Douglas B. Markant

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Education

2008—2014	New York University Psychology: Cognition and Perception M.A. completed May 16, 2012 Ph.D. completed January 27, 2014 Advisor: Dr. Todd Gureckis
2001—2005	Cornell University B.A. Psychology Minors in Information Science and Cognitive Science

Positions

2014—present	Postdoctoral Researcher Center for Adaptive Rationality Max Planck Institute for Human Development, Berlin Advisors: Dr. Ralph Hertwig and Dr. Tim Pleskac
2005—2008	Research Assistant Psychiatry Neuroimaging Laboratory Brigham and Women's Hospital, Harvard Medical School, Boston Advisor: Dr. Martha Shenton

Peer-reviewed Journal Articles

Markant, D. (in revision). "Exploring the limits of self-directed learning: Effects of biased hypothesis generation."

Markant, D., Ruggeri, A., Gureckis, T. M., and Xu, F. (2016). "Enhanced memory as a common effect of active learning." *Mind, Brain, and Education.* doi: 10.1111/mbe.12117

Markant, D., Settles, B. and Gureckis, T.M (2016). "Self-directed learning favors local, rather than global, uncertainty." *Cognitive Science 40*(1), 100—120. doi: 10.1111/cogs.12220

Gureckis, T. M., Martin, J., McDonnell, J., Rich, A., **Markant, D.**, Coenen, A., Hamrick, J., Chan, P. (2015). "psiTurk: An open-source framework for conducting replicable behavioral experiments online." *Behavior Research Methods.* doi: 10.3758/s13428-015-0642-8

Markant, D., Dubrow, S., Davachi, L., Gureckis, T.M. (2014). "Deconstructing the effect of self-directed study on episodic memory." *Memory & Cognition 42*(8), 1211—1224. doi: 10.3758/s13421-014-0435-9
* Awarded the 2014 Psychonomic Society's Clifford T. Morgan Best Article Award for Memory & Cognition

Markant, D. and Gureckis, T.M. (2014). "Is it better to select or receive? Learning via active and passive hypothesis testing." *Journal of Experimental Psychology: General 143*(1), 94—122. doi: 10.1037/a0032108

Gureckis, T.M. and **Markant, D.** (2012). "Self-directed learning: A cognitive and computational perspective." *Perspectives on Psychological Science, 7*(5), 464—481. doi: 10.1177/1745691612454304

Whitford, T. J., Kubicki, M., Schneiderman, J. S., O'Donnell, L. J., King, R., Alvarado, J. L., Khan, U., **Markant, D.**, Nestor, P. G., Niznikiewicz, M., et al. (2010). Corpus callosum abnormalities and their association with psychotic symptoms in patients with schizophrenia. *Biological Psychiatry, 68*(1):70–77.

Voineskos, A. N., O'Donnell, L. J., Lobaugh, N. J., **Markant, D.**, Ameis, S. H., Niethammer, M., Mulsant, B. H., Pollock, B. G., Kennedy, J. L., Westin, C. F., et al. (2009). Quantitative examination of a novel clustering method using magnetic resonance diffusion tensor tractography. *Neuroimage, 45*(2):370–376.

Rosenberger, G., Kubicki, M., Nestor, P. G., Connor, E., Bushell, G. B., **Markant, D.**, Niznikiewicz, M., Westin, C.-F., Kikinis, R., Saykin, A. J., et al. (2008). Age-related deficits in fronto-temporal connections in schizophrenia: a diffusion tensor imaging study. *Schizophrenia Research, 102*(1):181–188.

Kubicki, M., Styner, M., Bouix, S., Gerig, G., **Markant, D.,** Smith, K., Kikinis, R., McCarley, R., and Shenton, M. (2008). Reduced interhemispheric connectivity in schizophrenia-tractography based segmentation of the corpus callosum. *Schizophrenia Research, 106*(2):125–131.

Manuscripts in Preparation

Markant, D., Pleskac, T., Diederich, D., Pachur, T., Hertwig, R. (in prep). "CHASE: Choice from Accumulated Samples of Experience."

Markant, D. and Gureckis, T. M. (in prep). "Predictive uncertainty as a guide to self-directed exploration."

Markant, D. (in prep). "Effects of outcome valence and uncertainty on information search."

Markant, D., Phillips, N., Kareev, Y., Avrahami, J., & Hertwig, R. (in prep). "Acting fast vs. biding time: Adaptive exploration under competitive pressure."

Dissertation

Markant, D. (2014). *Uncertainty sampling: Computational analyses of self-directed exploration and learning* (Doctoral dissertation, New York University). Retrieved from ProQuest Dissertations and Theses.

Peer-reviewed Conference Proceedings

Markant, D. (2016). "The impact of biased hypothesis generation on self-directed learning." In Papafragou, A., Grodner, D., Mirman, D., and Trueswell, J. (Eds.) *Proceedings of the 38th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Ruggeri, A., **Markant, D.**, Gureckis, T. M., and Xu, F. (2016). "Active control of study leads to improved recognition memory in children." In Papafragou, A., Grodner, D., Mirman, D., and Trueswell, J. (Eds.) *Proceedings of the 38th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Markant, D., Pleskac, T. J., Diederich, A., Pachur, T., and Hertwig, R. (2015). "Modeling choice and search in decisions from experience: A sequential sampling approach." In Noelle, D. C., Dale, R., Warlaumont, A. S., Yoshimi, J., Matlock, T., Jennings, C. D., & Maglio, P. P. (Eds.), *Proceedings of the 37th Annual Conference of the Cognitive Science Society.* Austin, TX: Cognitive Science Society.

Markant, D. and Gureckis, T.M. (2014). "A preference for the unpredictable over the informative during self-directed learning" in P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.) *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Markant, D. and Gureckis, T.M. (2012). "Does the utility of information influence sampling behavior?" In Miyake, N., Peebles, D., and Cooper, R., editors, *Proceedings of the 34th Annual Conference of the Cognitive Science Society*, pages 719–724, Austin, TX. Cognitive Science Society.
* Awarded the Cognitive Science Society Computational Modeling Prize for higher-level cognition

Markant, D. and Gureckis, T.M. (2012). "One piece at a time: Learning complex rules through self-directed sampling." In Miyake, N., Peebles, D., and Cooper, R., editors, *Proceedings of the 34th Annual Conference of the Cognitive Science Society*, pages 725–730, Austin, TX. Cognitive Science Society.

Markant, D. and Gureckis, T.M. (2010) "Category learning through active sampling." In Ohlsson, S. and Catrambone, R., editors, *Proceedings of the 32th Annual Conference of the Cognitive Science Society*, pages 248–253, Austin, TX. Cognitive Science Society.

Gureckis, T.M. and **Markant, D.** (2009) "Active learning strategies in a spatial concept learning game." In Taatgen, N., van Rijn, H., Schomaker, L. and Nerbonne, J. (Eds), *Proceedings of the 31st Annual Conference of the Cognitive Science Society* (pp. 3145-3150). Austin, TX: Cognitive Science Society.

Professional Presentations

Markant, D. (August, 2016). "Workshop: Active learning: Cognitive development, education, and computational models." Talk to be presented at the 38th Annual Meeting of the Cognitive Science Society,

Philadelphia, PA.

Markant, D. (May, 2016). "Hypothesis generation sets the stage for self-directed category learning." Talk presented at the International Meeting of the Psychonomic Society, Granada, Spain.

Gureckis, T. M., Chan, P., **Markant, D.**, and Lake, B. (November 2015). "Adaptive teaching: Improving the efficiency of learning through hypothesis-dependent selection of training data." Talk presented at Anuual Meeting of the Psychonomic Society, Chicago, IL, USA.

Markant, D., Pleskac, T. J., Diederich, A., Pachur, T., and Hertwig, R. (August, 2015). "Modeling choice and search in decisions from experience: A sequential sampling approach." Talk presented at the 25th Subjective Probability, Utility, and Decision Making Conference, Budapest, Hungary.

Markant, D., Phillips, N., Kareev, Y., Avrahami, Y., & Hertwig, R. (August, 2015). "Acting fast vs. biding time: Effects of competition on information sampling." Talk presented at the 25th Subjective Probability, Utility, and Decision Making Conference, Budapest, Hungary.

Markant, D., Pleskac, T. J., Diederich, A., Pachur, T., and Hertwig, R. (July, 2015). "Modeling choice and search in decisions from experience: A sequential sampling approach." Talk presented at the Annual Meeting of the Society for Mathematical Psychology, Newport Beach, CA.

Markant, D., Pleskac, T. J., Diederich, A., Pachur, T., and Hertwig, R. (July, 2015). "Modeling choice and search in decisions from experience: A sequential sampling approach." Talk presented at the 37th Annual Meeting of the Cognitive Science Society, Pasadena, CA.

de Leeuw, J.R., Coenen, A., **Markant, D.**, Martin, J.B., McDonnell, J.V., Rich, A.S., Gureckis, T.M. (July, 2014). "Workshop: Online Experiments using jsPsych, psiTurk, and Amazon Mechanical Turk" in P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.) *Proceedings of the 36th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Markant, D., Gureckis, T.M., Meder, Nelson, J.D., Pirolli, P., and Yu, C. (August, 2013) "Symposium: Informavores: Active information foraging and human cognition" in M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.) *Proceedings of the 35th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Coenen, A., **Markant, D.**, Martin, J.B., McDonnell, J.V. (August, 2013) "Workshop: Using Mechanical Turk and PsiTurk for Dynamic Web Experiments" in M. Knauff, M. Pauen, N. Sebanz, & I. Wachsmuth (Eds.) *Proceedings of the 35th Annual Conference of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.

Markant, D. and Gureckis, T. M. (August, 2012). "One piece at a time: Learning complex rules through self-directed sampling." Talk presented at 34th Annual Meeting of the Cognitive Science Society, Sapporo, Japan.

Markant, D. and Gureckis, T. M. (August, 2012). "Does the utility of information influence sampling behavior?" Talk presented at the 34th Annual Meeting of the Cognitive Science Society, Sapporo, Japan.

Markant, D. and Gureckis, T. M. (August, 2010). "Category learning through active sampling." Talk

presented at the 32nd Annual Meeting of the Cognitive Science Society, Portland, OR.

Markant, D. and Gureckis, T.M. (August, 2009) "Modes of information search in active learning." Talk presented at MathPsych 2009, Amsterdam, Netherlands.

Poster Presentations

Markant, D., Phillips, N., Kareev, Y., Avrahami, Y., & Hertwig, R. (November, 2015). "Acting fast vs. biding time: Effects of competition on information sampling." Poster presented at the Annual Meeting of the Society for Judgment and Decision Making, Chicago, IL, USA.

Markant, D., Pleskac, T. J., Diederich, A., Pachur, T., and Hertwig, R. (May, 2015). "Modeling choice and search in decisions from experience: A sequential sampling approach." Poster presented at the Workshop on Memory Processes in Judgment and Decision Making, Holstein, Swizerland.

Markant, D., Chan, P., Coenen, A., Martin, J., McDonnell, J., Rich, A. and Gureckis, T. M. (November 2014). "psiTurk: An open-source framework for conducting reproducible behavioral experiments online." Poster presented at the 2014 meeting of the Society for Computers in Psychology, Long Beach, CA, USA.

Chan, P., **Markant, D.**, Lake, B. and Gureckis, T.M. (July 2014). "Adaptive teaching: Improving the efficiency of learning through hypothesis-dependent selection of training data." Poster presented at the 36th Annual Meeting of the Cognitive Science Society, Quebec City, Canada.

Markant, D. and Gureckis, T.M. (August 2013). "Adapting search based on hypothesis space sparsity." Poster presented at the 35th Annual Meeting of the Cognitive Science Society, Berlin, Germany.

Markant, D., Dubrow, S., Davachi, L., Gureckis, T.M. (August 2012). "The role of exploratory decision-making in enhancing episodic memory." Poster presented at the 34th Annual Meeting of the Cognitive Science Society, Sapporo, Japan.

Gureckis, T. M. and **Markant, D.** (November, 2011). "How search in the mind guides search in the world." Poster presented at the Annual Meeting of the Psychonomic Society, Seattle, WA.

Markant, D. and Gureckis, T. M. (August, 2011). "Sampling at the Margins to Learn Perceptual Categories." Poster presented at the 33rd Annual Meeting of the Cognitive Science Society, Boston, MA.

Markant, D. and Gureckis, T. M. (November, 2010). "An Exploration of Active Sampling in Perceptual Classification Tasks." Poster presented at Annual Meeting of the Psychonomic Society, St. Louis, MO.

Markant, D. and Gureckis, T. M. (August, 2010). "Discovering complex categories through active sampling." Poster presented at IEEE International Conference on Development and Learning, Ann Arbor, MI.

Gureckis, T.M. and **Markant, D.** (2009) "Active Learning Strategies in a Spatial Concept Learning Game." Poster presented at the 31st Annual Conference of the Cognitive Science Society, Amsterdam, Holland.

Invited Talks

October, 2016	"Valuing information for learning." *Second Interdisciplinary Symposium on Information-seeking, Curiosity and Attention*, London, UK.
August, 2016	"CHASE-ing the dream: A sequential sampling framework for modeling decisions from experience." *4th Summer School on Decisions from Experience*, Warwick Business School.
April, 2016	"On choosing your own adventure: Effects of active control on learning and memory." Affective Brain Lab, University College London.
November, 2015	"Hypothesis generation sets the stage for self-directed learning." Experimental Psychology Seminar, University College London.
March, 2015	"Acting fast vs. biding time: Exploration in competitive environments." Center for the Study of Rationality, Hebrew University of Jerusalem.
December, 2013	"Bayesian models of self-directed information gathering" (with Todd Gureckis). BBN Workshop on Bayesian Cognitive Modeling for the Intelligence Community, BBN Raytheon.
July, 2013	"What you don't know can help you: Uncertainty-driven sampling during learning." Center for Adaptive Rationality, Max Planck Institute for Human Development.
May, 2013	"Into the unknown: How uncertainty guides active learning." University Seminar Series, Stevens Institute of Technology.
April, 2013	"Decomposing the `active' learner: Effects of self-directed control on learning and memory." Department of Psychological and Brain Sciences, Indiana University.

Awards and Honors

2014	Psychonomic Society Clifford T. Morgan Best Article Award (*Memory & Cognition*)
2013	American Psychological Association Dissertation Research Award
2013	Learning Analytics Summer Institute (LASI), Stanford University
2012	Computational Modeling Prize in Higher-level Cognition for paper presented at the 2012 Meeting of the Cognitive Science Society
2012	Robert J. Glushko and Pamela Samuelson Foundation Student Travel Grant for attendance to the 2012 Meeting of the Cognitive Science Society
2011	Graduate Summer School: "Probabilistic Models of Cognition", Institute of Pure and Applied Mathematics, UCLA
2010	Graduate School of Arts and Sciences Travel Award, NYU

2010	Honorable Mention, NSF Graduate Research Fellowship Program
2008—2013	MacCracken Fellowship, NYU Graduate School of Arts and Sciences

Professional Service

Ad-hoc journal reviewing: *Annual Meeting of the Cognitive Science Society, Behavior Research Methods, Cognition, Cognitive Psychology, Cognitive Science, Cortex, Decision, Journal of Cognitive Psychology, Journal of Experimental Psychology: General, Journal of Experimental Psychology: Human Perception & Performance, Journal of Experimental Psychology: Learning, Memory & Cognition, Journal of Mathematical Psychology, Memory and Cognition, PLOS Computational Biology, Psychological Science, Psychonomic Bulletin and Review, Trends in Cognitive Science*

Ad-hoc grant reviewing: *National Science Foundation (Decision, Risk, and Management Science)*

Teaching Experience

Fall 2013	Teaching Assistant, *fMRI Lab* (graduate, NYU)
Summer 2012	Instructor, *Cognition* (undergraduate, NYU)
Fall 2010	Teaching Assistant, *Cognition* (undergraduate, NYU)
Summer 2010	Teaching Assistant, *Abnormal Psychology* (undergraduate, NYU)
Spring 2009	Teaching Assistant, *Lab in Human Cognition* (undergraduate, NYU)

Mentoring

2012—2014	Abigail Lee (high school intern, NYU)
Spring 2016	Deborah Koll (intern, Center for Adaptive Rationality, MPI)