

Shawn W. Ell

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Research Interests

Neurobiology of learning and memory, Categorization, Skill learning, Implicit and explicit memory, Computational modeling, Basal ganglia, Impact of basal ganglia dysfunction (e.g., Parkinson's disease, stroke) on cognition

Educational Background

Ph.D. in Psychology with an emphasis in Quantitative Methods (September 2003)

University of California, Santa Barbara

Dissertation: Selection and switching in rule-based category learning

Advisor: F. Gregory Ashby, Ph.D.

B.A. in Psychology (1997, December). Miami University

Extramural Research Support

Maine Institute for Human Genetics and Health. Treating cognitive dysfunction in Parkinson's disease: A cognitive neuroscience-based approach to attenuating deficits of selective attention. \$10,000 (PI: Shawn W. Ell; Co-PI: E. Drasby). 1/2008 – 12/2008.

Ruth L. Kirchstein National Research Service Award. National Institutes of Health Grant F32 NS47884-01. The neural basis of category learning. PI: Shawn W. Ell; Sponsor, Richard B. Ivry. 3/2004 – 12/2006.

Professional Experience

Assistant Professor, Department of Psychology, University of Maine, 1/2007 - present.

Postdoctoral Researcher, Helen Wills Neuroscience Institute, University of California, Berkeley, 9/2003 - 12/2006. Supervisor: Rich Ivry, Ph.D.

Graduate Research Assistant, Department of Psychology, University of California, Santa Barbara, 6/2002 - 8/2003. National Institute of Mental Health Grant R01 MH063760, The cognitive neuroscience of human category learning. Principal Investigator: F. Gregory Ashby, Ph.D.

Graduate Research Assistant, Department of Psychology, University of California, Santa Barbara, 1999-2002. National Science Foundation Grant BCS99-75037, Perceptual and cognitive processes in category learning. Principal Investigator: F. Gregory Ashby, Ph.D.

Manuscripts in Preparation

Ell, S. W., Weinstein, A., Hornick, M., & Ivry, R. B. Costs associated with stimulus-response reversals during category learning can arise from multiple levels of processing

Ell, S. W., Weinstein, A., & Ivry, R. B. The consequences of basal ganglia damage for the ability to inhibit irrelevant information: A comparison between focal lesions and Parkinson's disease.

Current Projects

Ell, S. W., Ing, D. A., & Maddox, W. T. Working memory moderates the effects of delayed feedback on decision criterion learning in rule-based category learning.

Ell, S. W., Xu, J., Ivry, R. B. Integrating perceptual information versus integrating stimulus-response codes: A comparison of information-integration category learning tasks in patients with Parkinson's disease.

Ell, S. W., Ivry, R. B., Maddox, W. T., Markman, A. B., & Baldwin, G. C. The influence of regulatory focus on task switching. (final order of authorship to be determined).

Ell, S. W., & Maddox, W. T., The impact of motivational state on implicit learning.

Publications

Ell, S.W., & Ivry, R.B. (2008). Cerebellar pathology does not impair performance on identification or categorization tasks. *Journal of the International Neuropsychological Society*, *14*, 760-770.

Ell, S., W. & Ashby, F. G. (2006). The effect of category overlap on the decision strategy in information-integration and rule-based category learning tasks. *Perception & Psychophysics*, *68*, 1013-1026.

Ell, S. W., Marchant, N. L., & Ivry, R. B. (2006). Focal putamen lesions impair learning in rule-based, but not information-integration categorization tasks. *Neuropsychologia*, *44*, 1737-1751.

Ashby, F. G., Ell, S. W., Valentin, V. V., & Casale, M. B. (2005). FROST: A distributed neurocomputational model of working memory maintenance. *Journal of Cognitive Neuroscience*, *17*, 1728-1743.

Ell, S. W., & Ashby, F. G. (2004). Dynamical trajectories in category learning. *Perception & Psychophysics*, *66*, 1318-1340.

Ashby, F. G., Ell, S. W., & Waldron, E. M. (2003). Procedural learning in perceptual categorization. *Memory & Cognition*, *31*, 1114-1125.

Ashby, F. G., Noble, S., Filoteo, V., Waldron, E., & Ell, S. W. (2003). Category learning deficits in Parkinson's disease. *Neuropsychology*, *17*, 115-124.

Ashby, F. G., & Ell, S. W. (2002). Single versus multiple systems of category learning: Reply to Nosofsky and Kruschke (2001). *Psychonomic Bulletin & Review*, *9*, 175-180.

Ashby, F. G., & Ell, S. W. (2002). Single versus multiple systems of learning and memory. In J. Wixted (Ed.), *Steven's Handbook of Experimental Psychology: Vol. 4. Methodology (3rd ed.)*. New York: Wiley.

Ashby, F. G., & Ell, S. W. (2001). The neurobiology of human category learning. *Trends in*

Cognitive Sciences, 5, 181-225.

Invited Presentations

- Ell, S. W. (2008, April). Parkinson's study update. Presented at the 6th annual Parkinson's Awareness Conference, Freeport, ME.
- Ell, S. W. (2008, March). The Cognitive Neuroscience of Category Learning. Psychology Department, Colby College.
- Ell, S. W. (2007, May). The Consequences of Basal Ganglia Dysfunction for Learning and Memory. Paper presented at the annual meeting of the Maine Association of Psychiatric Physicians, Freeport, ME.

Published Abstracts

- Ell, S. W., Weinstein, A., & Ivry, R. B. (2008, February). The Effect of Focal Basal Ganglia Lesions on Rule-Based and Information-Integration Category Learning. Symposium presentation accepted for the 36th annual meeting of the International Neuropsychological Society, Waikoloa, HI.
- Schnyer, D. M., Maddox, W. T., Ell, S. W., Davis, S., & Verfaellie, M. (2008, February). Dissociating rule-based and information-integration category learning: Evidence from frontal lesion patients. Symposium presentation accepted for the 36th annual meeting of the International Neuropsychological Society, Waikoloa, HI.

Conference Presentations

- Ell, S. W., Weinstein, A., & Ivry, R. B. (2008, April). Rule-Based Categorization Deficits in Patients with Parkinson's Disease are not Dependent upon Dopaminergic Medication. Poster session accepted for the 15th annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Ell, S. W., & Drasby, E. (2007, September). Treating cognitive dysfunction in Parkinson's disease: A cognitive neuroscience-based approach to attenuating deficits of selective attention. Paper presented at the 1st annual meeting of the Maine Neurogenetics Consortium Conference, Bar Harbor, ME.

- Ell, S. W., Weinstein, A., Filoteo, J.V., Maddox, W.T., & Ivry, R. B. (2007, May). Selective attention demand mediates rule-based categorization deficits in focal basal ganglia lesion patients. Poster session presented at the 14th annual meeting of the Cognitive Neuroscience Society, New York, NY.
- Schnyer, D., Ell, S. W., Maddox, W. T., Davis, S., Verfaellie, M. (2007, May). Impaired category learning in patients with damage to prefrontal cortex. Poster session presented at the 14th annual meeting of the Cognitive Neuroscience Society, New York, NY.
- Ell, S. W., Marchant, N. L., & Ivry, R. B. (2005, April). Category learning deficits in patients with focal basal ganglia lesions. Poster session presented at the 12th annual meeting of the Cognitive Neuroscience Society, New York, NY.
- Ell, S. W. & Ashby, F. G. (2004, April). Probabilistic category learning varies as a function of the task: A comparison of rule-based and information-integration category learning tasks. Poster session presented at the 11th annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Ashby, F. G., Ell, S. W., Valentin, V. V., & Casale, M. B., Spiering, B., & O'Brian, J. (2004, May). Building and testing biologically plausible computational models of neuroscience, neuroimaging, and behavioral data. Paper presented at the Notre Dame Series on Quantitative Methodology.
- Ashby, F. G., Ell, S. W., Valentin, V. V., & Casale, M. B. (2003, April). A neurocomputational model of working memory. Poster session presented at the 10th annual meeting of the Cognitive Neuroscience Society, New York, NY.
- Ashby, F. G., Ell, S. W., Valentin, V. V., & Casale, M. B. (2002, September) Evidence for functionally separate explicit and implicit category learning systems. Paper presented at the McDonnell-Pew Foundation Symposium on the Neurobiology of Category Learning, New York, NY.
- Ashby, F. G., Ell, S. W., Valentin, V. V., & Casale, M. B. (2002, August). A neurocomputational model of working memory. Paper presented at the 1st Annual Summer Interdisciplinary Conference. Squamash, BC.
- Ell, S. W., Ashby, F. G., Valentin, V. V., Casale, M. B., Waterhouse, E. G. (2002, July). Towards a biologically plausible model of rule-based category learning. Paper presented at the 33rd annual meeting of the Society for Mathematical Psychology, Oxford, OH
- Ashby, F. G., Ell, S. W., Casale, M. B., Valentin, V. V., Waterhouse, E. G. (2002, April). Biologically plausible models of rule-based and implicit categorization. Poster session presented at the 9th annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Ashby, F. G., Ell, S. W., Casale, M. B., & Ing, D. A. (2001, November). A computational model of working memory: reverberation in frontal-striatal-thalamic loops. Poster session presented at the annual meeting of the Society for Neuroscience, San Diego, CA.
- Ashby, F. G., & Ell, S. W. (2001, July). A neurobiological model of implicit category learning. Paper presented at the 3rd International Conference on Memory, Valencia, Spain, Invited Address.
- Ashby, F. G., & Ell, S. W. (2001, July). A neurobiologically plausible model of implicit category learning. Paper presented at the Workshop on Speech Recognition as Pattern Classification, Nijmegen, The Netherlands, Invited Address.

- Ashby, F. G., Ell, S. W., Casale, M. B., & Ing, D. A. (2001, March). A frontal-striatal based model of working memory. Poster session presented at the 8th annual meeting of the Cognitive Neuroscience Society, New York, NY.
- Ashby, F. G., Ell, S. W., & Waldron, E. M. (2000, November). A striatal-based model of implicit category learning. Paper presented at the 41st annual meeting of the Psychonomics Society, New Orleans, LA.
- Ashby, F. G. & Ell, S. W. (2000, October). Do multiple memory systems participate in human category learning? Paper presented at the Annual Meeting of the Memory Disorders Research Society, Toronto, ON, Invited Address.
- Waldron, E. M., Ell, S. W., Ashby, F. G., McCormick, M., & Casale, M. B. (2000, April). A striatal-based model of implicit category learning. Poster session presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Ell, S. W., Ashby, F. G., & Waldron, E. (1999, April). Dynamical trajectories in category learning. Paper presented at the 30th annual meeting of the Society for Mathematical Psychology.
- Thomas, R. & Ell, S. W. (1998, November). On the effects of integrality and perceptual dependencies on same-different judgments. Paper presented at the 39th annual meeting of the Psychonomics Society, Dallas, TX.
- Thomas, R., Ell, S. W., & Grossman, E. (1997, August). Exploring the consequences of integrality and perceptual dependencies on component same-different judgments. Paper presented at the 30th annual meeting of the Society for Mathematical Psychology.

Service to the Community

Parkinson's disease support group presentations

- Bangor Area Group (5/20/2007)
- Augusta Area Group (6/10/2007)
- Blue Hill Group (10/17/2007)

Other service-oriented presentations

- Ell, S. W. (2008, April). Parkinson's study update. Presented at the 6th annual Parkinson's Awareness Conference, Freeport, ME.
- Ell, S. W. (2007, May). The Consequences of Basal Ganglia Dysfunction for Learning and Memory. Paper presented at the annual meeting of the Maine Association of Psychiatric Physicians, Freeport, ME.

Awards and Honors

- University of Maine Summer Faculty Research Award (Summer, 2008)
- National Travel Award from the College of Liberal Arts and Sciences to attend the Cognitive Neuroscience Society Meeting in New York, NY (April, 2007).
- Siff Foundation Fellowship, Santa Barbara, 2002-2003
- Graduate Student Travel Grant, University of California, Santa Barbara, 2001, 2002, 2003

Non-Resident Tuition Fellowship, Department of Psychology, University of California, Santa Barbara, 1998-1999

Summer Research Fellowship, Miami University, 1997

Teaching Experience

Department of Psychology, University of Maine

Advanced Psychological Statistics and Methods II, 2008 (Graduate Course)

Advanced Psychological Statistics and Methods I, 2007 (Graduate Course)

Advanced Cognitive Psychology, 2007 (Graduate Course)

Department of Psychology, University of California, Santa Barbara

Lab Instructor (Graduate Courses)

Probability and Statistics, 1999-2002

Experimental Design & Measurement, 1999-2002

Lab Instructor (Undergraduate Courses)

Experimental Design, 2002

Introductory Statistics, 2000, 2001

Introductory Psychology, 1998

Teaching Assistant

Introduction to Perception, 1999 (Guest Lecturer), 2002

Cognitive Psychology, 1999, 2001 (Guest Lecturer)

Introduction to Audition, 1998

Professional Affiliations

Cognitive Neuroscience Society, Maine Neurogenetics Consortium, Society for Neuroscience

Editorial Reviews (ad hoc)

Cognitive Science, European Journal of Neuroscience, Journal of Cognitive Neuroscience, Journal of Experimental Psychology: Learning, Memory, & Cognition, Journal of Mind and Behavior, Perception & Psychophysics, Psychonomic Bulletin & Review, Memory & Cognition, Neuropsychologia, Quarterly Journal of Experimental Psychology