

Andrew Charles Heusser, Ph.D.

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Education

New York University, New York, NY

July 2016

Cognition and Perception Doctoral Program in Psychology

Advisor: Lila Davachi

Dissertation title: The role of neural oscillations in the encoding and organization of sequential events

Northeastern University, Boston, MA

May 2008

Bachelor of Science in Psychology, Minor in Philosophy

Research and Professional Experience

Psychological and Brain Sciences Dept., Dartmouth College, Hanover, NH

July 2016 – present

Postdoctoral Fellow

- Utilizing topic models of educational videos and brain/behavior-derived computational models of student knowledge to optimize learning efficiency of MOOCs (massively open online courses)
- Creating web-based technologies to aid in experimental analysis and data visualization
- Developing scalable analysis pipelines for massive data sets

OpenBCI, Brooklyn, NY

August 2015 – June 2016

Researcher / Software Engineer (part-time)

- Leading the development of an open-source software platform for stimulus presentation and data collection in a web browser designed for behavioral and EEG research.
- Testing and analyzing hardware/software interactions to minimize latency issues and optimize precision of the data
- Advising on the development of future hardware/software for psychological research applications

Center for Neuroscience, University of California, Davis, CA

August 2008 – August 2011

Junior Specialist, Advisor: Charan Ranganath

- Designed and conducted EEG study examining neural correlates of memory for temporal context
- Used fMRI to investigate the brain areas involved in the maintenance of abstract rules
- Administration and maintenance of a local linux-based network

Department of Psychology, Northeastern University, Boston, MA

January 2007 - April 2008

Research Assistant, Advisor: Jay McLaughlin

- Conducted behavioral assays in mice investigating the effects of stress on learning and memory
- Designed and initiated study to investigate the effects of stress on spatial memory in mice

Center for Psychiatric Rehabilitation, Boston, MA

January 2006 - December 2007

Research Assistant, Advisor: Sally Rogers

- Conducted in-person interviews for various research projects dealing with psychiatric recovery
- Made bi-monthly on-site visits to numerous class locations to meet with students and teachers

Honors and Awards

- Bennet B. Murdock Student Research Award (CEMS, 2013)
- National Science Foundation Graduate Research Fellowship Honorable Mention (2012, 2013)
- Joseph Armington Memorial Award in Physiological Psychology Research (2008)
- Northeastern Provost Undergraduate Research Award (2007)

Publications

Heusser AC, Poeppel D, Ezzyat Y, Davachi L (2016). Episodic sequence memory is supported by a theta/gamma phase code. ***Nature Neuroscience***

Heusser AC, Ezzyat Y, Shiff I, Davachi L (In revision) Perceptual boundaries cause mnemonic trade-offs between local boundary processing and across-trial associative binding. ***JEP:LMC***

Heusser AC, Awipi T, Davachi L (2013). Repetition-related modulation of the perirhinal cortex predicts conceptual priming. ***Neuropsychologia***

Murty VP, Stanek JK, **Heusser AC** (2013). Representations of distinct salience signals in the nucleus accumbens. ***Journal of Neuroscience***

McLaughlin JP, **Heusser AC**, Reilley KJ, Giulianotti M, Houghten RA (2009) The direct In vivo use of mixture-based libraries in the drug discovery process. ***Peptide Science***

Publications in Preparation:

Heusser AC, Ezzyat Y, Poeppel D, Davachi L (In prep). Accumulating oscillatory power supports the formation of events in episodic memory.

Conference Talks

Heusser AC, Poeppel D, Ezzyat Y, Davachi L (2016, May) Episodic sequence memory is supported by a theta/gamma phase code. For: Manhattan Area Memory Meeting, New York, NY.

Heusser AC, Poeppel D, Ezzyat Y, Davachi L (2015, October) The influence of perceptual boundaries on the formation and organization of events in episodic memory. For: Society for Neuroscience Meeting, Chicago, IL.

Heusser AC, Poeppel D, Ezzyat Y, Davachi L (2015, May) Theta/gamma phase coding supports memory for temporal order within episodic events, For: Context and Episodic Memory Symposium, Philadelphia, PA.

Heusser AC, Ezzyat Y, Davachi L (2014, May) Accumulating oscillatory power supports the formation of events in episodic memory. For: Manhattan Area Memory Meeting, New York, NY.

Heusser AC, Ezzyat Y, Shiff L, Davachi L (2013, May) Perceptual shifts in context disrupt temporal order memory but facilitate item-feature binding. For: Manhattan Area Memory Meeting, New York, NY.

Conference Poster Presentations

Heusser AC, Brooks T, Davachi L (2016, May). OpenEXP: An open-source platform for running EEG experiments in the wild. For: Context and Episodic Memory Symposium, Philadelphia, PA.

Heusser AC, Davachi L (2014, November). Dynamic shifts in oscillatory coupling track the encoding of episodic events. For: Society for Neuroscience, Washington, DC.

Heusser AC, Ezzyat Y, Shiff L, Davachi L (2013, May) Perceptual shifts in context disrupt associative but facilitate source memory retrieval. For: Context and Episodic Memory Symposium, Philadelphia, PA.

Heusser AC, Tubridy S, Davachi L (2012, October) Conceptual processing carries traces of recent past: Modality-specific reactivation of prior experience. For: Society for Neuroscience, New Orleans, LA.

Inhoff M, **Heusser AC**, Tambini A, Martin CB, O'Neil EB, Kohler S, Vazquez B, Devinsky O, Davachi L (2012, October) Material-specific associative memory and perceptual deficits in a patient with a right perirhinal cyst. For: Society for Neuroscience, New Orleans, LA.

Tubridy S, **Heusser AC**, Davachi L (2012, October) Temporal profiles of episodic reactivation: An MEG study. For: Society for Neuroscience, New Orleans, LA.

Heusser AC, Awipi T, Davachi L (2012, April) Imaging Cross-modal Repetition Suppression Effects in the Human Temporal Lobe. For: Cognitive Neuroscience Society, Chicago, IL.

Heusser AC, Jenkins LJ, Gruber M, Kelly L, Marin A, Ranganath C (2011, November) Reinstatement of Oscillatory Brain Activity Predicts Successful Temporal Context Retrieval. For: Society for Neuroscience, Washington, DC.

Roberts BM, **Heusser AC**, Ranganath C (2011, November) Oscillatory Brain Activity during the Maintenance of Spatial and Temporal Information in Working Memory. For: Society for Neuroscience, Washington, DC.

Heusser AC, Gruber M, Kelly L, Ranganath, C (2011, April) Neural Correlates of Temporal Context Encoding and Retrieval. For: Cognitive Neuroscience Society, San Francisco, CA.

Heusser AC, Gruber M, Kelly L, Ranganath, C (2010, November) Neural Correlates of Temporal Context Retrieval. For: Society for Neuroscience, San Diego, CA.

Ragland JD, Ranganath C, Ramsay IS, **Heusser AC**, Niendam TA, Yoon JH, Solomon M, Carter CS. (2010, May) Effect of Rule Maintenance on Episodic Memory in Schizophrenia. For: Society of Biological Psychiatry Annual Meeting, New Orleans, LA.

Heusser AC, Ramsay IS, Ragland JD, Carter CS, Ranganath C (2009, October) Prefrontal Activation During Successful Encoding of Task-relevant and Irrelevant Information. For: Society for Neuroscience, Chicago IL.

Ragland, J.D., Ramsay I.S., **Heusser AC**, Niendam, T.A., Minzenberg M.J., Yoon J.H., Solomon M., Carter C.S., Ranganath C. (2009, December) Effect of Schizophrenia on Prefrontal Control of Episodic Memory Encoding. For: American College of Neuropsychopharmacology Meeting, Hollywood, FL.

Ramsay IS, **Heusser AC**, Yoon JH, Minzenberg MJ, Niendam TA, Solomon M, Carter CS, Ranganath C, Ragland JD (2009, August) Effect of Schizophrenia on Prefrontal Control of Memory Encoding. For: 6th annual Bay Area Memory Meeting, San Francisco, CA.

Heusser AC, Ramsay IS, Ragland JD, Carter CS, Ranganath C (2009, August) Prefrontal Activation During Successful Encoding of Task-relevant and Irrelevant Information. For: 6th annual Bay Area Memory Meeting,

San Francisco, CA.

Ramsay IS, **Heusser AC**, Yoon JH, Minzenberg MJ, Niendam TA, Solomon M, Carter CS, Ranganath C, Ragland JD (2009, March) Effect of Schizophrenia on Prefrontal Control of Memory Encoding. For: Cognitive Neuroscience Society, San Francisco, CA.

Heusser AC, Ramsay IS, Ragland JD, Carter CS, Ranganath C (2009, March) Prefrontal Activation During Successful Encoding of Task-relevant and Irrelevant Information. Cognitive Neuroscience Society, San Francisco, CA.

Heusser AC, Carey AN, Brogna, L, Morrison K, McLaughlin JP (2008, April) Kappa Opioid Receptor Activation Mediates Stress-Induced Deficits in Spatial Learning and Memory. For: North East Undergraduate/Graduate Research Organization for Neuroscience Annual Meeting, Boston, MA.