Kyle Mahowald

Ph.D. candidate in MIT's Brain and Cognitive Sciences department, Marshall Scholar, and crossword puzzle maker with interests in cognition, quantitative research methods, language sciences, and language arts.

CONTACT INFORMATION	Department of Brain and Cognitive Sciences Massachusetts Institute of Technology Building 46-3037 Vassar Street Cambridge, MA 02139 USA	mobile: (954) 401-1400 e-mail: kylemaho@mit.edu web: http://www.mit.edu/ kylemaho/

RESEARCH INTERESTS

Psycholinguistics, language as communication, statistical methods in psychology and linguistics, structure of the lexicon, computational linguistics, language neuro-imaging, historical English, information theory

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA USA

Ph.D. candidate, Brain and Cognitive Sciences (expected) 2011-16

- Advisor: Edward Gibson
- Committee: Edward Gibson, Nancy Kanwisher, Joshua Tenenbaum
- GPA: 5.0/5.0

University of Oxford, Oxford, England UK

M.Phil with Distinction, General Linguistics and Comparative Philology   2009-11
Marshall Scholar

- Thesis: *An LFG Approach to Old English Constituent Order* (with Distinction)
- Advisor: Mary Dalrymple
- Areas of Study (all with Distinction): history and structure of English, morphophonology, computational linguistics, general linguistics

Harvard University, Cambridge, MA USA

A.B. Summa Cum Laude, English   2005-09

- Thesis: *A Fairy's Tale: Queen Mab's Journey from Shakespeare to Modernity*
- Advisor: Marjorie Garber
- GPA: 3.96/4.00

FELLOWSHIPS AND GRANTS	
• NSF Doctoral Dissertation Improvement Grant ($12,000)	2015-16
• National Defense Science and Engineering Graduate Fellowship	2012-15
• Henry E. Singleton Fund Fellowship	2011-12
• Marshall Scholarship (1 of 40 selected nationally)	2009
• Harvard College Research Fellowship	2008
• National Merit Scholarship	2005-09
• Robert Byrd Scholarship	2005-09

AWARDS	
• Graduate Student Council Travel Grant	2014
• Angus MacDonald Award for Excellence in Undergraduate Teaching	2014
• AAAS/Science Program for Excellence in Science	2014
• CUNY 2013 Travel Award	2013
• Sigma Xi Scientific Research Society	2012
• Harvard Bowdoin Prize, $10,000 for Best Undergraduate Essay	2009
• Harvard Phi Beta Kappa Junior Electee, 1 of 24 elected as junior	2008
• John Harvard Scholar, top 5% in class	2006-09
• United States Presidential Scholar, 1 of 2 selected from each state	2005
• Youngest Sunday New York Times crossword constructor	2004

PUBLISHED
JOURNAL
ARTICLES

R. Futrell, K. Mahowald, E. Gibson. 2015. Large-Scale Evidence of Dependency Length Minimization in 37 Languages. *Proceedings of the National Academy of Sciences*. Published online before print August 3, 2015. doi: 10.1073/pnas.1502134112

R. Singh, E. Fedorenko, K. Mahowald, E. Gibson. 2015. Presupposition accommodation is costly only in implausible contexts. *Cognitive Science*. Published online before print July, 2015. doi: 10.1111/cogs.12260

E. Gibson, P. Jacobson, P. Graff, E. Fedorenko, K. Mahowald, S.T. Piantadosi. 2014. A pragmatic account of complexity in definite Antecedent-Contained-Deletion relative clauses. *Journal of Semantics*. Published online before print.

K. Mahowald and E. Gibson. 2013. Short, frequent words are more likely to appear genetically related by chance. Letter to *Proceedings of the National Academy of Sciences*.

K. Mahowald, E. Fedorenko, S.T. Piantadosi, and E. Gibson. 2013. Info/information theory: speakers choose shorter words in predictive contexts. *Cognition*, 126, 313-318.

K. Mahowald. 2012. A Naive Bayes Classifier for Shakespeare's second person pronoun. *Literary and Linguistic Computing*. 27 (1): 17-23. doi:10.1093/llc/fqr045

K. Mahowald. 2010. It may nat be: Chaucer, Derrida, and the Impossibility of the Gift. *Studies in the Age of Chaucer*. 32:129-150.

JOURNAL
ARTICLES
IN PROGRESS

ARTICLES UNDER REVISION OR UNDER SECOND REVIEW

K. Mahowald, A. James, R. Futrell, E. Gibson. In revision. A meta-analysis of syntactic priming. *Journal of Memory and Language*.

K. Mahowald, I. Dautriche, E. Gibson, S.T. Piantadosi. In revision. Word forms are structured for efficient use. *Cognitive Science*.

I. Dautriche, K. Mahowald, E. Gibson, S.T. Piantadosi. In revision. Wordform similarity increases with semantic similarity: an analysis of 101 languages. *Cognitive Science*.

K. Mahowald*, I. Dautriche*, E. Gibson, A. Christophe, S.T. Piantadosi. In revision. Lexical clustering in efficient language design. *Cognition*.

K. Mahowald, E. Fedorenko. In revision. Reliable individual-level neural markers of high-level language processing: A necessary precursor for relating neural variability to behavioral and genetic variability. *Neuroimage*.

K. Mahowald, P. Graff, J. Hartman, and E. Gibson. Under second review. SNAP Judgments: A Small N Acceptability Paradigm (SNAP) for Linguistic Acceptability Judgments. *Language*.

I. Blank, E. Fedorenko, Z. Balewski, and K. Mahowald. Under second review. Syntactic processing is distributed across the language network. *Neuroimage*.

S.T. Piantadosi, K. Mahowald, C. Kidd, R. Futrell, E. Gibson. In revision. Lexical prescriptivism reduces communicative efficiency. *Plos One*.

E. Gibson, K. Mahowald, S.T. Piantadosi. In revision. A re-analysis and replication attempt of Hackl, Koster-Hale, Varvoutis (2012). *Journal of Semantics*.

ARTICLES IN PREP

K. Mahowald, P. Isola, E. Fedorenko, A. Oliva, E. Gibson. In prep. An information-theoretic account of word memorability.

K. Mahowald, T.J. O'Donnell, and J.B. Tenenbaum. In prep. Quantifying availability through linguistic productivity.

CONFERENCE PROCEEDINGS	R. Futrell, K. Mahowald, E. Gibson. 2015. Quantifying Word Order Freedom in Dependency Corpora. Proceedings of *Depling 2015*.
	K. Mahowald. 2011. An LFG Account of Word Order Freezing. In M. Butt and T. H. King, eds., Proceedings of the LFG11 Conference. Hong Kong: CSLI Publications: http://www-csli.stanford.edu/publications.
THESES	K. Mahowald. 2011. An LFG Approach to Old English. Master's thesis. Oxford University.
	K. Mahowald. 2009. A Fairy's Tale: Queen Mab's Journey from Shakespeare to Modernity. Harvard University.
REFEREED PRESENTATIONS	K. Mahowald, I. Dautriche, E. Gibson, A. Christophe, E. Gibson. 2014. Efficient phonological clustering in the mental lexicon.Ninth International Conference on the Mental Lexicon. Niagara-on-the-Lake, Ontario, Canada. September 30-October 2, 2014.
	I. Dautriche, K. Mahowald, E. Gibson, A. Christophe, E. Gibson. 2014. Lexical clustering in efficient language design. AMLaP 2014 (Architectures and Mechanisms for Language Processing). Edinburgh, UK. September 3-6, 2014.
	K. Mahowald, P. Graff, J. Hartman, E. Gibson. 2014. SNAP Judgments: Small N Acceptability Paradigm (SNAP) for linguistic judgments. AMLaP 2014 (Architectures and Mechanisms for Language Processing). Edinburgh, UK. September 3-6, 2014.
	K. Mahowald, A. Jacobs, A. Fahimipour, M. Kleiman-Weiner. 2013. Measure for Measure: Quantifying Shakespearean Drama. Links 2013. MIT Media Lab. July 22–23, 2013.
	K. Mahowald. 2011. An LFG Account of Word Order Freezing. Sixteenth International LFG Conference. Hong Kong. July 16–19, 2011.
REFEREED POSTERS	K. Mahowald, M. Kline, E. Fedorenko, E. Gibson. 2015. Informativity and efficient compression of sentences. Annual CUNY Conference on Human Sentence Processing, CUNY 2015. Los Angeles, CA. March 19-21, 2014.
	K. Mahowald, S.T. Piantadosi, M. Alper, E. Gibson.. 2015. Lexical items are privileged slots for meaning. Annual CUNY Conference on Human Sentence Processing, CUNY 2015. Los Angeles, CA. March 19-21, 2014.
	R. Futrell, K. Mahowald, E. Gibson. 2014. CLIQS: Cross-Linguistic Investigations in Quantitative Syntax. AMLaP 2014 (Architectures and Mechanisms for Language Processing). Edinburgh, UK. September 3-6, 2014.
	K. Mahowald, P. Isola, E. Fedorenko, A. Oliva, E. Gibson. 2014. An information-theoretic account of word memorability. AMLaP 2014 (Architectures and Mechanisms for Language Processing). Edinburgh, UK. September 3-6, 2014.
	K. Mahowald, E. Fedorenko. Reliable individual-level neural markers of language activity. Neurobiology of Language 2014. Amsterdam. August 27-29, 2014.
	E. Gibson, P. Jacobson, P. Graff, K. Mahowald, E. Fedorenko, S.T. Piantadosi. Pragmatic influences on the processing of ACD relative clauses. 27th Annual CUNY Conference on Human Sentence Processing, CUNY 2014. Columbus, OH. March 13-15, 2014.
	R. Futrell, K. Mahowald, S.T. Piantadosi, E. Gibson. Efficient Communication Forwards and Backwards. 27th Annual CUNY Conference on Human Sentence Processing, CUNY 2014. Columbus, OH. March 13-15, 2014.
	K. Mahowald, S.T. Piantadosi, E. Gibson. 2013. Lexical clustering in efficient language design. 26th Annual CUNY Conference on Human Sentence Processing, CUNY 2013. Columbia, SC. March 22, 2013.

K. Mahowald, T.J. O'Donnell, and J.B. Tenenbaum. 2013. Filling in the blanks in morphological productivity: a word completion task. 26th Annual CUNY Conference on Human Sentence Processing, CUNY 2013. Columbia, SC. March 23, 2013.

K. Mahowald, E. Fedorenko, S.T. Piantadosi, E. Gibson. 2012. Info/information theory: speakers actively choose shorter word in predictive contexts. 25th Annual CUNY Conference on Human Sentence Processing, CUNY 2012. New York. March 16, 2012.

<div style="display:flex"><div style="min-width:150px">INVITED
PRESENTATIONS</div><div>

K. Mahowald. 2015. Four mini-talks in psycholinguistics. CogLunch. Department of Brain and Cognitive Sciences. MIT. May 12, 2015.

K. Mahowald. 2014. Efficient structure in the lexicon. Mini-Symposium on the Neural and Cognitive Mechanisms of Language. Department of Psychology. Harvard University. December 4, 2014.

K. Mahowald. 2014. Efficient lexical structure. Department of Brain and Cognitive Sciences. Invited Talk. University of Rochester. October 3, 2014.

K. Mahowald. 2014. Learning and organizational structure of the lexicon. Stanford Language and Cognition Lab Meeting. Stanford University. May 13, 2014.

K. Mahowald, A. Jacobs, A. Fahimipour, E. Pechenick, M. Kleiman-Weiner. 2013. Measure for Measure: Quantifying Shakespeare. Santa Fe Complex Systems Summer School. Santa Fe Institute. June 28, 2013.

K. Mahowald. 2013. Finding structure in the lexicon. CogLunch. MIT. April 9, 2013.

K. Mahowald. 2013. Efficient lexical design. Tedlab Lab Meeting. MIT. April 8, 2013.

M. Frank, K. Mahowald, and E. Gibson. 2012. Syntactic and lexical alternations in noisy environments. MIT Summer Research Program, 2012.

K. Mahowald. 2011. Computationally classifying the second person pronoun in Early Modern English. Tedlab Lab Meeting. MIT. October 4, 2011.

K. Mahowald. 2011. Word order freezing in Old English. Oxford Syntax Working Group. Oxford. February 23, 2011.

K. Mahowald. 2010. Verb clusters in Old English. 3rd South of England LFG Meeting. SOAS, London. October 23, 2010.
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<div style="display:flex"><div style="min-width:150px">TEACHING</div><div>

Massachusetts Institute of Technology

- Teaching assistant, MIT 9.59 Lab in Psycholinguistics   2014
  - Received perfect student evaluations.
  - Refined statistics curriculum developed in 2013.
  - Held regular lectures instructing students in R and statistics.
- Teaching assistant, MIT 9.59j Lab in Psycholinguistics   2013
  - Designed and taught data analysis section of lab course. Held regular lectures instructing students in R and statistics.
  - Helped students design, run, and analyze their own psycholinguistics experiments.
  - Won Angus McDonald Award for Undergraduate Teaching.
- Guest lecturer   2011-16
  - 'Language and information', MIT 9.012, Spring 2015
  - 'Sound Structure and Communication', MIT 9.012 Cognitive Science (graduate class), Spring 2013
  - 'Language and Information Theory', MIT 9.59j Lab in Psycholinguistics, Spring 2013
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- 'Introduction to Language', MIT 9.65 Cognitive Processes, Spring 2013
- Research supervisor   2011-
  - Supervised student for MIT Summer Research Program, 2012
  - Supervised ~ 5 students for UROP (MIT's undergraduate research program)
  - Instructed and advised students in research methods, experimental design, and writing.

SERVICES AND ORGANIZATIONS

Fellowship services
- Reader, Marshall Scholarship Selection Committee, Boston Region
- Member, MIT Distinguished Fellowship Committee
- Volunteer fellowships panelist, Harvard Office of Career Services

Invited reviewer
- *Literary and Linguistic Computing*,
- *Cogsci 2014*

Department
- 2012-2013 CogLunch Organizer for MIT Brain and Cognitive Sciences

NON-ACADEMIC POSITIONS

- Freelance puzzle construction, published in NYT, WSJ, LA Times, GAMES Magazine, Universal Press Syndicate, Chicago Tribune, etc., 2004-
- Spirit Airlines in-flight crossword constructor, 2004-2010
- Founder and President of Harvard College Crossword Society, 2007-2009
- Co-chair of Boston Crossword Tournament, over 200 participants, 2009
- Co-chair of Harvard Crossword Tournament, over 100 participants, 2009
- Treasurer of Harvard Lifestyle Improvement and Fitness Education, mentored inner-city students in fitness and health, 2007
- Peer Advising Fellow, mentored incoming freshmen, 2006-2007
- Assistant to New York Times crossword editor Will Shortz, 2006
- Research assistant, Advanced Medical Treatment Centers, 2005

COMPUTER EXPERTISE

R, Python, Stan (probabilistic modeling language), UNIX, Amazon Mechanical Turk, LaTeX

LANGUAGES

English (native), Spanish (good), French (basic), Middle English (reading), Old English (reading)

REFERENCES

Professor Edward Gibson
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Professor Steven T. Piantadosi
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