

## Roger Levy

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### RESEARCH INTERESTS

My research focuses on theoretical and applied questions in the processing and acquisition of natural language. Inherently, 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? 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

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

### EDUCATION

<b>Stanford University</b> , Ph.D. in Linguistics Dissertation Title: <i>Probabilistic Models of Word Order and Syntactic Discontinuity</i> Committee: Christopher Manning (chair), Dan Jurafsky, Ivan Sag, Tom Wasow	2005
<b>Stanford University</b> , M.S. in Anthropological Sciences Thesis Title: <i>Evolution of Inbreeding Avoidance</i> Advisor: Arthur Wolf	2002
<b>University of Tokyo</b> , Research Student in Biological Anthropology Advisor: Kenichi Aoki	1997–1998
<b>Inter-University Program for Chinese Language Study</b> Fulbright Fellow Taipei, Taiwan (Stanford Center)	1996–1997
<b>University of Arizona</b> , B.S. in Mathematics Magna cum Laude (Minor: Physics)	1996

## HONORS AND AWARDS

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
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

## BOOKS

**In progress.** Roger Levy. *Probabilistic Models in the Study of Language*. Accepted for publication by MIT Press.

## PAPERS UNDER REVISION, UNDER REVIEW, OR IN PREPARATION

**Under review.** Eva Wittenberg & Roger Levy. *If you want a quick kiss, make it count: how choice of syntactic construction affects event construal*. Manuscript of 26 August 2015.

**Under review.** Leon Bergen, Roger Levy, & Noah Goodman. *Pragmatic reasoning through semantic inference*. Manuscript of 21 October 2015.

**Under review.** Bożena Pająk, Sarah C. Creel, & Roger Levy. *Difficulty in learning similar-sounding words: a developmental stage or a general property of learning?* Manuscript of 28 Nov 2015.

**Under review.** Edward Gibson, Kyle Mahowald, Roger Levy, & Steven T. Piantadosi. *Erroneous analyses drive the reported reading time effects in Hackl, Koster-Hale & Varvoutis (2012)*. Resubmission under review at Journal of Semantics.

**Under review.** Julian Jara-Ettinger, Steve Piantadosi, Elizabeth S. Spelke, Roger Levy, & Edward Gibson. *Mastery of the logic of cardinality is not the result of mastery of counting: evidence from the Tsimane' of Bolivia*.

**Under review.** Emily Morgan & Roger Levy. *Direct experience and abstract knowledge in*

*linguistic processing*. Manuscript of 30 September 2015.

**Under revision.** Edward Gibson, Steven T. Piantadosi, Julian Jara-Ettinger, & Roger Levy. *Computerized experiments may underestimate cognitive abilities in non-industrialized populations*. Manuscript of 2 December 2014, under revision.

**Under revision.** Mallorie Leinenger, Mark Myślín, Keith Rayner, & Roger Levy. *Do resource constraints affect lexical processing? Evidence from eye movements*.

**In preparation.** Roger Levy. *Why grammar is probabilistic*.

**In preparation.** Roger Levy. *On hallucinated garden paths*.

**In preparation.** Klinton Bicknell, Emily Higgins, Roger Levy, & Keith Rayner. *Ongoing linguistic processing determines precise eye movement targets in reading*.

## REFEREED JOURNAL ARTICLES

**In press.** Mark Myślín & Roger Levy. Codeswitching and predictability of meaning in discourse. *Language*.

**In press.** Christopher Potts, Daniel Lassiter, Roger Levy, & Michael C. Frank. Embedded implicatures as pragmatic inferences under compositional lexical uncertainty. *Journal of Semantics*.

**2015.** Mark Myślín & Roger Levy. Comprehension priming as rational expectation for repetition: evidence from syntactic processing. *Cognition*, 147, 29–56.

**2015.** Justine T. Kao, Roger Levy, & Noah D. Goodman. A computational model of linguistic humor in puns. *Cognitive Science*.

**2014.** Bożena Pająk & Roger Levy. The role of abstraction in non-native speech perception. *Journal of Phonetics*, 46, 147–160.

**2014.** Jose Costa Pereira, Emanuele Coviello, Gabriel Doyle, Nikhil Rasiwasia, Gert Lanckriet, Roger Levy, & Nuno Vasconcelos. On the role of correlation and abstraction in cross-modal multimedia retrieval. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 36(3), 521–535.

**2014.** Elizabeth R. Schotter, Klinton Bicknell, Ian Howard, Roger Levy, & Keith Rayner. Task effects reveal cognitive flexibility responding to frequency and predictability: evidence from eye movements in reading and proofreading. *Cognition*, 131(1), 1–27.

**2013.** Roger Levy, Evelina Fedorenko, & Edward Gibson. The syntactic complexity of Russian relative clauses. *Journal of Memory and Language*, 69(4), 461–495.

**2013.** Nathaniel J. Smith & Roger Levy. The effect of word predictability on reading time is logarithmic. *Cognition*, 128(3), 302–319.

**2013.** Roger Levy & Edward Gibson. Surprisal, the PDC, and the primary locus of processing difficulty in relative clauses. *Frontiers in Psychology*, 4(229).

**2013.** Dale J. Barr, Roger Levy, Christoph Scheepers, & Harry J. Tily. Random effects structure for confirmatory hypothesis testing: keep it maximal. *Journal of Memory and Language*, 68(3), 255–278.

**2013.** Roger Levy & Frank Keller. Expectation and locality effects in German verb-final structures. *Journal of Memory and Language*, 68(2), 199–222.

- 2012.** Klinton Bicknell & Roger Levy. The utility of modeling word identification from visual input within models of eye movements in reading. *Visual Cognition*, 20(4–5), 422–456.
- 2012.** Roger Levy, Evelina Fedorenko, Mara Breen, & Ted Gibson. The processing of extraposed structures in English. *Cognition*, 122(1), 12–36.
- 2011.** Roger Levy & Hal Daumé III. 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.
- 2011.** Hannah Rohde, Roger Levy, & Andrew Kehler. Anticipating explanations in relative clause processing. *Cognition*, 118(3), 339–358.
- 2009.** Roger Levy, Klinton Bicknell, Tim Slattery, & Keith Rayner. 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.
- 2008.** Roger Levy. Expectation-based syntactic comprehension. *Cognition*, 106(3), 1126–1177.
- 2006.** Sarah Bunin Benor & Roger Levy. The chicken or the egg? A probabilistic analysis of English binomials. *Language*, 82(2), 233–278.

#### REFEREED CONFERENCE PROCEEDINGS PAPERS

- To appear.** Emily Morgan & Roger Levy. Frequency-dependent regularization in iterated learning. In *Proceedings of the 11th biennial Evolang conference*.
- To appear.** Till Poppels & Roger Levy. Resolving quantity and informativeness implicature in indefinite reference. In Willem Zuidema & Jakub Szymanik (Eds.), *Proceedings of the 2015 Amsterdam Colloquium: the Workshop on Reasoning in Natural Language*.
- 2015.** Emily Morgan & Roger Levy. Modeling idiosyncratic preferences: how generative knowledge and expression frequency jointly determine language structure. In *Proceedings of the 37th annual meeting of the Cognitive Science Society* (pp. 1649–1654).
- 2015.** Christopher Potts & Roger Levy. Negotiating lexical uncertainty and speaker expertise with disjunction. In *Proceedings of the 41st annual meeting of the Berkeley Linguistics Society*.
- To appear.** Roger Levy, Leon Bergen, & Noah D. Goodman. *Roses and flowers*: an informativeness implicature in probabilistic pragmatics. In *Proceedings of the 24th Conference on Semantics and Linguistic Theory*.
- 2014.** Gabriel Doyle, Klinton Bicknell, & Roger Levy. Nonparametric learning of phonological constraints in Optimality Theory. In *Proceedings of the 52nd annual meeting of the Association for Computational Linguistics* (pp. 1094–1103).
- 2013.** Justine Kao, Roger Levy, & Noah Goodman. The funny thing about incongruity: a computational model of humor in puns. In *Proceedings of the 35th annual meeting of the Cognitive Science Society* (pp. 728–733).
- 2013.** Klinton Bicknell, Emily Higgins, Roger Levy, & Keith Rayner. Evidence for cognitively controlled saccade targeting in reading. In *Proceedings of the 35th annual meeting of*

*the Cognitive Science Society* (pp. 197–202).

**2013.** Stephan Meylan, Michael C. Frank, & Roger Levy. Modeling the development of determiner productivity in children's early speech. In *Proceedings of the 35th annual meeting of the Cognitive Science Society* (pp. 3032–3037).

**2013.** Gabriel Doyle & Roger Levy. Combining multiple information types in Bayesian word segmentation. In *Proceedings of the 2013 conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies* (pp. 117–126).

**2012.** Klinton Bicknell & Roger Levy. Word predictability and frequency effects in a rational model of reading. In *Proceedings of the 34th annual meeting of the Cognitive Science Society* (pp. 126–131). Sapporo, Japan.

**2012.** Leon Bergen, Noah D. Goodman, & Roger Levy. That's what she (could have) said: how alternative utterances affect language use. In *Proceedings of the 34th annual meeting of the Cognitive Science Society* (pp. 120–125).

**2012.** Leon Bergen, Roger Levy, & Edward Gibson. Verb omission errors: evidence of rational processing of noisy language inputs. In *Proceedings of the 34th annual meeting of the Cognitive Science Society* (pp. 1320–1325).

**2012.** Bożena Pająk, Sarah C. Creel, & Roger Levy. Can native-language perceptual bias facilitate learning words in a new language? In *Proceedings of the 34th annual meeting of the Cognitive Science Society* (pp. 2174–2179).

**2012.** Bożena Pająk & Roger Levy. Distributional learning of L2 phonological categories by listeners with different language backgrounds. In Alia Biller, Esther Chung, & Amelia Kimball (Eds.), *Proceedings of the 36th Boston University conference on language development* (pp. 400–413). Somerville, MA: Cascadilla Press.

**2011.** Y. Albert Park & Roger Levy. Automated whole sentence grammar correction using a noisy channel model. In *Proceedings of the 49th annual meeting of the Association for Computational Linguistics: Human Language Technologies* (pp. 934–944).

**2011.** Roger Levy. Integrating surprisal and uncertain-input models in online sentence comprehension: formal techniques and empirical results. In *Proceedings of the 49th annual meeting of the Association for Computational Linguistics: Human Language Technologies* (pp. 1055–1065).

**2011.** Bożena Pająk & Roger Levy. Phonological generalization from distributional evidence. In *Proceedings of the 33rd annual meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

**2011.** Nathaniel J. Smith & Roger Levy. Cloze but no cigar: the complex relationship between cloze, corpus, and subjective probabilities in language processing. In *Proceedings of the 33rd annual meeting of the Cognitive Science Society* (pp. 1637–1642).

**2010.** Nikhil Rasiwasia, Jose M. Costa Pereira, Emanuele Coviello, Gabriel Doyle, Gert R. G. Lanckriet, Roger Levy, & Nuno Vasconcelos. A new approach to cross-modal multimedia retrieval. In *Proceedings of the ACM international conference on multimedia* (pp. 251–260).

**2010.** Klinton Bicknell & Roger Levy. A rational model of eye movement control in reading. In *Proceedings of the 48th annual meeting of the Association for Computational Linguistics*

(pp. 1168–1178). Uppsala, Sweden.

**2010.** Klinton Bicknell & Roger Levy. Rational eye movements in reading combining uncertainty about previous words with contextual probability. In *Proceedings of the 32nd annual meeting of the Cognitive Science Society* (pp. 1142–1147).

**2010.** Nathaniel J. Smith & Roger Levy. Fixation durations in first-pass reading reflect uncertainty about word identity. In *Proceedings of the 32nd annual meeting of the Cognitive Science Society* (pp. 1313–1318).

**2010.** Nathaniel J. Smith, Wen-Hsuan Chan, & Roger Levy. Is perceptual acuity asymmetric in isolated word recognition? Evidence from an ideal-observer reverse-engineering approach. In *Proceedings of the 32nd annual meeting of the Cognitive Science Society* (pp. 1483–1488).

**2010.** Rebecca Colavin, Roger Levy, & Sharon Rose. Modeling OCP-Place with the Maximum Entropy Phonotactic Learner. In *Proceedings of the Chicago Linguistic Society*.

**2009.** Roger Levy, Florencia Reali, & Thomas L. Griffiths. Modeling the effects of memory on human online sentence processing with particle filters. In *Proceedings of the 22nd conference on Neural Information Processing Systems (NIPS)*.

**2009.** Klinton Bicknell & Roger Levy. A model of local coherence effects in human sentence processing as consequences of updates from bottom-up prior to posterior beliefs. In *Proceedings of the 10th annual meeting of the North American chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT) conference* (pp. 665–673). Boulder, Colorado, USA.

**2009.** Y. Albert Park & Roger Levy. Minimal-length linearizations for mildly context-sensitive dependency trees. In *Proceedings of the 10th annual meeting of the North American chapter of the Association for Computational Linguistics: Human Language Technologies (NAACL-HLT) conference* (pp. 335–343). Boulder, Colorado, USA.

**2009.** Klinton Bicknell, Roger Levy, & Vera Demberg. Correcting the incorrect: local coherence effects modeled with prior belief update. In *Proceedings of the 35th annual meeting of the Berkeley Linguistics Society* (pp. 13–24).

**2008.** Roger Levy. A noisy-channel model of rational human sentence comprehension under uncertain input. In *Proceedings of the 13th conference on Empirical Methods in Natural Language Processing* (pp. 234–243). Waikiki, Honolulu.

**2008.** Gabriel Doyle & Roger Levy. Environment prototypicality in syntactic alternation. In *Proceedings of the 34th annual meeting of the Berkeley Linguistics Society*. To appear.

**2008.** Nathaniel J. Smith & Roger Levy. Optimal processing times in reading: a formal model and empirical investigation. In *Proceedings of the 30th annual meeting of the Cognitive Science Society* (pp. 595–600). Washington, DC.

**2007.** Roger Levy & T. Florian Jaeger. Speakers optimize information density through syntactic reduction. In *Proceedings of the 20th conference on Neural Information Processing Systems (NIPS)*.

**2006.** Roger Levy & Galen Andrew. Tregex and Tsurgeon: tools for querying and manipulating tree data structures. In *Proceedings of the 2006 conference on Language Resources and Evaluation* (pp. 2231–2234).

- 2004.** Roger Levy & Christopher Manning. Deep dependencies from context-free statistical parsers: correcting the surface dependency approximation. In *Proceedings of the 42nd annual meeting of the Association for Computational Linguistics*.
- 2003.** Roger Levy & Christopher Manning. Is it harder to parse Chinese, or the Chinese Treebank? In *Proceedings of the 41st annual meeting of the Association for Computational Linguistics*.
- 2003.** Roger Levy & David Oshima. Non-transitive information flow in Japanese noun-classifier matching. In Stefan Müller (Ed.), *Proceedings of the 10th international conference on Head-Driven Phrase Structure Grammar* (pp. 257–277). Available online at <http://csli-publications.stanford.edu/HPSG/4/>. CSLI Publications.
- 2003.** Cynthia Thompson, Roger Levy, & Christopher Manning. A generative model for FrameNet semantic role labeling. In *Proceedings of the 14th European Conference on Machine Learning* (pp. 397–408).
- 2001.** Roger Levy & Carl Pollard. Coordination and neutralization in HPSG. In Frank Van Eynde, Lars Hellan, & Dorothee Beermann (Eds.), *Proceedings of the 8th international conference on Head-Driven Phrase Structure Grammar* (pp. 221–234). Available online at <http://csli-publications.stanford.edu/HPSG/2/>. CSLI Publications.

## REFEREED WORKSHOP PROCEEDINGS PAPERS

- 2013.** Bożena Pająk, Klinton Bicknell, & Roger Levy. A model of generalization in distributional learning of phonetic categories. In *Proceedings of the 4th annual workshop on Cognitive Modeling and Computational Linguistics* (pp. 11–20).
- 2012.** Victoria Fossum & Roger Levy. Sequential vs. hierarchical syntactic models of human incremental sentence processing. In *Proceedings of the 3rd annual workshop on Cognitive Modeling and Computational Linguistics* (pp. 61–69). Montreal, Quebec.
- 2012.** Klinton Bicknell & Roger Levy. Why long words take longer to read: the role of uncertainty about word length. In *Proceedings of the 3rd annual workshop on Cognitive Modeling and Computational Linguistics* (pp. 21–30).
- 2011.** Randy West, Y. Albert Park, & Roger Levy. Bilingual random walk models for automated grammar correction of ESL author-produced text. In *Proceedings of the workshop on Innovative Use of NLP for Building Educational Applications* (pp. 170–179).
- 2004.** Iddo Lev, Bill MacCartney, Christopher Manning, & Roger Levy. Solving logic puzzles: from robust processing to precise semantics. In *Proceedings of the 2nd workshop on Text Meaning and Interpretation* (pp. 9–16).

## BOOK CHAPTERS

- 2015.** Thomas Wasow, Roger Levy, Robin Melnick, Hanzhi Zhu, & Tom Juzek. Processing, prosody, and optional to. In Lyn Frazier & Edward Gibson (Eds.), *Explicit and implicit prosody in sentence processing* (pp. 133–158). Springer.
- 2013.** Roger Levy. Memory and surprisal in human sentence comprehension. In Roger P. G. van Gompel (Ed.), *Sentence processing* (pp. 78–114). Hove: Psychology Press.

**2002.** Kenichi Aoki, Daisuke Satoh, & Roger Levy. Theoretical aspects of brother–sister mating in birds and mammals. In Kenichi Aoki & Takeru Akazawa (Eds.), *Human mate choice and prehistoric marital networks* (pp. 5–15). Nichibunken, Kyoto.

## TECHNICAL REPORTS

**2006.** Owen Rambow, David Chiang, Mona Diab, Nizar Habash, Rebecca Hwa, Khalil Sima'an, Vincent Lacey, Roger Levy, Carol Nichols, & Safiullah Shareef. *Parsing Arabic dialects*. Johns Hopkins University.

## MISCELLANEOUS PUBLICATIONS

**2011.** Roger Levy. 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

**2015–2018.** 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 (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

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

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 (ESLLI), 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)

**2016.** Emily Morgan & Roger Levy. Productive knowledge and item-specific experience trade off gradiently and rationally. Oral presentation at the Annual Meeting of the Linguistic Society of America, 7–10 January, Washington, DC.

- 2016.** Eva Wittenberg & Roger Levy. If you want a quick hug, make it count: how grammar affects estimated event durations. Poster presentation at the Annual Meeting of the Linguistic Society of America, 7–10 January, Washington, DC.
- 2016.** Till Poppels & Roger Levy. Resolving quantity and informativeness implicature in indefinite reference. Poster presentation at the Annual Meeting of the Linguistic Society of America, 7–10 January, Washington, DC.
- 2016.** Till Poppels & Roger Levy. Structure-sensitive noise inference: comprehenders expect exchange errors. Oral presentation at the Annual Meeting of the Linguistic Society of America, 7–10 January, Washington, DC.
- 2015.** Eva Wittenberg & Roger Levy. If you want a quick hug, make it count: how grammar affects estimated event durations. Oral presentation at the Architectures and Mechanisms in Language Processing Conference (AMLaP), 3–5 September 2015, Valletta, Malta.
- 2015.** Till Poppels & Roger Levy. Resolving quantity and informativeness implicature in indefinite reference. Oral presentation at the Architectures and Mechanisms in Language Processing Conference (AMLaP), 3–5 September 2015, Valletta, Malta.
- 2015.** Wednesday Bushong, Emily Morgan, Melodie Yen, & Roger Levy. Holistic and compositional representations in multiword expressions. Poster presentation at the Architectures and Mechanisms in Language Processing Conference (AMLaP), 3–5 September 2015, Valletta, Malta.
- 2015.** Titus von der Malsburg, Shravan Vasishth, & Roger Levy. The impact of reading modality on sentence comprehension. Poster presentation given at the Architectures and Mechanisms in Language Processing Conference (AMLaP), 3–5 September 2015, Valletta, Malta.
- 2015.** Emily Morgan & Roger Levy. Productive knowledge and direct experience trade off gradiently and rationally in processing binomial expressions. Poster presentation given at the Architectures and Mechanisms in Language Processing Conference (AMLaP), 3–5 September 2015, Valletta, Malta.
- 2015.** Emily Morgan & Roger Levy. Generative and item-specific knowledge jointly determine language structure. Poster presentation given at the Architectures and Mechanisms in Language Processing Conference (AMLaP), 3–5 September 2015, Valletta, Malta.
- 2015.** Till Poppels & Roger Levy. Structure-sensitive noise inference: comprehenders expect exchange errors. Poster presentation given at the Architectures and Mechanisms in Language Processing Conference (AMLaP), 3–5 September 2015, Valletta, Malta.
- 2015.** Till Poppels & Roger Levy. Resolving quantity and informativeness implicature in indefinite reference. Oral presentation at Experimental Pragmatics 2015, 16–18 July 2015, Chicago, Illinois.
- 2015.** Larry Muhlstein, Christopher Potts, Michael C. Frank, & Roger Levy. Pragmatic coordination on context via definite reference. Poster presentation at Experimental Pragmatics 2015, 16–18 July 2015, Chicago, Illinois.
- 2015.** Titus von der Malsburg, Shravan Vasishth, Paul Metzner, & Roger Levy. How presentation modality influences reading comprehension. Poster presentation given at the 28th CUNY Conference on Human Sentence Processing, 19–21 March 2015, University

of Southern California.

**2015.** Mark Myslín & Roger Levy. Comprehenders infer interaction between meaning intent and grammatical probability. Poster presentation given at the 28th CUNY Conference on Human Sentence Processing, 19–21 March 2015, University of Southern California.

**2015.** Roger Levy. Grammatical knowledge is fundamentally probabilistic. Oral presentation given at the 89th Annual Meeting of the Linguistic Society of America, 8–11 January 2015, Portland, Oregon.

**2015.** Mark Myslín & Roger Levy. Comprehenders infer interaction between meaning intent and grammatical probability. Oral presentation given at the 89th Annual Meeting of the Linguistic Society of America, 8–11 January 2015.

**2015.** Roger Levy & Christopher Potts. Communicating in language, and about language, using disjunction. Poster presentation at the 89th Annual Meeting of the Linguistic Society of America, 8–11 January 2015, Portland, Oregon.

**2014.** Gabriel Doyle, Klinton Bicknell, & Roger Levy. Learning constraint violations directly from data: an emergentist model of phonology. Poster presented at the 39th Boston University Conference on Language Development.

**2014.** Bożena Pająk, Page Piccinini, & Roger Levy. A model of generalization in distributional learning of phonetic categories. Poster presented at the 168th Meeting of the Acoustical Society of America.

**2013.** Bożena Pająk, Klinton Bicknell, & Roger Levy. A computational model of generalization in phonetic category learning. Presented orally at the 38th Boston University Conference on Language Development, 1–3 November 2013.

**2013.** Roger Levy, Leon Bergen, & Noah D. Goodman. 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.

**2013.** Bożena Pająk, Klinton Bicknell, & Roger Levy. A computational model of generalization in distributional learning: the role of phonetic variability across segment classes. Talk given at the 2013 Linguistic Society of America Summer Institute Workshop on *Variation in the Acquisition of Sound Systems*, Ann Arbor, Michigan, 28 June 2013.

**2013.** Emily Morgan & Roger Levy. Direct experience versus abstract knowledge in linguistic processing. Oral presentation at the 2013 CUNY Sentence Processing Conference, 21–23 March 2013.

**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 Pająk 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.

**2011.** Roger Levy, Evelina Fedorenko, Mara Breen, & Edward Gibson. Input uncertainty and cue redundancy in syntactic comprehension and adaptation. Oral presentation at the 2011 Architectures and Mechanisms in Language Processing (AMLaP) conference, 1–3 September 2011.

**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.
- 2010.** Klinton Bicknell & Roger Levy. Between-word regressions as part of rational reading. Oral presentation at the 2010 CUNY Sentence Processing conference, New York City, 18–20 March 2010.
- 2010.** T. Florian Jaeger, Roger Levy, & Victor Ferreira. Context-sensitive information density affects syntactic production (even in the lab). Oral presentation at the 2010 CUNY Sentence Processing conference, New York City, 18–20 March 2010.
- 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.
- 2009.** Roger Levy, Klinton Bicknell, Tim Slattery, & Keith Rayner. Readers maintain and act on uncertainty about past linguistic input: evidence from eye movements. Oral presentation at the 2009 CUNY Sentence Processing Conference.
- 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).
- 2008.** Roger Levy. A fully rational model of local-coherence effects: modeling uncertainty about the linguistic input in sentence comprehension. Oral presentation given at the 2008 CUNY sentence processing conference.
- 2008.** Nathaniel J. Smith & Roger Levy. Surprisal as optimal behavior: a formal model and empirical investigation. Oral presentation at the 2008 CUNY sentence processing conference, 12–14 March 2008.
- 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.
- 2007.** Roger Levy, Evelina Fedorenko, & Ted Gibson. The syntactic complexity of Russian relative clauses. Oral presentation at the 2007 CUNY sentence processing conference, La Jolla, CA.
- 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.
- 2007.** Vera Demberg, Frank Keller, & Roger Levy. Eye-tracking evidence for frequency and integration cost effects in corpus data. Oral presentation at the 20th CUNY sentence processing conference.
- 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.
- 2006.** T. Florian Jaeger & Roger Levy. The structural basis of probabilistic syntactic production. Oral presentation at AMLaP 2006.
- 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.
- 2005.** Florian T. Jaeger, Roger Levy, Thomas Wasow, & David M. Orr. The absence of "that" is predictable if a relative clause is predictable. Presented at the 2005 Architectures and Mechanisms for Language Processing (AMLaP) Conference.
- 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 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

- Summer 2015.** Advanced Statistical Modeling in 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 (ESSLI), 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, Inxight 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

### **Ph.D. Advisees**

Klinton Bicknell, UCSD Linguistics

**Graduated 2011**

→Postdoctoral researcher, UCSD Psychology

2011-2013

→Postdoctoral researcher, Rochester Brain & Cognitive Sciences	2013–2014
→Assistant Professor, Northwestern Linguistics	2014–
Nathaniel Smith, UCSD Cognitive Science	<b>Graduated 2011</b>
→Postdoctoral researcher, University of Edinburgh Informatics	2012–2015
→Computational Fellow, Berkeley Institute for Data Science informatics	2015–
Božena Pajak, 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	2014–2015
→Research Scientist, Duolingo	2015–
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–
Anubha Kothari, Stanford Linguistics (Thomas Wasow co-chair)	<b>Graduated 2010</b>
→Facebook	
Emily Morgan, UCSD Linguistics	<b>2009–present</b>
Mark Myslín, UCSD Linguistics	<b>2010–present</b>
Till Poppels, UCSD Linguistics	<b>2014–present</b>
Meilin Zhan, UCSD Linguistics	<b>2014–present</b>
<b>Ph.D. Committees</b>	
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>2013–2015</b>
Gwendolyn Gillingham, UCSD Linguistics	<b>2012–</b>
Ross Metusalem, UCSD Cognitive Science	<b>2012–</b>
Nick Gruberg, UCSD Psychology	<b>2013–</b>
Kevin Smith, UCSD Psychology	<b>2013–</b>
Gary Patterson, UCSD Linguistics	<b>2014–</b>
<b>External Thesis Examinations</b>	
Luke Maurits, PhD, Psychology, University of Adelaide	<b>2011</b>
Cyrus Shaoul, PhD, Psychology, University of Alberta	<b>2012</b>
<b>Comprehensive Paper Committees (excluding Ph.D. advisees)</b>	
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	2012
Page Piccinini, UCSD Linguistics (chair)	2013
Scott Seyfarth, UCSD Linguistics (chair)	2013
Jasmeen Kanwal, UCSD Linguistics (co-chair)	2013

**Masters Degree Advisees**

Azadeh Monirabbassi, UCSD Computer Science & Engineering (co-chair with Gary Cottrell)	Graduated 2008
Randy West, UCSD CSE (co-chair with Gary Cottrell)	Graduated 2011
→Microsoft	
Vineet Kumar, UCSD CSE (co-chair with Charles Elkan)	Graduated 2012
→PhD program, UMass Computer Science	
Russell Horton, UCSD Linguistics	Graduated 2012
→Reverb Technologies, Inc.	

**Masters Degree Committees**

Matt Rodriguez, UCSD CSE	Graduated 2009
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**Undergraduate Research Assistants (all at UCSD)**

Heidi Laidemitt, Linguistics	2007
Margo Schwartz, Linguistics	2007–2008
Joel Roman, Cognitive Science	2008
Kenneth Dowling III, Linguistics (Eleanor Roosevelt College honors project)	2008–2009
Natalie Katz, Linguistics	2008–2010
Henry Lu, Math & Economics	2009–2010
Miriam Ayad, Physiology & Neuroscience	2009–2010
Andrew Izu, Linguistics	2009–2010
Elena Churilov, Linguistics & Psychology	2010
→PhD program in Psychology, SUNY–Stony Brook	
Emma Hendricks, Linguistics	2010
→PhD program in Education, Vanderbilt	
Maria Jones (née Sokolov), Linguistics	2010–2012
→Post-Baccalaureate in Communication Sciences & Disorders, Chapman University	
→PhD program in Education, UC Irvine	
Erin Bennett, Ling & Math	2010–2011
→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)	2010–2011
Tiffany Chiou, Biochemistry/Chemistry (Eleanor Roosevelt College honors project)	2010–
Daphne Tan, Economics (Eleanor Roosevelt College honors project)	2011
K. Michael Brooks, Linguistics	2012–2013
→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–present
Suhas Arehalli, Computer Science	2015–present

## ACADEMIC SERVICE

### Grant proposal reviewing

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

Standing Review Committee Member, *Transactions of the Association for Computational Linguistics*, 2014–2015  
 Associate Editor, *Cognitive Science*, 2013–present  
 Editorial Board, *Linguistic Issues in Language Technology*, 2007—

### Workshop Organization

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

ACL 2013 (Cognitive Modeling and Psycholinguistics)  
 NIPS 2011  
 ACL 2010 (Psycholinguistics)  
 COLING 2010 (Cognitive Modeling)

### Program Committees

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  
Cognitive Science Society, 2008, 2009  
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  
International Conference on Computer Processing of Oriental Languages, 2006

### At-large reviewing

**2016:** CUNY Sentence Processing Conference, Semantics and Linguistic Theory (SALT)  
**2015:** SALT, CUNY Sentence Processing Conference, Experimental Pragmatics Conference (XPRAG), *Cognition*, *Proceedings of the National Academy of Sciences (PNAS)*  
**2014:** ACL, *Cognition* (×2), *Journal of Experimental Psychology: Learning, Memory, and Cognition (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

### Departmental Committees, 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 Committees, 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 academic service (UCSD-local)

Official representative on UCSD's Interdisciplinary Ph.D. Program in Cognitive Science Executive Committee for UCSD's Linguistics Department	2009–
2008 Fulbright graduate fellowship interview committee, UCSD campus	2008
Faculty co-advisor, <i>Alchemy</i> journal of translation (UCSD Departments of Literature & Linguistics)	2012–
Interviewer, UCSD Shuttle Operations	2012
Invited faculty advisor, annual UCSD campus workshop for Assistant Professors ap-	

plying to the NSF CAREER program	2012
<b>Other academic service (external)</b>	
Language & Cognition Area Expert, ESSLLI Student Session	2014

## LANGUAGE PROFICIENCIES

English – native

Mandarin Chinese, Japanese, and Russian – fluent

Spanish – conversational fluency

German – advanced reading knowledge

French – advanced beginner

Vietnamese, Egyptian Arabic – beginner

Research experience with Arabic, Hindi, Marathi, and Polish

Experienced in Chinese→English and Japanese→English translation.