical dependency.” School of Informatics, University of Edinburgh, 25 March 2019.

**2019.** “Information-theoretic optimization in human language comprehension and pro-duction.” Keynote talk, Inaugural Colloquium SFB, Saarland University, 18 Feb 2019.

**2018.** “Expectation-based syntactic processing in humans and machines.” University of Washington Natural Language Processing group colloquium, 27 Nov 2018.

**2018.** “The noisy-channel theory of human language comprehension.” Colloquium given at Potsdam University, Department of Linguistics, 15 October 2018.

**2018.** “Probabilistic models of language comprehension and production.” Colloquium given for the Indian Institute of Science Education and Research (IISER), Bhopal, 21 Au-gust 2018.

**2018.** “Gender bias in preferred linguistic descriptions for expected events”.

Conference on Quantitative Approaches to Language Science, UC Irvine, 4–5 May 2018.

Department of Cognitive Sciences, Ecole Normale Supérieure, 4 October 2018.

Cognition, Brain, & Behavior seminar, Psychology Dept., Harvard University, 25 Oct 2018.

**2017.** “Statistical inference *by* and *about* the child learner in the emergence of syntactic productivity”. Society for Language Development, Annual Symposium: *Formal models of statistical inference*. Boston University, 2 November 2017.

**2017.** “Explicit belief and implicit expectations in language production and comprehen-sion”. Colloquium given at:

CSLI Workshop on *Bridging computational and psycholinguistic approaches to the study of meaning*, Stanford University, 17 February 2017.

Institute of Cognitive Science, Université du Québec à Montréal, 7 April 2017.

**2016–2017.** “Life at the edge of the lexicon: Productive knowledge and direct experience in language processing and acquisition”. Colloquium given at:

Cornell Linguistics Circle Colloquium, 22 September 2016.

Institute of Cognitive Science, Université du Québec à Montréal, 7 April 2017.

Cognitive Science Colloquium, University of Maryland, 5 October 2017.

**2016.** “Probabilistic models of human language comprehension.” Colloquium given at:

Cognitive Brownbag, University of Massachusetts, Amherst, 19 October 2016.

Cognitive Science Colloquium, University at Buffalo, 21 September 2016.

Computational Linguistics Colloquium, Brandeis University, 13 October 2017.

**2016.** “Negation in probabilistic models of language comprehension: structure, expecta-tions, and pragmatics.” Workshop on Negation, University of Geneva, 27 May 2016.

**2015.** “Bayesian pragmatics: Lexical uncertainty, compositionality, and the typology of conversational implicature”. Colloquium given at:

Natural Language Processing Colloquium, Penn State University, 2 December 2016.

Department of Linguistics, Cornell University, 23 September 2016.

Department of Linguistics, MIT, 23 September 2015.

Linguistics Program, Princeton University, 17 September 2015.

Google, 14 May 2015.

Department of Linguistics, University of Rochester, 8 May 2015.

**2015.** “Probabilistic models of human language comprehension”. University of Edinburgh Department of Informatics Colloquium, 29 May 2015.

**2015.** “Modeling the continuum of hypotheses spanning from nativism to empiricism”. Invited talk, Workshop on *Perspectives on Nativism*, University of Edinburgh, 21–22 May 2015.

**2015.** “Comprehenders as reverse engineers.” Colloquium given at the Department of Brain & Cognitive Sciences, University of Rochester, 6 May 2015.

**2015.** “Probabilistic models of language comprehension, production, and acquisition”. Special Seminar, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, 3 April 2015.

**2015.** “Not when—but how, and what?” Invited Speaker, CUNY Sentence Processing Conference, special session on *Exploring the (un)expected: The role of informativity in language production and comprehension*, 20 March 2015.

**2015.** “Expectation-based human language processing and understanding.” Departments of Linguistics and Psychology, UC Berkeley, 11 March 2015.

**2015.** “Probabilistic models of human language comprehension and production.” Cognitive Science Colloquium, Tufts University, 4 February 2015.

**2015.** “Is grammatical knowledge probabilistic? Theory and evidence”. Colloquium given at the Psycholinguistics Group Meeting, Stanford University, 29 January 2015.

**2015.** “Expectation-based language comprehension and production”. Psychology Department Colloquium, Stanford University, 28 January 2015.

**2014.** “Noisy-channel human sentence comprehension”. Invited talk given at the Workshop on The Continuous and the Discrete in Sentence Processing, 14–15 November 2014, Johns Hopkins University.

**2014.** “Probabilistic models of human language comprehension, production, and acquisition.” Cognitive Science/Computer Science Colloquium, Johns Hopkins University, 23 September 2014.

**2014.** “Compositionality in probabilistic semantics and pragmatics: Bayesian *and* and *or*”. UC San Diego Department of Cognitive Science Colloquium, 6 October 2014.

**2014.** “The Bayesian pragmatics of *and* and *or*”. Invited talk given 11 August 2014, at the Formal and Experimental Pragmatics Workshop, European Summer School in Logic, Language, and Information (ESSLLI), Tübingen, Germany.

**2014.** “Exemplars, rule-based generalization, and gradient grammatical knowledge in syntactic processing and acquisition”. Talk given at the Workshop on Gradience in Grammar, Center for the Study of Language and Information, Stanford University, 17–18 January 2014.

**2013–2014.** “Probabilistic knowledge in human language comprehension and production”. Colloquium presented at:

Department of Linguistics, UC Santa Barbara, 3 October 2013.

Department of Linguistics, University of Arizona, 24 January 2014.

**2013.** “The ecology of the binomial construction: processing, pragmatics, and efficiency.” Colloquium given at the Stanford Linguistics Department, 8 November 2013.

**2013.** “Probabilistic Knowledge and Uncertain Input in Human Sentence Processing.” Keynote Talk at the Seventeenth Conference on Natural Language Learning (CoNLL), 8–9 August 2013, Sofia, Bulgaria.

**2013.** “The internal structure of coordinate categories.” Presented at *Structure and Evidence in Linguistics*, 28–30 April 2013, Stanford, CA, in honor of Ivan A. Sag.

**2012–13.** “Probability and a Quantitative Science of Language.” Presented at:

Mayfest: *The Role of Computational Models in Linguistic Theory*, University of Maryland, 4–5 May 2012.

Department of Computational Linguistics and Phonetics, Saarland University, 13 May 2013.

**2012.** “Probabilistic Knowledge and Locality in Syntactic Comprehension.” Department of Linguistics, University of California at Santa Cruz, 12 October 2012.

**2010–2011.** “Probabilistic Knowledge and Uncertain Input in Rational Human Sentence Comprehension.” Presented at:

Plenary lecture series, Center for Language and Speech Processing, Johns Hopkins University, 30 June 2010

Computational Linguistics & Information Processing lecture series, Institute for Advanced Computer Studies, University of Maryland – College Park, 15 September 2010

Department of Cognitive Sciences, UC Irvine, 11 October 2010

Mind, Technology, & Society Lecture Series, UC Merced, 7 February 2011

Department of Linguistics, University of Massachusetts at Amherst, 16 September 2011

Institute for Research in Cognitive Science, University of Pennsylvania, 30 September 2011

Department of Cognitive, Linguistic, and Psychological Sciences, Brown University, 6 October 2011

Department of Linguistics, New York University, 21 October 2011

**2010.** “Probabilistic linguistic expectations, uncertain input, and implications for eye movements in reading.” Keynote speaker at the 4th China International Conference on Eye Movements, 24–26 May 2010, Tianjin Normal University, Tianjin, China.

**2009–2010.** “The Processing of Extraposed Structures in English.” Presented at:

Department of Linguistics, UC Berkeley, 5 April 2010

Department of Linguistics, UC San Diego, 12 October 2009

**2009–2010.** “Uncertain input in rational human sentence comprehension.” Presented at:

Stanford Psychology of Language Tea (SPLaT), Stanford University, 1 April 2010

Institute for Cognitive and Brain Sciences, UC Berkeley, 28 August 2009

Dalle Molle Institute for Artificial Intelligence, Lugano, Switzerland, 17 July 2009

**2008–2009.** “Noise and memory in rational human sentence comprehension.” Presented at:

Department of Psychology, New York University, 18 May 2009

Department of Linguistics, University of Southern California, 13 April 2009

Department of Psychology, California State University – Long Beach, 11 March 2009

Natural Language Processing Group, Information Sciences Institute, 23 January 2009

Department of Linguistics, Northwestern University, 5 December 2008

**2007–2008.** “Probabilistic knowledge in human language comprehension and production.” Presented at:

Department of Linguistics, UCLA, 11 February 2008

Department of Linguistics, Stanford University, 6 February 2008

Department of Brain & Cognitive Sciences, MIT, 4 February 2008

Department of Linguistics, Cornell University, 28 January 2008

IEEE Computational Intelligence Society, San Diego Chapter, 13 June 2007

**2007.** “Speakers optimize information density through syntactic reduction.” Invited speaker, Computational Linguistics Colloquium, University of Potsdam, 13 December 2007.

**2007.** “Modeling transactions in uncertainty in the online processing of verb-final structures.” Invited workshop presentation, *Theoretical approaches to the processing of verb-final constructions* workshop, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, 7–9 December 2007.

**2007.** “New Frontiers Opened by the Gradient View of Grammatical Knowledge.” Keynote address, *Eleventh meeting of the Texas Linguistic Society*, 9–10 November 2007.

**2007.** “Expectations, locality, and competition in human sentence comprehension.” Department of Brain & Cognitive Sciences, University of Rochester, April 18, 2007.

**2006.** “Information-density optimization in natural language grammars.” Presented at Language Evolution & Computation group meeting, University of Edinburgh, July 28, 2006.

**2005–2006.** “Expectation-based syntactic comprehension.” Presented at:

Human Communication Research Centre, University of Edinburgh, Oct. 21, 2005

Dept. of Computational Linguistics and Phonetics, Saarland University, Dec. 1, 2005

Research Centre for English and Applied Linguistics, Cambridge University, Jan. 24, 2006

Department of Psychology, University of Glasgow, Feb. 17, 2006

Department of Psychology, University of Dundee, Mar. 9, 2006

Department of Brain and Cognitive Science, MIT, Oct. 6, 2006

**2005.** “Expectation-based syntactic processing, information theory, and German word order.” Presented at:

Department of Linguistics, University of Ottawa, January 17, 2005

Department of Linguistics, University at Buffalo, February 8, 2005

Department of Linguistics, UC San Diego, February 14, 2005

Department of Linguistics, Ohio State University, February 18, 2005  
Cognitive Science Program, Indiana University, February 21, 2005  
Department of Linguistics, University of Texas – Austin, February 25, 2005  
Department of Linguistics, University of Washington, March 12, 2005

2004. “Deep dependencies from context-free statistical parsers.” Presented at:  
Knowledge Systems Area group, Palo Alto Research Center, March 22, 2005  
School of Informatics, University of Edinburgh, August 23, 2004

2004. “Predicate-argument structure from broad-coverage parse trees.” Presented at the  
Institute of Cognitive Science, University of Colorado, Boulder, March 12, 2004.

2004. “The Statistical Distribution of English Coordinate Noun Phrases.” Presented at:  
Department of Linguistics, Indiana University, February 22, 2005  
Department of Linguistics, University of Colorado, Boulder, March 11, 2004

#### PEER-REVIEWED PRESENTATIONS WITHOUT CONFERENCE PROCEEDINGS (PUBLISHED ABSTRACTS ONLY)

Zhan, M., & Levy, R. (2018c). Comparing theories of speaker choice using a model of classifier production in Mandarin Chinese [**Marr Prize for Best Student Paper**].

Zhan, M., & Levy, R. (2018a). Availability-based production, not Uniform Information Density, predicts Mandarin classifier choice.

Boyce, V., von der Malsburg, T., Poppels, T., & Levy, R. (2018). Implicit gender biases in the production and comprehension of pronominal references.

Aparicio, H., & Levy, R. (2018). Counting exceptions: Exception phrases and quantification.

Futrell, R., Gibson, E., & Levy, R. (2018). Generalizing dependency length minimization: Crosslinguistic corpus evidence for information locality.

von der Malsburg, T., Poppels, T., & Levy, R. (2017b). The president will give her inauguration speech: Explicit belief and implicit expectations in language production and comprehension.

Sheng, Y., Wu, F., & Levy, R. (2017). Positioning of determiner phrase affects mandarin relatives processing.

von der Malsburg, T., Poppels, T., & Levy, R. (2017a). The president gave her inauguration speech: Explicit belief and implicit expectations in language production and comprehension.

Zhan, M., Levy, R., & Kehler, A. (2017). Testing a Bayesian pronoun interpretation model with Chinese *ba* and *bei*.

Wittenberg, E., Barner, D., & Levy, R. (2016b). The roles of presupposition accommodation and syntax in computing adjectival scalar thresholds.

Zhan, M., Levy, R., & Kehler, A. (2016b). Bayesian pronoun interpretation in Mandarin Chinese.

Zhan, M., Levy, R., & Kehler, A. (2016c). Bayesian pronoun interpretation in Mandarin

Chinese.

Myslín, M., Levy, R., & Kehler, A. (2016). Comprehenders infer influences of discourse intent and speaker knowledge state on linguistic form.

Myslín, M., Morgan, E., & Levy, R. (2016). Comprehenders reason about competing causal sources of binomial ordering.

Zhan, M., Levy, R., & Kehler, A. (2016d). Bayesian pronoun interpretation in Mandarin Chinese.

Morgan, E., & Levy, R. (2016b). Frequency-(in)dependent regularization in language production and cultural transmission.

Poppels, T., & Levy, R. (2016a). Resolving quantity and informativeness implicature in indefinite reference.

Wittenberg, E., Barner, D., & Levy, R. (2016a). Inferring individuals' scalar thresholds: What counts as tall for you?

Morgan, E., & Levy, R. (2016d). Productive knowledge and item-specific experience trade off gradiently and rationally.

Wittenberg, E., & Levy, R. (2016). If you want a quick hug, make it count: How grammar affects estimated event durations.

Poppels, T., & Levy, R. (2016b). Resolving quantity and informativeness implicature in indefinite reference.

Poppels, T., & Levy, R. (2016c). Structure-sensitive noise inference: Comprehenders expect exchange errors.

Wittenberg, E., & Levy, R. (2015). If you want a quick hug, make it count: How grammar affects estimated event durations.

Poppels, T., & Levy, R. (2015b). Resolving quantity and informativeness implicature in indefinite reference.

Bushong, W., Morgan, E., Yen, M., & Levy, R. (2015). Holistic and compositional representations in multiword expressions.

von der Malsburg, T., Vasishth, S., & Levy, R. (2015). The impact of reading modality on sentence comprehension.

Morgan, E., & Levy, R. (2015c). Productive knowledge and direct experience trade off gradiently and rationally in processing binomial expressions.

Morgan, E., & Levy, R. (2015a). Generative and item-specific knowledge jointly determine language structure.

Poppels, T., & Levy, R. (2015d). Structure-sensitive noise inference: Comprehenders expect exchange errors.

Poppels, T., & Levy, R. (2015c). Resolving quantity and informativeness implicature in indefinite reference.

Muhlstein, L., Potts, C., Frank, M. C., & Levy, R. (2015). Pragmatic coordination on context via definite reference.

von der Malsburg, T., Vasishth, S., Metzner, P., & Levy, R. (2015). How presentation modality influences reading comprehension.



- Myslín, M., & Levy, R. (2015b). Comprehenders infer interaction between meaning intent and grammatical probability.
- Levy, R. (2015). Grammatical knowledge is fundamentally probabilistic.
- Myslín, M., & Levy, R. (2015c). Comprehenders infer interaction between meaning intent and grammatical probability.
- Levy, R., & Potts, C. (2015). Communicating in language, and about language, using disjunction.
- Doyle, G., Bicknell, K., & Levy, R. (2014a). Learning constraint violations directly from data: An emergentist model of phonology.
- Pajak, B., Piccinini, P., & Levy, R. (2014). A model of generalization in distributional learning of phonetic categories.
- Pajak, B., Bicknell, K., & Levy, R. (2013b). A computational model of generalization in phonetic category learning.
- Levy, R., Bergen, L., & Goodman, N. D. (2013). Roses and flowers: An informativeness implicature in probabilistic pragmatics [Presented at the ESSLLI 2013 Workshop on Bayesian Natural Language Semantics and Pragmatics, 5–9 August 2013, Düsseldorf, Germany].
- Pajak, B., Bicknell, K., & Levy, R. (2013a). A computational model of generalization in distributional learning: The role of phonetic variability across segment classes.
- Morgan, E., & Levy, R. (2013). Direct experience versus abstract knowledge in linguistic processing.
- 2013.** Klinton Bicknell and Roger Levy. “A rational account of regressions in syntactically complex sentences”. Poster presentation given at the 2013 CUNY Sentence Processing conference, University of South Carolina, 21–23 March 2013.
- 2013.** Mark Myslín and Roger Levy. “Expectation adaptation for clustering of syntactic structures”. Poster presentation given at the 2013 CUNY Sentence Processing conference, University of South Carolina, 21–23 March 2013.
- 2013.** Bożena Pajak and Roger Levy. “Distributional learning of non-native phonetic categories: the role of talker variability.” Oral presentation, Annual Meeting of the Linguistic Society of America, 3–6 January 2013, Boston, MA.
- 2013.** Mark Myslín and Roger Levy. “Codeswitching and predictability of meaning in discourse.” Poster presentation, Annual Meeting of the Linguistic Society of America, 3–6 January 2013, Boston, MA.
- 2012.** Mark Myslín and Roger Levy. “Information Density in Multilingual Codeswitching”. DGfS Workshop on Information Density & Linguistic Variation, Frankfurt am Main, Germany, 6–9 March 2012; and the 2012 Cognition and Language Workshop (CLaW), 14 April 2012, UC Santa Barbara.
- 2012.** Thomas Wasow, Rebecca Green, and Roger Levy. “Optional *to* and Prosody”. Poster presentation at the 2012 CUNY Sentence Processing conference, CUNY, 14–16 March 2012.
- 2012.** Klinton Bicknell and Roger Levy. “Effects of frequency, predictability, & length in a rational model of eye movements in reading”. Poster presentation at the 2012 CUNY

Sentence Processing conference, CUNY, 14–16 March 2012.

**2012.** Leon Bergen, Roger Levy, and Edward Gibson. “Verb Omission Errors: Evidence of Rational Noisy-channel Language Processing”. Poster presentation at the 2012 CUNY Sentence Processing conference, CUNY, 14–16 March 2012.

**2012.** Elizabeth Schotter, Klinton Bicknell, Roger Levy, and Keith Rayner. “The effects of task on frequency and predictability effects.” Poster presentation at the 2012 CUNY Sentence Processing conference, CUNY, 14–16 March 2012.

**2012.** Rebecca Colavin, Sharon Rose, and Roger Levy. “Under-representation and word-acceptability in Amharic: evidence from a judgment task”. Oral presentation at the Organized Session on An Introduction to Ethiosemitic Languages: Data and Theory, 86th Annual Meeting of the Linguistic Society of America, 5–8 January 2012, Portland, Oregon.

**2012.** Bożena Pająk, Sarah C. Creel, and Roger Levy. “Adults take advantage of fine phonetic detail when learning words in a novel language”. Oral presentation at the 86th Annual Meeting of the Linguistic Society of America, 5–8 January 2012, Portland, Oregon.

Levy, R., Fedorenko, E., Breen, M., & Gibson, E. (2011). Input uncertainty and cue redundancy in syntactic comprehension and adaptation.

**2011.** Roger Levy and Klinton Bicknell. “A rational model of eye-movement control in reading.” Oral presentation at the 16th European Conference on Eye Movements, 21–25 August 2011.

**2011.** Klinton Bicknell and Roger Levy. “Between-word regressive saccades to and from words of low predictability.” Oral presentation at the 16th European Conference on Eye Movements, 21–25 August 2011.

**2011.** Klinton Bicknell and Roger Levy. “Empirical Benchmarks for a rational model of eye movement control in reading.” 44th Annual Meeting of the Society for Mathematical Psychology, 16–18 July 2011.

**2011.** Emily Morgan, Roger Levy, Klinton Bicknell, Timothy Slattery and Keith Rayner. “Word Re-recognition Occurs During Second Pass Reading: Evidence from Eye-movements.” Poster presentation given at the 2011 CUNY Sentence Processing conference, Stanford University, 24–26 March 2011.

**2011.** Vera Demberg, Frank Keller, and Roger Levy. “Explaining the Relative Clause Asymmetry.” Poster presentation given at the 2011 CUNY Sentence Processing conference, Stanford University, 24–26 March 2011.

**2011.** Klinton Bicknell and Roger Levy. “Between-word regressions from words of low predictability and frequency.” Poster presentation given at the 2011 CUNY Sentence Processing conference, Stanford University, 24–26 March 2011.

**2011.** Nathaniel Smith and Roger Levy. “Comparing cloze versus corpus probabilities in self-paced reading.” Poster presentation given at the 2011 CUNY Sentence Processing conference, Stanford University, 24–26 March 2011.

**2011.** Gabriel Doyle and Roger Levy. “A log-linear model of language acquisition with multiple cues.” Oral presentation at the 85th Annual Meeting of the Linguistic Society of

America, Pittsburgh, PA, 6–9 January 2011.

Bicknell, K., & Levy, R. (2010a). Between-word regressions as part of rational reading.

Jaeger, T. F., Levy, R., & Ferreira, V. (2010). Context-sensitive information density affects syntactic production (even in the lab).

**2010.** Roger Levy. “On hallucinated garden paths.” Poster presentation given at the 2010 CUNY Sentence Processing conference, New York City, 18–20 March 2010.

**2010.** Nathaniel Smith and Roger Levy. “Fixation durations in first-pass reading reflect uncertainty about word identity.” Poster presentation given at the 2010 CUNY Sentence Processing conference, New York City, 18–20 March 2010.

**2010.** Nathaniel Smith and Roger Levy. “Bias in the Cloze task.” Poster presentation given at the 2010 CUNY Sentence Processing conference, New York City, 18–20 March 2010.

**2010.** Gabriel Doyle and Roger Levy. “A puzzle regarding relative pronoun choice: when frequency and difficulty disagree.” Poster presentation given at the 2010 CUNY Sentence Processing conference, New York City, 18–20 March 2010.

**2010.** Rebecca Colavin, Roger Levy, and Sharon Rose. “Modeling OCP-Place with the Maximum Entropy Phonotactic Learner.” Presented at the 2010 Computational Modelling of Sound Pattern Acquisition Workshop, University of Alberta, 13–14 February 2010.

**2010.** Roger Levy. “On hallucinated garden paths.” Paper presented at the 2010 annual meeting of the Linguistic Society of America, Baltimore, MD, 7–10 January 2010.

**2010.** Klinton Bicknell and Roger Levy. “Eye movements in reading as optimal responses to the contextualized structure of language.” Paper presented at the 2010 annual meeting of the Linguistic Society of America, Baltimore, MD, 7–10 January 2010.

**2009.** Roger Levy. “Online language processing as rational process model: garden-pathing and the particle filter.” Oral presentation given at the 31st annual meeting of the Cognitive Science Society, in the symposium *Rational Process Models*, July 29–August 1, 2009.

Levy, R., Bicknell, K., Slattery, T., & Rayner, K. (2009b). Readers maintain and act on uncertainty about past linguistic input: Evidence from eye movements.

**2009.** Roger Levy, Florencia Reali, and Thomas Griffiths. “Digging-in effects as rational limited-parallel sentence comprehension.” Poster presentation given at the 2009 CUNY sentence processing conference, 26 March 2009.

**2009.** Klinton Bicknell and Roger Levy. “A new model of local coherences as resulting from Bayesian belief update.” Poster presentation given at the 2009 CUNY sentence processing conference, 26 March 2009.

**2009.** Harry Tily, Marie-Catherine de Marneffe, and Roger Levy. “Comprehension difficulty reflects an understanding of likely production errors.” Poster presentation given at the 2009 CUNY sentence processing conference, 27 March 2009.

**2009.** Roger Levy. “With uncertain input, rational sentence comprehension is good enough”. Paper presented at the 2009 annual meeting of the Linguistic Society of America, San Francisco, CA, 8–11 January 2009.

**2009.** Klinton Bicknell and Roger Levy. “An empirical investigation and new model of

local coherences". Paper presented at the 2009 annual meeting of the Linguistic Society of America, San Francisco, CA, 8–11 January 2009.

**2008.** Nathaniel Smith and Roger Levy. "Probabilistic Prediction and the Continuity of Language Comprehension." Presented at the 9th Conference on Conceptual Structure, Discourse, and Language (CSDL 9).

Levy, R. (2008b). A fully rational model of local-coherence effects: Modeling uncertainty about the linguistic input in sentence comprehension.

Smith, N. J., & Levy, R. (2008b). Surprisal as optimal behavior: A formal model and empirical investigation.

**2008.** Hannah Rohde, Roger Levy, and Andrew Kehler. "Implicit Causality Biases Influence Relative Clause Attachment." Poster presentation given at the 2008 CUNY sentence processing conference, 12–14 March 2008.

**2008.** Roger Levy, Edward Gibson, and Evelina Fedorenko. "Expectation-based processing of extraposed structures in English." Poster presentation given at the 2008 CUNY sentence processing conference, 12–14 March 2008.

**2008.** Roger Levy and Frank Keller. "Expectation and Memory in Processing of German Verb-final Clauses: Relativization Matters." Poster presentation given at the 2008 CUNY sentence processing conference, 12–14 March 2008.

**2008.** Klinton Bicknell, Vera Demberg, and Roger Levy. "Local coherences in the wild: An eye-tracking corpus study." Poster presentation given at the 2008 CUNY sentence processing conference, 12–14 March 2008.

**2008.** Hannah Rohde, Roger Levy, and Andrew Kehler. "Coherence-Driven Effects in Relative Clause Processing." Oral presentation at the 2008 annual meeting of the Linguistic Society of America, Chicago, IL, 3–6 January 2008.

**2008.** Gabriel Doyle and Roger Levy. "Mixed categories and gradient grammatical constraints." Poster presentation at the 2008 annual meeting of the Linguistic Society of America, Chicago, IL, 3–6 January 2008.

**2007.** Roger Levy, Evelina Fedorenko, and Edward Gibson. "The syntactic complexity of Russian relative clauses." Poster presentation given at *Interdisciplinary Approaches to Relative Clauses*, Cambridge University, September 2007.

Levy, R., Fedorenko, E., & Gibson, T. (2007). The syntactic complexity of Russian relative clauses.

**2007.** Roger Levy and Frank Keller. "Sentence position and time-course in expectation-based processing of final verbs." Poster presented at the 2007 CUNY sentence processing conference.

Demberg, V., Keller, F., & Levy, R. (2007). Eye-tracking evidence for frequency and integration cost effects in corpus data.

**2007.** Evelina Fedorenko and Roger Levy. "Information-structure and word-order in Russian sentence comprehension." Poster presented at the 2007 CUNY sentence processing conference.

**2006.** Roger Levy, Evelina Fedorenko, and Edward Gibson. "The syntactic complexity of Russian relative clauses." Poster presented at the 2006 Architectures and Mechanisms for

Language Processing (AMLaP) Conference.

- Jaeger, T. F., & Levy, R. (2006). The structural basis of probabilistic syntactic production.
- 2006.** Evelina Fedorenko and Roger Levy. "Information-structure and word-order in Russian sentence comprehension." Poster presented at the 2006 Architectures and Mechanisms for Language Processing (AMLaP) Conference.
- Jaeger, F. T., Levy, R., Wasow, T., & Orr, D. M. (2005). The absence of "that" is predictable if a relative clause is predictable.
- 2005.** "German word order and expectation-based syntactic processing." Poster presented at the 18th annual CUNY Sentence Processing Conference, March/April 2005.
- 2005.** "Processing difficulty in verb-final clauses matches syntactic expectations." Presented at the 2005 meeting of the Linguistic Society of America, January 2005.
- 2004.** "Quantifying syntactic discontinuity in natural language." Presented at the 40th annual meeting of the Chicago Linguistic Society.
- 2003.** David Oshima and Roger Levy. "Nouns with multiple classifiers and non-transitive information flow in Japanese." Presented at the Stanford Semantics Fest, March 2003.
- 2002.** "The Statistical Distribution of English Coordinate Noun Phrases: Parallelism and Weight Effects." Presented at the 31st annual meeting of *New Ways to Analyze Variation*, October 2002.
- 2002.** "Non-events and the aspect of locative *keep*." Presented at the Stanford Semantics Fest, March 2002.

## OTHER PRESENTATIONS

- 2015.** Discussant, workshop on "Competition in Linguistics", 12 July 2015, University of Chicago.
- 2010.** Workshop panelist, "The Role of Entropy in Language, Communication & Behavioral Sequencing", Santa Fe Institute, 14–16 June 2010.
- 2009.** "A brief and friendly introduction to multi-level models in psycholinguistics: conceptual background." Presented at the 2009 Pre-CUNY Workshop on Ordinary and Multilevel Models, 25 March 2009.
- 2008.** Panelist, CUNY Sentence Processing Conference special session, *Formal Models of Human Sentence Processing*, 14 March 2008.
- 2007.** Panelist, *Grammar Engineering across Frameworks* workshop, 13 July 2007.
- 2007.** "Logistic regression and model selection in investigating how speakers regulate information density in language use." Presented at the first UC San Diego workshop in statistics, biostatistics and bioinformatics: *Model selection and Statistical Learning*, 15 March 2007.

## TEACHING: UNIVERSITY COURSES

Taught at MIT

**Spring 2020.** 9.S916: Deep-learning and symbolic models of human language

- Spring 2020.** 9.19: Computational Psycholinguistics.
- Spring 2019.** 9.S913/24.954: Pragmatics in Linguistic Theory.
- Spring 2019.** 9.19: Computational Psycholinguistics.
- Spring 2018.** 9.S913/24.964: Learning and Linguistic Representations.
- Spring 2018.** 9.19: Computational Psycholinguistics.
- Spring 2017.** 9.19: Computational Psycholinguistics.
- Fall 2016.** 9.S956: Cooperation, Communication, and Pragmatics.
- Taught at UCSD [1xx=upper-division undergraduate, 2xx=graduate]:
- Fall 2015.** Linguistics 228: Probabilistic models of cognition (co-taught with Ed Vul, UCSD Psychology).
- Winter 2015.** Cognitive Science 200: Computational and Experimental Pragmatics.
- Winter 2015.** Linguistics 165: Computational Linguistics.
- Fall 2014.** Linguistics 247: Topics in Pragmatics (Bayesian and game-theoretic pragmatics).
- Fall 2014.** Linguistics 101: Introduction to the Study of Language.
- Spring 2013.** Linguistics 274: Computational Psycholinguistics.
- Winter 2013.** Linguistics 101: Introduction to the Study of Language.
- Winter 2013.** Linguistics 170: Psycholinguistics.
- Fall 2012.** Linguistics 251: Probabilistic Methods in Linguistics.
- Spring 2012.** Linguistics 252: Advanced Probabilistic Models of Language.
- Spring 2012.** Linguistics 170: Psycholinguistics.
- Fall 2010.** Linguistics 251: Probabilistic Methods in Linguistics.
- Fall 2010.** Linguistics 165: Computational Linguistics.
- Spring 2010.** Linguistics 170: Psycholinguistics.
- Winter 2010.** Linguistics 274: Computational Psycholinguistics.
- Fall 2009.** Linguistics 101: Introduction to the Study of Language.
- Spring 2009.** Linguistics 170: Psycholinguistics.
- Winter 2009.** Linguistics/Computer Science & Engineering 256: Statistical Natural Language Processing
- Fall 2008.** Linguistics 251: Probabilistic Methods in Linguistics.
- Fall 2008.** Linguistics 101: Introduction to the Study of Language.
- Winter 2008.** Linguistics/Computer Science & Engineering 256: Statistical Natural Language Processing.
- Winter 2008.** Linguistics 101: Introduction to the Study of Language.
- Fall 2007.** Linguistics 251: Probabilistic Methods in Linguistics.
- Spring 2007.** Linguistics 274: Computational Psycholinguistics.
- Fall 2006.** Linguistics 170: Psycholinguistics.
- Fall 2006.** Linguistics 101: Introduction to the Study of Language.
- Taught at Stanford [1xx=upper-division undergraduate, 2xx=graduate]:
- Winter 2005.** Linguistics 235: Quantitative and Probabilistic Explanation in Linguistics. Co-taught with Christopher Manning.
- Winter 2002.** Linguistics 130A: Introduction to Semantics and Pragmatics. Teaching assistant for Hana Filip.
- Spring 2001.** Computer Science 224n/Linguistics 237: Statistical Natural Language

Processing. Teaching assistant for Christopher Manning.

**Winter 2000.** Anthropological Sciences 5: Biology and Evolution of Language. Teaching assistant for James Fox.

## TEACHING: SPECIAL COURSES

**Fall 2018.** Probabilistic models of human language processing and acquisition. Four-course special lecture series as International Chair in Empirical Foundations of Linguistics, Paris Diderot University, September–October 2018.

**Summer 2015.** Advanced Statistical Modeling in  $\mathbb{R}$ , taught at the 2015 Institute of the Linguistic Society of America, July 2015.

**Summer 2015.** Computational Psycholinguistics, taught (jointly with Klinton Bicknell) at the 2015 Institute of the Linguistic Society of America, July 2015.

**Summer 2014.** Computational Psycholinguistics. Advanced course taught (jointly with Klinton Bicknell) at the 26th European Summer School in Logic, Language, and Information (ESSLLI), August 2014.

**Summer 2012.** Probabilistic models in the study of language. Introductory course taught at the 24th European Summer School in Logic, Language, and Information (ESSLLI), August 2012.

**Summer 2011.** Invited lecturer, UCLA Institute for Pure & Applied Mathematics Graduate Summer School: *Probabilistic Models of Cognition: The Mathematics of Mind*, July 2011.

**Summer 2011.** Computational Psycholinguistics, taught (jointly with T. Florian Jaeger) at the 2011 Institute of the Linguistic Society of America, University of Colorado at Boulder, July–August 2011.

**June 2010.** Computational Psycholinguistics. Tutorial given at the NAACL-HLT Conference, Los Angeles, CA, 1 June 2010.

**Summer 2009.** Computational Psycholinguistics. Advanced course taught at the 21st European Summer School in Logic, Language, and Information (ESSLLI), July 2009.

**December 2007.** Computational Psycholinguistics, graduate Blockseminar (intensive short course), University of Potsdam.

**Summer 2007.** Invited lecturer on Natural Language Modeling, UCLA Institute for Pure & Applied Mathematics Graduate Summer School: *Probabilistic Models of Cognition: The Mathematics of Mind*, July 2007.

**Summer 2007.** Computational Psycholinguistics, taught at the 2007 Institute of the Linguistic Society of America, Stanford University, July 2007.

**Summer 2006.** Probabilistic Methods in Computational Psycholinguistics. Advanced course taught at the 18th European Summer School in Logic, Language, and Information (ESSLLI), August 2006.

## PREDOCTORAL RESEARCH ASSISTANTSHIPS & EXPERIENCE

### Computational Linguistics

2002-2005

Research Assistant, Natural Language Processing Group, Department of Computer Science, Stanford University. Supervisor: Christopher Manning.

**Lexical Semantics****Summer 2002**

Visitor, Framenet and Embodied Construction Grammar projects. International Computer Science Institute, University of California at Berkeley.

**Evolutionary Anthropology****1997–1999**

Research student, Department of Anthropology, Faculty of Biology, University of Tokyo. Supervisor: Kenichi Aoki. Continued at Stanford University, Department of Anthropological Sciences, under Arthur Wolf.

**Minnesota Supercomputer Institute Summer Internship****1995**

Department of Chemical Engineering, University of Minnesota. Supervisor: Robert Tranquillo.

## OTHER PROFESSIONAL EXPERIENCE

**Consulting, Natural Language Processing****2006–**

Consultant to corporations & university research groups on natural language processing, including segmentation, stemming, morphological analysis, part-of-speech tagging, and parsing, for English, Chinese, German, Japanese, and Arabic.

**Linguistic Consultant, Inlight Software****2000–2002**

Worked on lexicon management, segmentation, stemming, morphological analysis, part-of-speech tagging, and named entity extraction in Chinese, Japanese, and Russian. Extensive experience with finite-state and statistical methods for these tasks.

**Translator****1996–2004**

Experienced in Chinese→English and Japanese→English freelance translation, in arts, social science, and medical domains.

## ADVISING &amp; MENTORSHIP

**Postdoctoral Mentees**

Victoria Fossum, UCSD Linguistics	2011–2012
→Software engineer, Google	
Titus von der Malsburg, UCSD Psychology and Linguistics	2014–2016
→Visiting Professor, Psycholinguistics & Neurolinguistics, Potsdam Univ.	2016–2020
→Tenure-track faculty, Institut für Linguistik, Universität Stuttgart	2020–
Eva Wittenberg, UCSD Center for Research in Language	2015–2016
→Assistant Professor, UCSD Linguistics	2016–
Richard Futrell, MIT BCS	2017–2018
→Assistant Professor, UC Irvine Language Science	2018–
Helena Aparicio, MIT BCS	2017–2020
→Assistant Professor, Cornell University Linguistics	2021–
Yevgeni Berzak, MIT BCS	2018–2021
→Senior Lecturer, Industrial Engineering and Management, Technion	2021–
Michael Henry Tessler, MIT BCS	2018–2021
→Research Scientist, DeepMind	2021–
Noga Zaslavsky, MIT BCS	2019–2023
→Assistant Professor, UC Irvine Language Science	2023–



Suman Maity, MIT BCS and Center for Research on Open & Equitable Scholarship (CREOS)	2021–2023
→Assistant Professor, Missouri University of Science & Technology Computer Science	2023–
Canaan Breiss, MIT BCS	2022–2023
→Assistant Professor, University of Southern California Linguistics	2023–
Stephan Meylan, MIT BCS	2019–

**Ph.D. Advisees**

Klinton Bicknell, UCSD Linguistics	<b>Graduated 2011</b>
→Postdoctoral researcher, UCSD Psychology	2011–2013
→Postdoctoral researcher, Rochester Brain & Cognitive Sciences	2013–2014
→Assistant Professor, Northwestern Linguistics	2014–
→Research Scientist, Duolingo	2018–
Nathaniel Smith, UCSD Cognitive Science	<b>Graduated 2011</b>
→Postdoctoral researcher, University of Edinburgh Informatics	2012–2015
→Computational Fellow, Berkeley Institute for Data Science	2015–
Bożena Pająk, UCSD Linguistics (co-chair with Eric Baković)	<b>Graduated 2012</b>
→Postdoctoral fellow, Rochester Brain & Cognitive Sciences	2012–2014
→Researcher and Lecturer, Northwestern University Linguistics	2014–2018
→Head of AI, Duolingo	2018–
Rebecca Colavin, UCSD Linguistics (co-chair with Sharon Rose)	<b>Graduated 2013</b>
Y. Albert Park, UCSD Computer Science & Engineering (CSE)	<b>Graduated 2013</b>
→Chief Research Engineer, LG Electronics	
Gabriel Doyle, UCSD Linguistics	<b>Graduated 2014</b>
→Postdoctoral researcher, Stanford Psychology	2014–2017
→Asst. Professor, San Diego State Univ., Ling. & Asian/Middle Eastern Languages	2017–
Anubha Kothari, Stanford Linguistics (Thomas Wasow co-chair)	<b>Graduated 2010</b>
→Facebook	
Emily Morgan, UCSD Linguistics	<b>Graduated 2016</b>
→Postdoctoral researcher, Tufts Psychology	2016–2018
→Assistant Professor, Dept. of Linguistics, UC Davis	2018–
Richard Futrell, MIT Brain & Cognitive Sciences	<b>Graduated 2017</b>
→Postdoctoral Researcher, MIT Brain & Cognitive Sciences	2017–2018
→Assistant Professor, Dept. of Language Science, UC Irvine	2018–
Till Poppels, UCSD Linguistics (co-chaired with Andrew Kehler)	<b>Graduated 2020</b>
→Postdoctoral researcher, Paris University Diderot	2021–
Meilin Zhan, UCSD Linguistics and MIT Brain & Cognitive Sciences	<b>Graduated 2020</b>
→Research Specialist, MIT Brain & Cognitive Sciences	2020
→Data Scientist, AirBnB	2020–
Peng Qian, MIT Brain & Cognitive Sciences	<b>Graduated 2022</b>
Ethan Wilcox, Harvard Linguistics (co-chair with Kathryn Davidson)	<b>Graduated 2022</b>
→Postdoctoral Researcher, ETH Zürich	
Matthias Hofer, MIT Brain & Cognitive Sciences	<b>Graduated 2023</b>

→Postdoctoral Researcher, MIT Brain & Cognitive Sciences

Jonathan Gauthier, MIT Brain & Cognitive Sciences	<b>Graduated 2023</b>
Jennifer Hu, MIT Brain & Cognitive Sciences	<b>Graduated 2023</b>
Tiwalayo Eisape, MIT Brain & Cognitive Sciences (joint with Yoon Kim)	<b>2020–present</b>
Carina Kauf, MIT Brain & Cognitive Sciences (joint with Evelina Fedorenko)	<b>2020–present</b>
Thomas Clark, MIT Brain & Cognitive Sciences (joint with Edward Gibson)	<b>2022–present</b>
Ben Lipkin, MIT Brain & Cognitive Sciences (joint with Evelina Fedorenko)	<b>2023–present</b>
Cedegao Zhang, MIT Brain & Cognitive Sciences (joint with Joshua Tenenbaum)	<b>2023–present</b>
Amani Maini-Kilaas, MIT Brain & Cognitive Sciences	<b>2024–present</b>

#### **Ph.D. Committees**

Jeremy K Boyd, UCSD Linguistics	<b>Graduated 2007</b>
Hannah Rohde, UCSD Linguistics	<b>Graduated 2008</b>
Laura Kertz, UCSD Linguistics	<b>Graduated 2010</b>
Harry Tily, Stanford Linguistics	<b>Graduated 2010</b>
Elizabeth Schotter, UCSD Psychology	<b>Graduated 2013</b>
Bernhard Angele, UCSD Psychology	<b>Graduated 2013</b>
Patrick Plummer, UCSD Psychology	<b>Graduated 2015</b>
Ross Metusalem, UCSD Cognitive Science	<b>Graduated 2015</b>
Kevin Smith, UCSD Psychology	<b>Graduated 2015</b>
Wen-Hsuan Chan, UCSD Cognitive Science	<b>Graduated 2016</b>
Gwendolyn Gillingham, UCSD Linguistics	<b>2012–</b>
Nick Gruberg, UCSD Psychology	<b>2013–</b>

#### **External Thesis Examinations**

Luke Maurits, PhD, Psychology, University of Adelaide	<b>2011</b>
Cyrus Shaoul, PhD, Psychology, University of Alberta	<b>2012</b>
Kristina Gulordava, PhD, Linguistics, University of Geneva	<b>2018</b>
Cum Laude Predicate Committee, Micha Heilbron, PhD, Radboud University	<b>2022</b>
External Examiner, Artur Kulmizev, PhD, Uppsala University	<b>2023</b>

#### **Comprehensive Paper Committees (excluding Ph.D. advisees)**

Kathryn Cooke, UCSD Linguistics	<b>2007</b>
Lucien Carroll, UCSD Linguistics	<b>2009</b>
Jamie Alexandre, UCSD Cognitive Science	<b>2009</b>
Dan Michel, UCSD Linguistics	<b>2009, 2010</b>
Chris Barkley, UCSD Linguistics	<b>2009</b>
Gwen Gillingham, UCSD Linguistics (co-chair)	<b>2010</b>
Carson Dance, UCSD Cognitive Science	<b>2011</b>
Gary Patterson, UCSD Linguistics	<b>2012</b>
Page Piccinini, UCSD Linguistics (chair)	<b>2013</b>
Scott Seyfarth, UCSD Linguistics (chair)	<b>2013</b>
Jasmeen Kanwal, UCSD Linguistics (co-chair)	<b>2013</b>

**Masters Degree Advisees**

Azadeh Monirabbassi, UCSD Computer Science & Engineering (co-chair with Gary Cottrell)	<b>Graduated 2008</b>
Randy West, UCSD CSE (co-chair with Gary Cottrell)	<b>Graduated 2011</b>
→Microsoft	
Vineet Kumar, UCSD CSE (co-chair with Charles Elkan)	<b>Graduated 2012</b>
→PhD program, UMass Computer Science	
Russell Horton, UCSD Linguistics	<b>Graduated 2012</b>
→Reverb Technologies, Inc.	
Anna Sinelnikova, MIT Electrical Engineering & Computer Science	<b>Graduated 2020</b>
Kinan Martin, MIT Computation & Cognition	<b>2022–2023</b>
Subha Nawer Pushpita, MIT Computation & Cognition	<b>2023–2024</b>

**Masters Degree Committees**

Matt Rodriguez, UCSD CSE	<b>Graduated 2009</b>
--------------------------	-----------------------

**Undergraduate Research Assistants (at UCSD)**

Heidi Laidemitt, Linguistics	<b>2007</b>
Margo Schwartz, Linguistics	<b>2007–2008</b>
Joel Roman, Cognitive Science	<b>2008</b>
Kenneth Dowling III, Linguistics (Eleanor Roosevelt College honors project)	<b>2008–2009</b>
Natalie Katz, Linguistics	<b>2008–2010</b>
Henry Lu, Math & Economics	<b>2009–2010</b>
Miriam Ayad, Physiology & Neuroscience	<b>2009–2010</b>
Andrew Izu, Linguistics	<b>2009–2010</b>
Elena Churilov, Linguistics & Psychology	<b>2010</b>
→PhD program in Psychology, SUNY–Stony Brook	
Emma Hendricks, Linguistics	<b>2010</b>
→PhD program in Education, Vanderbilt	
Maria Jones (née Sokolov), Linguistics	<b>2010–2012</b>
→Post-Baccalaureate in Communication Sciences & Disorders, Chapman University	
→PhD program in Education, UC Irvine	
Erin Bennett, Ling & Math	<b>2010–2011</b>
→Baggett Post-baccalaureate Fellow with Naomi Feldman (Maryland Linguistics)	
→Lab manager for Noah D. Goodman (Stanford Psychology)	
→PhD Program in Psychology, Stanford University	
Megha Ram, International Studies (Eleanor Roosevelt College honors project)	<b>2010–2011</b>
Tiffany Chiou, Biochemistry/Chemistry (Eleanor Roosevelt College honors project)	<b>2010–</b>
Daphne Tan, Economics (Eleanor Roosevelt College honors project)	<b>2011</b>
K. Michael Brooks, Linguistics	<b>2012–2013</b>
→PhD Program in Communication Sciences & Disorders, Northwestern University	

William Presant, Spanish Literature	2013
Melodie Yen, Linguistics & Psychology	2012–2014
→PhD Program in Linguistics, University of Arizona	
Agatha Ventura, Linguistics	2013–2014
Wednesday Bushong, Linguistics & Cognitive Science	2013–2015
→PhD Program in Brain & Cognitive Sciences, University of Rochester	
Bonnie Chinh, Linguistics & Cognitive Science	2013–2015
Abhishek Goyal, Computer Engineering	2014–2015
Hannah Campbell, Cognitive Science	2015
Miranda Clemmons, Cognitive Science	2015
Jake Prasad, Computer Science	2014–2015
Suhas Arehalli, Computer Science	2015–2016
→PhD program in Cognitive Science, Johns Hopkins University	
<b>Undergraduate Research Assistants (at MIT)</b>	
Veronica Boyce, Brain & Cognitive Sciences	2017–2019
→Research Associate, MIT Computational Psycholinguistics Lab	2019–2020
→PhD Program in Psychology, Stanford University	2020–
Aaron Fleischer, Brain & Cognitive Sciences	2018
Emma Majercak, Biological Engineering	2018
Margarita Misirpashayeva, Linguistics & Philosophy	2018–2019
Jennifer Yu, Brain & Cognitive Sciences	2018
Theodor Cucu, Linguistics & Philosophy	2018–19
Gordon Garrett, Electrical Engineering & Computer Science	2018
Brin Harper, Mathematics	2018–2019
Julia Wu, Electrical Engineering & Computer Science	2018
Katherine Xiao, Electrical Engineering & Computer Science	2018–2019
Karen Gu, Electrical Engineering & Computer Science	2018–2020
Jason Madeano, Electrical Engineering & Computer Science	2018–
Julia Chatterjee, Mechanical Engineering	2019
Jiaxing Liu, Biology	2019–
Dakota Thurman, Management	2019
Kevin Zayas, Electrical Engineering & Computer Science	2019
A R. Banks, Electrical Engineering & Computer Science	2019
Sophia Cheung, Mechanical Engineering	2019
Miguel Gomez-Garcia, Electrical Engineering & Computer Science	2019
Nikasha Patel, Electrical Engineering & Computer Science	2019
Silvia Cho, Biological Engineering	2019
Eric Hong, Electrical Engineering & Computer Science	2019
Katherine Liu, Brain & Cognitive Sciences (year 1)	2019
Lauren Schexnayder, Brain & Cognitive Sciences	2019
Arun Wongprommoon, Brain & Cognitive Sciences (year 1)	2019–2020
Beining Zhang, Electrical Engineering & Computer Science	2019–2020
Kristy Chang, Linguistics & Philosophy	2020–2021
Jamie Geng, Electrical Engineering & Computer Science	2020–2021

Siyi Lin, Brain & Cognitive Sciences (year 1)	2020–2021
Erin Shin, Brain & Cognitive Sciences (year 1)	2020–2021
Chelsea Ajunwa, Brain & Cognitive Sciences	2020–2021
Robert Chen, Brain & Cognitive Sciences (year 1)	2020–2021
Faduma Khalif, Electrical Engineering & Computer Science	2020
Mason Lykes, Linguistics & Philosophy	2020
Carl Joshua T. Quines, Brain & Cognitive Sciences (year 1)	2020
Kevin Shao, Brain & Cognitive Sciences (year 1)	2020
Pranali Vani, Brain & Cognitive Sciences (year 1)	2020–2021
Irene Zhou, Brain & Cognitive Sciences	2020–2021
PhD program in Psychology, Yale University	
Curtis Chen, Brain & Cognitive Sciences	2020–2022
→PhD student, University of Edinburgh	
Nicole Wong, MIT Brain & Cognitive Sciences	2021–present
Diego Ureña, MIT Brain & Cognitive Sciences	2023–present
Marisa Montione, MIT Brain & Cognitive Sciences	2023–present

## ACADEMIC SERVICE

### Grant proposal reviewing

Ad-hoc reviewer, two National Science Foundation panels	2023
NIH Language & Communication (LCOM) Study Section chartered member	2019–2023
Ad-hoc reviewer, one ESRC proposal	2018
Ad-hoc reviewer, two National Science Foundation panels	2018
NIH LCOM Study Section, temporary member	2017
Ad-hoc reviewer, one National Science Foundation panel	2017
NIH LCOM Study Section, temporary member	2016
Panelist, one National Science Foundation panel	2016
Ad-hoc reviewer, one National Science Foundation panel	2016
Ad-hoc reviewer, one National Science Foundation panel	2015
Ad-hoc reviewer, one National Science Foundation panel	2014
Member, NSF College of Reviewers, Perception/ Action/ Cognition	2013–
Panelist, one National Science Foundation panel	2013
Panelist, one National Science Foundation panel	2012
Ad-hoc reviewer, two National Science Foundation panels	2012
Panelist, one National Science Foundation panel	2011
Ad-hoc reviewer, two National Science Foundation panels	2010
Panelist, one National Science Foundation panel	2010
Ad-hoc reviewer, one National Science Foundation panel	2009
Ad-hoc reviewer, one National Science Foundation panel	2007

Panelist, two National Science Foundation panels 2007

### Editorial Work for Journals

Special Issue Editor on Cognitive Computational Neuroscience of Language, *Neurobiology of Language* 2023

Inaugural Associate Editor, *Glossa Psycholinguistics* 2021–

Editorial Board, *Open Mind* 2020–present

Associate Editor, *Language* 2017–2019

Consulting Editor, *Journal of Experimental Psychology: General* 2017–present

Founding Associate Editor, *Open Mind* 2016–2020

Standing Review Committee Member, *Transactions of the Association for Computational Linguistics* 2014–2015

Associate Editor, *Cognitive Science* 2013–2015

Editorial Board, *Linguistic Issues in Language Technology* 2007–present

### Service to Scholarly Societies

Member, Governing Board of the Cognitive Science Society; President of the Society in 2024–2025 2017–2026

### Conference & Workshop Organization

Conference Co-chair, Conference on Natural Language Learning (CoNLL) 2017, Vancouver, Canada

Co-organizer, Cognitive Modeling and Computational Linguistics (CMCL) 2013, Sofia, Bulgaria (collocated with ACL)

Co-organizer, Cognitive Modeling and Computational Linguistics (CMCL) 2012, Montreal (collocated with NAACL-HLT)

Faculty co-supervisor, North American Association for Computational Linguistics (NAACL)

Student Research Workshop 2012, Montreal

### Conference Area Chairs

Conference on Language Modeling (COLM) 2024

ACL-IJCNLP 2021 (Senior Area Chair, Linguistic Theories, Cognitive modeling and Psycholinguistics)

EACL 2021 (Area Chair, Linguistic Theories, Cognitive modeling and Psycholinguistics)

EMNLP 2020 (Senior Area Chair, Linguistic Theories, Cognitive Modeling and Psycholinguistics)

EMNLP 2018 (Morphology, Tagging, Parsing, Formal Linguistics and Psycholinguistics)

ACL 2013, 2016, 2017 (Cognitive Modeling and Psycholinguistics)

NIPS 2011

ACL 2010 (Psycholinguistics)

COLING 2010 (Cognitive Modeling)

### Program Committees

ACL 2018, Workshop on Relevance of Linguistic Structure in Neural Architectures for NLP

Cognitive Science Society, 2008, 2009, 2016, 2018, 2020, 2021

Semantics and Linguistic Theory (SALT), 2017, 2018, 2021

Annual Meeting of the European Chapter of the Association for Computational Linguistics (EACL), 2016  
Annual Conference of the Cognitive Science Society, 2016  
North American Summer School for Logic, Language, and Information (NASSLLI), 2014  
7th Workshop on Innovative Uses of NLP for Building Educational Applications, NAACL 2012  
DGfS 2012 Workshop on *Information Density and Linguistic Variation*  
Architectures and Mechanisms in Language Processing (AMLaP) Conference, 2011  
ACL Workshop on Cognitive Modeling and Computational Linguistics, 2010, 2011  
CUNY Sentence Processing Conference, 2009, 2010  
Quantitative Investigations in Theoretical Linguistics (QITL), 2006, 2008  
EMNLP 2006  
ACL/COLING Workshop on Multi-word Expressions, 2006  
Conference on Natural Language Learning (CoNLL), 2006, 2008, 2018  
International Conference on Computer Processing of Oriental Languages, 2006

#### At-large reviewing

**2024:** Society for Computation in Language (SCiL), *Language Acquisition*, *Nature Communications*, *Computational Linguistics*, *PNAS*  
**2023:** *PNAS*, *JEP:General*, *Scientific Reports*, *Glossa Psycholinguistics*, *Current Directions in Psychological Science*  
**2022:** *PNAS* ( $\times 2$ ), *Open Mind*, *Journal of Experimental Psychology: General*  
**2021:** *ICLR*, *CUNY Sentence Processing Conference*, *Semantics and Linguistic Theory (SALT)*, *NAACL-HLT*, *Cognitive Science* ( $\times 2$ ), *Proceedings of the National Academy of Sciences*, *Linguistics & Philosophy*, *Empirical Methods in Natural Language Processing (EMNLP)*  
Ethics Review  
**2020:** *CUNY Sentence Processing Conference*, *AMLaP-Asia*, *AMLaP*, *Journal of Memory and Language (JML;  $\times 2$ )*, *Journal of Semantics*, *Trends in Cognitive Sciences*,  
**2019:** *Annual Meeting of the Linguistic Society of America (LSA)*, *Psychological Review*, *CUNY Sentence Processing Conference*, *SALT*, *Proceedings of the National Academy of Sciences (PNAS)*  
**2018:** *CUNY Sentence Processing Conference*, *JML*, *Psychological Review*, *Architectures and Mechanisms in Language Processing conference (AMLaP)*, *Current Directions in Psychological Science* ( $\times 2$ ), *Journal of Experimental Psychology: General*, *Cognitive Science*, *Science*  
**2017:** *Annual Meeting of the Linguistic Society of America (LSA)*, *Cognitive Modeling and Computational Linguistics workshop (CMCL)*, *Cognitive Science*, *(JML ( $\times 2$ ))*, *Journal of Semantics*, *CUNY Sentence Processing Conference*, *Journal of Experimental Psychology: General*  
**2016:** *CUNY Sentence Processing Conference*, *Semantics and Linguistic Theory (SALT)*, *Linguistic Typology*, *International Journal of Speech-Language Pathology (IJSLLP)*, *EMNLP*, *JML* ( $\times 2$ ), *AMLaP*, *Language and Speech*, *Journal of Experimental Psychology: Learning, Memory, and Cognition (JEP:LMC)*, *Language*  
**2015:** *SALT*, *CUNY Sentence Processing Conference*, *Experimental Pragmatics Confer-*

ence (XPRAG), *Cognition*, *PNAS*, *IJSLP*, *JML*

**2014:** *ACL*, *Cognition* (×2), *JEP:LMC*, *PNAS*, *Philosophical Psychology*, *AMLaP*

**2013:** *CUNY Sentence Processing Conference*, *Cognition* (×4), *Cognitive Science*, *PLoS One*, *Language and Cognitive Processes*, *The 19th Amsterdam Colloquium*, *Transactions of the Association for Computational Linguistics*, *PNAS*

**2012:** *Computational Linguistics*, *Cognition* (×2), *Cognitive Science*, *ACL*, *CUNY Sentence Processing Conference*, *Cognitive Science Society Conference*, *Cambridge University Press*, *Psychological Science*, *Topics in Cognitive Science (TopiCS)*, *AMLaP*, *Cognitive Psychology*

**2011:** *Language*, *CUNY Sentence Processing Conference*, *West Coast Conference on Formal Linguistics (WCCFL)*, *Cognitive Science Society*, *English Language & Linguistics (ELL)*, *Journal of Experimental Psychology: General*, *Psychological Science*, *International Joint Conferences on Artificial Intelligence (IJCAI)*, *Experimental and Theoretical Advances in Prosody (ETAP)*, *Cognitive Linguistics*, *Cognition* (×2), *EMNLP*, *AMLaP*, *Linguistic Society of America (LSA) Annual Meeting*, *Input & Syntactic Acquisition/ Psychocomputational Models of Language Acquisition workshop*, *MIT Press*

**2010:** *Cognition* (×2), *Computational Linguistics*, *Dialogue & Discourse*, *Data Mining and Knowledge Discovery*, *Journal of Experimental Psychology: General*, *Journal of Memory & Language* (×2), *Psychological Science* (×2), *Psychonomic Bulletin & Review*, *Research on Language and Computation*, *Syntax*, *Cognitive Science Society*, *NIPS*, *AMLaP*

**2009:** *Attention, Perception, & Psychophysics*, *Cognition* (×3), *Cognitive Science* (×2), *Computational Linguistics*, *Cortex*, *Data Mining and Knowledge Discovery*, *Journal of Memory and Language* (×2), *Discourse Processes*, *Language & Cognitive Processes* (×2), *Natural Language Engineering*, *Syntax*, *WCCFL*, *NAACL/HLT*, *NIPS*, *LSA Annual Meeting*, *Oxford University Press*, *Computational Linguistics in The Netherlands*

**2008:** *Cognition* (×3), *Cognitive Science*, *Computational Linguistics*, *Language & Cognitive Processes* (×3), *Journal of Logic, Language, and Information*, *Memory & Cognition*, *Perception & Psychophysics*, *EMNLP*, *Conference on Neural Information Processing Systems (NIPS)*, *CUNY Sentence Processing Conference*, *Chicago Linguistic Society*

**2007:** *Cognition*, *Corpora*, *Language & Cognitive Processes*, *EMNLP-CoNLL*, *CUNY Sentence Processing Conference*, *AMLaP*, *HLT/NAACL*, *Chicago Linguistic Society*, *WECOL*

**2006:** *Cambridge Handbook on Computational Cognitive Modeling*, *Cognitive Science* (2 times), *CUNY Sentence Processing Conference*, *EACL*

**2005:** *Cognitive Science* (2 times), *HLT/EMNLP*, *ACL*, *Springer Text, Speech, and Language Technology series*

**2004:** *COLING*

#### **Institute Service, MIT**

Member, MIT Committee on the Library System	2017–present
Chair, MIT Committee on the Library System	2018–present
Core organizing team member, MIT Day of Action	2017, 2018

#### **Departmental Service, MIT**

Departmental representative to Institute Faculty Meetings	2019–present
BCS Graduate Affairs Committee	2016–present
First-year graduate advisor, MIT Brain & Cognitive Sciences	2016–present



- Computational faculty search committee, MIT Brain & Cognitive Sciences 2016–present
- Departmental Service, UC San Diego**
- |  |                      |
|--|----------------------|
| Research/Travel Committee  | 2015–2016            |
| Chair, Language Evolution and/or Development Search Committee        | 2014–2015            |
| Admissions Committee   | 2014–2015            |
| Phonetics Search Committee   | 2012–2013            |
| Chair, Colloquium Committee  | 2010–2013            |
| Academic Senate Representative, alternate                            | 2010–2011            |
| Academic Senate (alternate 2007–2008; main representative 2008–2009) | 2007–2009            |
| Curriculum committee   | 2007–2010            |
| External Relations committee (chair)                                 | 2007–2008, 2009–2010 |
| Colloquium committee   | 2006–2007            |
| Library committee  | 2006–2007            |
| Departmental space committee   | 2008–2009            |
- Departmental Service, Stanford Linguistics**
- |                                 |           |
|---------------------------------|-----------|
| Colloquium committee            | 2004–2005 |
| Library and computer committees | 2001–2003 |
- R-LANG mailing list** **2007–present**
- Founder (with Marco Baroni) and host of R-LANG mailing list, a forum for discussion of statistical modeling and analysis of language data, in R.
- Corpora Initiative** 2002–2004
- Co-leader with Florian Jaeger of Stanford University Linguistics Department initiative on improving departmental corpora and corpus-related tool resources.
- Symposium Organization** 1999
- Student organizer for Symposium on Molecular Anthropology: *Unraveling the Secrets of Human Genetic Variation*, Department of Anthropological Sciences, Stanford University, May 21, 1999.
- Other UCSD-local academic service**
- |  |                  |
|--|------------------|
| Official representative on UCSD’s Interdisciplinary Ph.D. Program in Cognitive Science Executive Committee for UCSD’s Linguistics Department | <b>2009–2016</b> |
| 2008 Fulbright graduate fellowship interview committee, UCSD campus  | <b>2008</b>      |
| Faculty co-advisor, <i>Alchemy</i> journal of translation (UCSD Departments of Literature & Linguistics)                                     | <b>2012–2016</b> |
| Interviewer, UCSD Shuttle Operations   | <b>2012</b>      |
| Invited faculty advisor, annual UCSD campus workshop for Assistant Professors applying to the NSF CAREER program                             | <b>2012</b>      |
- Other academic service (external)**
- |  |             |
|--|-------------|
| Language & Cognition Area Expert, ESSLLI Student Session   | <b>2014</b> |
| Participant, <i>Beyond the Ivory Tower: A Workshop for Scholars on Writing for the Public</i> , Northeastern University, 2–4 June 2017 |             |

## LANGUAGE PROFICIENCIES

English – native

Mandarin Chinese, Japanese, and Russian – fluent

Spanish – conversational fluency

German – advanced reading knowledge

French – advanced beginner

Vietnamese, Egyptian Arabic – beginner

Linguistic research experience with Arabic, English, French, German, Hindi, Japanese, Mandarin Chinese, Marathi, Polish, Russian, and Tsimane’

Experienced in Chinese→English and Japanese→English translation.