

Gary Lupyan

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Education

2007 **Ph.D.** Carnegie Mellon University and the Center for the Neural Basis of Cognition. Dissertation title: The Label Feedback Hypothesis: Linguistic Effects on Visual Processing. Supervisor: James L. McClelland.

2005 **M.S.** Cognitive Psychology. Carnegie Mellon University

2002 **B.A.** Cognitive Science. *Summa cum Laude* Cornell University

Professional Experience

2010- Assistant Professor of Psychology, University of Wisconsin-Madison.

2008-2010 IGERT Postdoctoral Fellow. University of Pennsylvania. Supervisors: Sharon Thompson-Schill and Daniel Swingley

2008 Research Affiliate. University of California: Merced

2008 Visiting Scholar. Max Planck Institute for Psycholinguistics, Nijmegen

2007-2008 Postdoctoral Researcher and Part-Time Lecturer. Supervisor: Michael Spivey. Cornell University

2004-2007 Teaching assistant. Department of Psychology, Carnegie Mellon University

2007 Part-time lecturer. Department of Psychology, Carnegie Mellon University

2003-2007 Graduate Student. Department of Psychology and Center for the Neural Basis of Cognition, Pittsburgh, PA

2002-2003 Research Associate. Supervisor: James McClelland, Center for the Neural Basis of Cognition, Pittsburgh, PA.

Selected Professional Honors and Awards

- APA Division of Experimental Psychology New Investigator Award (2008)
- IGERT Postdoctoral Fellowship, University of Pennsylvania
- Carnegie Mellon University Graduate Small Project Grant
- National Science Foundation Graduate Fellow (3 years of stipend/tuition funding)
- Marr Prize Nominee for Best Student Paper (Cognitive Science Society)

Invited Talks:

- 2009. Swarthmore College. Psychology Department.
- 2009. University of Edinburgh: Unit on Language Evolution and Computation
- 2009. Max Planck Institute for Psycholinguistics, Language and Cognition Group.
- 2009. MossRehab.
- 2009. University of Delaware. Papafragou Lab.
- 2009. Lehigh University. Cognition and Language Group.
- 2008. Rochester University. Brain and Cognitive Sciences.
- 2008. New York University. Marcus Lab.
- 2008. Mind, Technology, and Society Lecture Series: University of California: Merced
- 2008. National Institutes of Health: The Laboratory of Brain and Cognition
- 2008. University of Memphis. Psychology Department.
- 2008. Indiana University. Robert Goldstone Lab
- 2008. Max Planck Institute for Psycholinguistics, Language and Cognition Group.
- 2008. University of Pennsylvania. Thompson-Schill Lab.
- 2007. Boston College, Interdisciplinary Affective Science Lab.
- 2007. Max Planck Institute for Psycholinguistics, Language and Cognition Group.
- 2006. *FriSem* Cognitive Seminar Series. Stanford University Department of Psychology.

Professional Activities**Organized Symposia:**

Lupyan, G. (2006). Symposium: Beyond Whorf: How Language Affects Thought. Proponent: Gary Lupyan. Speakers: Lera Boroditsky, Gary Lupyan, Robert Goldstone, Terry Regier, Debi Roberson. In *Proceedings of The 28th Annual Conference of the Cognitive Science Society* (p. 2660). Mahwah, NJ, Lawrence Erlbaum.

Ad-hoc Reviewer for:

- Annual Conference of the Cognitive Science Society, Conference on the Evolution of Language, Connection Science, Cognitive Science, Vision Science, Interaction Studies, Psychonomic Bulletin and Review, Proceedings of the National Academy of Sciences, Developmental Science, Psychological Review, JEP: General, Journal of Memory and Language, Language and Cognitive Processes, Cognitive Psychology

Association Memberships:

- Cognitive Science Society, Cognitive Development Society, Linguistic Society of America, Vision Sciences Society, Associate Member: Brain and Behavioral Sciences, Associate Member: Psychonomic Society

Selected Media Attention

- "When Language can Hold the Answer" *New York Times*, April 22, 2008
- "Did Language Evolve as a Learning Aid?" *Scientific American Mind*, May 2008

- “Babelicious! Bigger languages are also simpler ones.” *The Economist*, January, 2010
- Russian Newsweek, January 2010.
- Science Blogs (e.g., Science Daily, Medical News Today, others)
- BBC World News: Bigger languages are also simpler ones. January 2010.
- Scientific American, The Globe and Mail, CBS, Consumer Affairs, etc. May-June 2010 (re Emberson et al., 2010).

Publications

Journal publications:

- Lupyan, G. & Spivey, M.J. (in press). Redundant spoken labels facilitate perception of multiple items. *Attention, Perception, & Psychophysics*.
- Emberson, L., Lupyan, G., Webb, A., Spivey, M.J., & Goldstein, M. (in press). Overheard Cell-Phone Conversations: When Less Speech is More Distracting. *Psychological Science*.
- Lupyan, G. & Spivey, M.J. (2010). Making the Invisible Visible: Verbal but Not Visual Cues Enhance Visual Detection. *PLoS ONE* 5(7): e11452. doi:10.1371/journal.pone.0011452
- Lupyan, G., Thompson-Schill, S.L., Swingley, D. (2010). Conceptual penetration of visual processing. *Psychological Science*, 21(5): 682-691.
- Lupyan, G. & Dale, R.A. (2010). Linguistic Structure is Partly Determined by Social Structure. *PLoS ONE*. 5(1): e8559. doi:10.1371/journal.pone.0008559.
- Lupyan, G. (2009). Extracommunicative Functions of Language: Verbal Interference Causes Selective Categorization Impairments. *Psychonomic Bulletin & Review*, 16(4), 711-718.
- Lupyan, G. (2008). The Conceptual Grouping Effect: Categories Matter (and named categories matter more). *Cognition*, 108: 566-577.
- Lupyan, G. & Spivey, M.J. (2008). Ascribing meaning to unfamiliar items facilitates visual processing. *Current Biology*, 18: R410-R412.
- Lupyan, G. (2008). From Chair To 'Chair:' A Representational Shift Account Of Object Labeling Effects On Memory. *Journal of Experimental Psychology: General*, 137(2): 348-369.
- Rakison, D.H. & Lupyan, G. (2008). Developing object concepts in infancy: An associative learning perspective. *Monographs of the Society for Research in Child Development* 73(1): 1-110.
- Lupyan, G., Rakison, D.H., McClelland, J.L. (2007). Language is not just for talking: redundant labels facilitate learning of novel categories. *Psychological Science* 18(12): 1077-1083.

Manuscripts under review and in preparation:

Lupyan, G., Kraemer, D., Prabhakaran, R., & Thompson-Schill, S.L. (under review). The influences of verbal labels and encoding strategy on visual recognition memory.

Lupyan, G., Swingley, D., (under review). Self-directed speech affects visual processing.

Lupyan, G., Mirman, D., Thompson-Schill, S.L., Hamilton, R. (ms. in preparation). Effects of aphasia and direct current stimulation on categorization performance.

Lupyan, G., Thompson-Schill, S.L., Hamilton, R. (in preparation). Effects of TMS on the conceptual influences on perceptual processing.

Lupyan, G., & Tasimi, A. (in preparation). I Was Like, "How Old Is He?": Effects of Language on Age Perception.

Lupyan, G. (ms. in preparation). The Roles of Familiarity and Category Membership in the Processing of Visual Images.

This work comprises four experiments showing that very brief training to categorize novel letter-like shapes facilitates subsequent visual processing (as measured by using a mental rotation task). Intriguingly, brief categorization results in an improvement while practice on the task itself does not.

Lupyan, G. (ms. in preparation). Effects of Category Labels on Visual Short-Term Memory.

This work comprises two experiments showing that learning labels for regions of a perceptual continuum (morphed faces) improves discrimination – as measured by an ABX task – more than simple exposure to the stimuli, even though both conditions do not involve overt categorization.

Refereed Conference Papers:

Lupyan, G. & Thompson-Schill, S.L. (2010). The evocative power of words: Activation of visual information by verbal versus nonverbal cues. In S. Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (pp. xx-xx). Austin, TX: Cognitive Science Society.
rence of the Cognitive Science Society.

Lupyan, G. & Swingley, D. (2010). Self-directed speech affects visual processing. In S. Ohlsson & R. Catrambone (Eds.), *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (pp. xx-xx). Austin, TX: Cognitive Science Society.

Lupyan, G. (2010). Beyond Communication: Language Modulates Visual Processing. *The Eighth International Conference on the Evolution of Language.*

Dale, R. & Lupyan, G. (2010). Squiggle: Large-Scale Social Emergence of Simple Symbols. *The Eighth International Conference on the Evolution of Language.*

Lupyan, G. & Spivey, M. (2008). Now You See It, Now you Don't: Verbal but not visual cues facilitate visual object detection. In B. C. Love, K. McRae, & V. M. Sloutsky (Eds.),

Proceedings of the 30th Annual Conference of the Cognitive Science Society (pp. 963-968). Austin, TX: Cognitive Science Society.

Lupyan, G. & Dale, R. (2008). Form-Meaning Compositionality Derives from Social and Conceptual Diversity. In A.D.M. Smith, K. Smith, & R.F. i Cancho, *The Seventh International Conference on the Evolution of Language*. (pp. 464-466).

Lupyan, G. (2008). Verbal Interference Causes Categorization Impairments. In A.D.M. Smith, K. Smith, & R.F. i Cancho, *The Seventh International Conference on the Evolution of Language*. (pp. 462-464).

Lupyan, G. (2007). Reuniting Categories, Language, and Perception. In D.S. McNamara & J.G. Trafton (Eds.), *Proceedings of the 29th Annual Conference of the Cognitive Science Society* (pp. 1247-1252). Austin, TX: Cognitive Science Society.

Lupyan, G. & Rakison, D.H. (2006). What Moves in a Mysterious Way? A domain-general account of learning about animacy and causality. In D.S. McNamara & J.G. Trafton (Eds.), *Proceedings of The 28th Annual Conference of the Cognitive Science Society*. (pp. 525-530) Austin, TX: Cognitive Science Society.

Lupyan, G (2006). Labels Facilitate Learning of Novel Categories. In A. Cangelosi, A.D.M. Smith & K.R. Smith (Eds.) *The Evolution of Language: Proceedings of the 6th International Conference*. (pp. 190-197). Singapore: World Scientific.

Lupyan, G (2005). Carving Nature at its Joints and Carving Joints into Nature: How Labels Augment Category Representations. In A. Cangelosi, G. Bugmann & R. Borisyyuk (Eds.) *Modelling Language, Cognition and Action: Proceedings of the 9th Neural Computation and Psychology Workshop* (pp. 87-96). Singapore: World Scientific.

Lupyan, G. & , McClelland, J.L. (2003). Did, Made, Had, Said: Capturing Quasi-Regularity in Exceptions. In *Proceedings of the 25th Annual Conference of the Cognitive Science Society* (pp. 740-745). Mahwah, NJ: Lawrence Erlbaum.

Lupyan, G. & Christiansen, M. H. (2002). Case, Word Order and Language Learnability: Insights from Connectionist Modeling. In *Proceedings of the 24th Annual Conference of the Cognitive Science Society* (pp. 596-560). Mahwah, NJ: Lawrence Erlbaum. [Nominated for Marr Prize for Best Student Paper].

Invited Chapters and Commentaries:

Lupyan, G. (2009). Cognitive Influences on Attention. Ed. B. Goldstein, *The Sage Encyclopedia of Perception*. (pp. 70-74). SAGE Publications, Inc.

Rakison D.H. & Lupyan, G. (2008). The development of modeling or the modeling of development? Commentary on Rogers, & McClelland. Semantic Cognition. *Behavioral and Brain Sciences*, 31(6): 726

- Lupyan, G. (2008). Taking symbols for granted? Is the discontinuity between human and non-human minds the product of external symbol systems? Commentary on Penn, Povinelli, & Holyoak. *Behavioral and Brain Sciences*, 31(2): 140-141.
- Lupyan, G. & Vallabha, G. (2005). Processing is shaped by multiple tasks: There is more to rules and similarity than Rules-to-Similarity Commentary on Pothos. The Rules versus Similarity Distinction. *Behavioral and Brain Sciences* 28 (1): 28-28.
- McClelland, J.L. & Lupyan, G. (2002). Double dissociations never license simple inferences about underlying brain organization, especially in developmental cases. Commentary on Thomas & Karmiloff-Smith. Are developmental disorders like cases of adult brain damage? Implications from connectionist modelling. *Behavioral and Brain Sciences* 25(6): 763-764.

Refereed Conference Posters and Abstracts:

- Kranjec, A., & Lupyan, G. (accepted) Implicit verbal categories modulate spatial perception. *Meeting of the Vision Sciences Society*.
- Lupyan, G., Kraemer, D., Prabhakaran, R., & Thompson-Schill, S.L. (2009) Memory for Pictures is Influenced by Verbal Labels and Encoding Strategy. *Fiftieth Annual Meeting of the Psychonomic Society*.
- Wojnowicz, M., Lupyan, G., Ferguson, M., Spivey, M. (2009). Subattractor Dynamics in Real-Time Mental Processing. *Thirty-First Meeting of the Cognitive Science Conference*.
- Lupyan, G., Kravitz, D. (2009). Collapsing Content and Process: Mental Representations are not Static and the Brain is not a Computer. *Thirty-First Meeting of the Cognitive Science Conference*.
- Lupyan, G., (2009). How words affect visual processing. Symposium. The Interface between Language and Thought: Current Directions, Moderators: Roberson, D., Majid, A. . *Thirty-First Meeting of the Cognitive Science Conference*.
- Lupyan, G., Thompson-Schill, S.L., Swingle, D. (2009). The penetration of visual representations by conceptual categories. *Meeting of the Vision Sciences Society*.
- Emberson, L., Lupyan, G., Webb, A., Goldstein, M., Spivey, M.J. (2008). Why cell phones are irritating: Different types of speech yield different attentional demands. *Forty-Ninth Annual Meeting of the Psychonomic Society*.
- Lupyan, G., & Spivey, M. (2008). Auditory but not visual cues facilitate visual object detection [Abstract]. *Journal of Vision*, 8(6):842, 842a, <http://journalofvision.org/8/6/842/>, doi:10.1167/8.6.842.
- Lupyan, G. (2007). Conceptual grouping effects in visual search: categories matter (and named categories matter more) [Abstract]. *Journal of Vision*, 7(9):1063, 1063a,

<http://journalofvision.org/7/9/1063/>, doi:10.1167/7.9.1063.

- Lupyan, G., McClelland, J.L. (2006). Emergence of quasiregularity in the English past tense as captured by connectionist networks. *Linguistic Structure and Connectionist Models: How Good is the Fit?* Symposium with Jay McClelland, Jeff Elman, Adele Goldberg, and Luigi Burzio. *Linguistic Society of America Meeting*: Albuquerque, NM.
- Lupyan, G. (2006). Labels Helps us Learn but Makes us Forget. Symposium: Beyond Whorf: How Language Affects Thought. In *Proceedings of The 28th Annual Conference of the Cognitive Science Society* (p. 2660). Mahwah, NJ, Lawrence Erlbaum.
- Lupyan, G. (2005). When Naming Means Forgetting: Verbal Classification Leads to Worse Memory. In *Proceedings of the Twenty-Seventh Annual Meeting of the Cognitive Science Society* (p. 2518). Mahwah, NJ: Lawrence Erlbaum.
- Lupyan, G. (2005). Labels Facilitate Learning of Novel Categories. Poster presented at *Words and the World: How Words Capture Human Experience*: Lehigh University.
- Lupyan, G. (2004). Language is Not Just for Talking: how linguistic labels help in representing the world. Paper presented at *The Fifth International Conference on the Evolution of Language*: Leipzig, Germany.
- Lupyan, G. & , McClelland, J.L. (2004). Why Irregulars Make Sense: simulating the emergence of exceptions. Paper presented at *The Fifth International Conference on the Evolution of Language*: Leipzig, Germany.
- Lupyan, G., & Rifkin, I. (2003). Dynamics of Applause: Modeling group phenomena through agent interaction Poster presented at the *25th Annual Conference of the Cognitive Science Society*.
- Lupyan, G. & Christiansen, M. H. (2002). The Case of Cases and Word Order: The Role of Syntactic Cues in the Evolution and Acquisition of Language. Paper presented at *The Fourth International Conference on the Evolution of Language*. Cambridge, MA.

Teaching:

- 2007. Designed and taught a graduate-student seminar: Language and Thought (Cornell University)
- 2007. Designed and taught an advanced undergraduate class: Language and Thought (Carnegie Mellon University)
- Numerous guest lectures
- 2005. Teaching Assistant for Biological Foundations of Psychology (2005)
- 2003. Teaching Assistant and Section Leader for Introduction to Psychology (2003)

Other:

- 2003-present. Acted as primary supervisor for fifteen undergraduate research assistants