

Daniel Mirman

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RESEARCH INTERESTS

Speech comprehension, language processing, computational models of brain and behavior, perceptual organization.

TEACHING INTERESTS

Cognitive Neuroscience, Cognitive Science, Computational Modeling, Perception, Psycholinguistics, Statistics and Research Methods.

EDUCATION

2000-2005 Ph.D., Psychology (Cognitive Neuroscience), Carnegie Mellon University and Center for the Neural Basis of Cognition, Pittsburgh, PA.

1996-2000 B.A., *Magna Cum Laude*, Cornell University, Ithaca, NY.
Majors: Psychology, Chemistry. Concentration: Cognitive Science.

EMPLOYMENT

2005- Postdoctoral fellow. Department of Psychology, University of Connecticut, Storrs, CT and Haskins Laboratories, New Haven, CT.

2007-2008 Adjunct Professor. Department of Psychology, University of Connecticut.

2007 Statistical consultant. *Mastering Reading Instruction*, Haskins Laboratories.

TEACHING EXPERIENCE

2007 Psychology of Language, University of Connecticut.

2007-2008 Independent Study for Undergraduates, University of Connecticut.

2007 Matlab Tutorial, University of Connecticut.

2003 Perception, Carnegie Mellon University.

2001 Biological Foundations of Behavior (Teaching Assistant), Carnegie Mellon University.

2001 Research Methods in Cognitive Psychology (Teaching Assistant), Carnegie Mellon University.

GRANTS, HONORS, AND AWARDS

National Institute of Child Health and Human Development Postdoctoral NRSA, F32HD052364 (2006-2009).

National Institute on Deafness and Other Communication Disorders Predoctoral NRSA, F31DC006791 (2004-2005).

National Science Foundation Graduate Research Fellowship, Honorable Mention (2001).

National Institutes of Health Predoctoral Training in Basic Neuroscience Grant, T32NS07433 (2000-2002).

PUBLICATIONS

1. Published and In Press Articles

- Mirman, D.**, Dixon, J.A., and Magnuson, J.S. (in press). Statistical and computational models of the visual world paradigm: Growth curves and individual differences. *Journal of Memory and Language*.
- Mirman, D.** (in press). Mechanisms of semantic ambiguity resolution: Insights from speech perception. *Research on Language and Computation*.
- Mirman, D.**, Magnuson, J.S., Graf Estes, K., and Dixon, J.A. (2008). The link between statistical segmentation and word learning in adults. *Cognition*, 108(1), 271-280.
- Mirman, D.**, McClelland, J.L., Holt, L.L., and Magnuson, J.S. (2008). Effects of attention on the strength of lexical influences on speech perception: Behavioral experiments and computational mechanisms. *Cognitive Science*, 32(2), 398-417.
- Mirman, D.** and Magnuson, J.S. (2008). Attractor dynamics and semantic neighborhood density: Processing is slowed by near neighbors and speeded by distant neighbors. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 34(1), 65-79.
- Mirman, D.**, McClelland, J.L., and Holt, L.L. (2006). An interactive Hebbian account of lexically guided tuning of speech perception. *Psychonomic Bulletin & Review*, 13(6), 958-965.
- McClelland, J.L., **Mirman, D.**, and Holt, L.L. (2006). Are there interactive processes in speech perception? *Trends in Cognitive Sciences*, 10(8), 363-369.
- Mirman, D.**, McClelland, J.L., and Holt, L.L. (2005). Computational and behavioral investigations of lexically induced delays in phoneme recognition. *Journal of Memory and Language*, 52(3), 424-443.
- Mirman, D.**, Holt, L.L., and McClelland, J.L. (2004). Categorization and discrimination of non-speech sounds: differences between steady-state and rapidly-changing acoustic cues. *Journal of the Acoustical Society of America*, 116(2), 1198-1207.
- Mirman, D.** and Spivey, M. (2001). Retroactive interference in neural networks and in humans: the effect of pattern-based learning. *Connection Science*, 13(3), 257-275.

2. Manuscripts In Preparation and Under Review

- Mirman, D.** and Magnuson, J.S. (in prep). *Dynamics of activation of semantically similar concepts during spoken word recognition*.
- Magnuson, J.S., Strauss, T., Harris, H.D., and **Mirman, D.** (invited resubmission). *Interaction in spoken word recognition models: Feedback helps*.

3. Book Chapters, Commentaries, and Letters

- Magnuson, J.S., **Mirman, D.**, and Harris, H.D. (in press). Computational models of spoken word recognition. In M. Spivey, M. Joanisse, & K. McRae (Eds), *The Cambridge Handbook of Psycholinguistics*. Cambridge: Cambridge University Press.
- Mirman, D.**, McClelland, J.L., and Holt, L.L. (2006). Reply to McQueen *et al.*: Theoretical and empirical arguments support interactive processing. *Trends in Cognitive Sciences*, 10(12), 534.

4. Refereed Conference Proceedings

- Mirman, D.**, Magnuson, J.S., Strauss, T.J., and Dixon, J.A. (2008). Effect of global context on homophone ambiguity resolution. *Proceedings of the 30th Annual Cognitive Science Society Meeting*, in press.

- Mirman, D.** and Magnuson, J.S. (2006). The Impact of Semantic Neighborhood Density on Semantic Access. In *Proceedings of the 28th Annual Cognitive Science Society Meeting* (pp. 1823-1828), Mahwah, NJ: Lawrence Erlbaum Associates.
- Mirman, D.**, McClelland, J.L., and Holt, L.L. (2006). Attentional Modulation of Lexical Effects on Speech Perception: Computational and Behavioral Experiments. In *Proceedings of the 28th Annual Cognitive Science Society Meeting* (pp. 591-596), Mahwah, NJ: Lawrence Erlbaum Associates.

PRESENTATIONS

- Mirman, D.** (June, 2008). *Attractor dynamics account for contrasting effects of near and distant semantic neighbors*. Invited paper to be presented at the 18th Annual Meeting of the Canadian Society for Brain, Behaviour and Cognitive Science, London, Ontario, Canada.
- Mirman, D.**, Yee, E., Magnuson, J.S., and Blumstein, S. (April, 2008). *Statistical and Computational Investigations of the Time Course of Spoken Word Recognition in Aphasia*. Poster presented at the 2008 Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Magnuson, J.S. and **Mirman, D.** (November, 2007). *Neighborhood Effects in Word Recognition: It's Not Where You Live, It's How You Get Home*. Paper presented at the 48th Annual Meeting of the Psychonomic Society, Long Beach, CA.
- Mirman, D.**, Magnuson, J.S., Strauss, T.J., and Dixon, J.A. (November, 2007). *The time course of pragmatic context integration in homophone ambiguity resolution*. Poster presented at the 48th Annual Meeting of the Psychonomic Society, Long Beach CA.
- Magnuson, J.S., **Mirman, D.**, and Strauss, T. (August, 2007). *Why do neighbors speed visual word recognition but slow spoken word recognition?* Paper presented at the 13th Annual Conference on Architectures and Mechanisms for Language Processing, Turku, Finland.
- Mirman, D.** and Magnuson, J.S. (August, 2007). *Attractor dynamics and semantic neighborhood density: Processing is slowed by near neighbors and speeded by distant neighbors*. Paper presented at the 2nd UConn Workshop on Cognition and Dynamics, Storrs, CT.
- Mirman, D.**, Magnuson, J.S., Graf Estes, K., and Dixon, J.A. (June, 2007). *Linking statistical learning to language processing*. Invited paper presented at the Workshop on Current Issues in Language Acquisition: Artificial Languages and Statistical Learning, Calgary, Alberta, Canada.
- Mirman, D.**, Strauss, T., Magnuson, J.S., and Dixon, J.A. (March, 2007). *Integration of pragmatic context in homophone ambiguity resolution: Time course of activation of context-appropriate and context-inappropriate meanings*. Poster presented at the 20th Annual CUNY Conference on Human Sentence Processing, La Jolla, CA.
- Mirman, D.** and Magnuson, J.S. (November, 2006). *Location, Location, Location: Contrasting Effects of Near and Distant Semantic Neighbors on Semantic Access*. Poster presented at the 47th Annual Meeting of the Psychonomic Society, Houston, TX.
- Mirman, D.**, Strauss, T.J., and Magnuson, J.S. (October, 2006). *Integration of visual context in spoken word recognition: Homophones and the visual world*. Poster presented at the 5th International Conference on the Mental Lexicon, Montreal, Quebec, Canada.
- Mirman, D.**, McClelland, J.L., and Holt, L.L. (August, 2004). *Attentional Modulation of Lexical Effects in an Interactive Model of Speech Perception*. Poster presented at the 26th Annual Meeting of the Cognitive Science Society, Chicago, IL.

McClelland, J.L., **Mirman, D.**, and Holt L.L. (April, 2003) *Is there still a trace of TRACE?*
Invited paper presented at the 145th meeting of the Acoustical Society of America,
Nashville, TN.

Mirman, D., Holt, L.L., and McClelland, J.L. (June, 2002) *Formation of categories for
complex novel auditory stimuli.* Paper presented at the 143rd Meeting of the Acoustical
Society of America, Pittsburgh, PA.

Mirman, D. (August, 2001) *Learning to hear: Formation of complex auditory categories.*
Paper presented at the 19th Annual Pitt-CMU Graduate Student Psychology Conference,
Pittsburgh, PA.

PROFESSIONAL ACTIVITIES

Reviewer for *Cognition; Journal of Experimental Psychology: Learning, Memory, and
Cognition.*

Reviewer for Proceedings of the Cognitive Science Society Meeting (2005-2008).

Co-organizer, co-instructor “Computational Modeling of Spoken Language Processing: A
hands-on tutorial” a full-day tutorial presented at the 30th Annual Cognitive Science
Society Meeting (2008).

Co-organizer, co-instructor “Speech Perception: Linking Computational Models and Human
Data” a half-day tutorial presented at the 28th Annual Cognitive Science Society Meeting
(2006).

Graduate Student member of CNBC Education Committee (2003).

Graduate Student Representative for Psychology Department Faculty Meetings (2002-2003).

Organizer, *20th Annual CMU-Pitt Graduate Student Psychology Conference* (2002).

Coordinator, *CNBC Methods Workshop Series* (2001-2003).

Coordinator, *CNBC Connectionist Journal Club* (2001).

PROFESSIONAL MEMBERSHIPS

Cognitive Science Society

Cognitive Neuroscience Society

Psychonomic Society

Canadian Society for Brain, Behaviour and Cognitive Science

REFERENCES

James Magnuson (james.magnuson@uconn.edu) - Psychology, University of Connecticut

James Dixon (james.dixon@uconn.edu) - Psychology, University of Connecticut

Lori Holt (lholt@andrew.cmu.edu) - Psychology, Carnegie Mellon University

James McClelland (jlm@psych.stanford.edu) - Psychology, Stanford University

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