

CURRICULUM VITAE

Matthew John Weber, Ph.D.

Business address 3720 Walnut Street
Center for Cognitive Neuroscience
Philadelphia, PA 19104
Home address 8 Harrison Lane
Princeton Junction, NJ 08550
Phone +1 609 468 7599
Fax +1 215 898 1982
Email mweb@psych.upenn.edu
URL (with current CV) <http://www.sas.upenn.edu/~mweb>
Citizenship United States

Education

2009 Ph.D. Princeton University, Psychology & Neuroscience
Dissertation title: "Mapping conceptual knowledge in the human brain"
Advisors: Daniel Osherson, Ph.D.; Kenneth Norman, Ph.D.
2007 M.A. Princeton University, Psychology & Neuroscience
2002 A.B. Amherst College, Computer Science and Russian, *magna cum laude*

Academic appointments

2013– Lecturer, University of Pennsylvania Department of Psychology
2009– Postdoctoral researcher, University of Pennsylvania Department of Psychology
Supervisor: Sharon Thompson-Schill, Ph.D.
2009–2011 Visiting research collaborator, Princeton University Department of Psychology
2006–2009 Assistant in Instruction, Princeton University Department of Psychology
2002–2004 Research assistant, Princeton University Department of Psychology
Supervisor: Anne Treisman, Ph.D.

Awards & honors

2006 McDonnell Summer Institute in Cognitive Neuroscience
2005–2008 National Science Foundation Graduate Research Fellowship
2005–2007 John Woodruff Simpson Fellowship, Amherst College
2004–2005 Princeton University Merit Prize

Working papers

1. **Weber MJ** and Thompson-Schill SL (under review). Exemplar generalization and cue competition: Support for an attentional theory. Draft available on request.

2. Musz EA*, **Weber MJ*** and Thompson-Schill SL (under review). Visual statistical learning is not strongly modulated by selective attention. Draft available on request. * *The first two authors contributed equally to the preparation of this manuscript.*
3. Lee Y-S, Aguirre GK, Lupyan G, Roberts-Kedes D, **Weber MJ**, and Thompson-Schill SL (in preparation). Automatic categorization of letter identity in extrastriate visual cortex.
4. **Weber MJ**, Lee Y-S, and Thompson-Schill SL (in preparation). Comparison of dependent correlations in multivariate pattern analysis.

Articles published and in press

1. **Weber MJ**, Messing SB, Rao H, Detre JA, and Thompson-Schill SL (2014). Transcranial direct current stimulation to prefrontal cortex alters activation and connectivity in reward networks. *Human Brain Mapping*. DOI:10.1002/hbm.22429
2. Chrysikou EG*, **Weber MJ*** and Thompson-Schill SL (2013). A matched filter hypothesis for cognitive control. *Neuropsychologia*. * *The first two authors contributed equally to the preparation of this manuscript.* DOI:10.1016/j.neuropsychologia.2013.10.021
3. **Weber MJ** and Osherson DN (2013). Category-based induction from similarity of neural activation. *Cognitive, Affective, & Behavioral Neuroscience* 14, 24–36.
4. **Weber MJ**, Thompson-Schill SL, Detre JA, and Avants BB (2013). Reproducibility of structure and summary metrics of functional brain networks: Evidence from multiple imaging modalities. *Cognitive, Affective, & Behavioral Neuroscience* 13, 627–640.
5. **Weber MJ** and Thompson-Schill SL (2010). Functional neuroimaging can support causal claims about brain function. *Journal of Cognitive Neuroscience* 22:11, 2415–2416.
6. **Weber MJ** and Osherson DN (2010). Similarity and induction. *Review of Philosophy and Psychology* 1, 245–264.
7. Baron S, Thompson-Schill SL, **Weber MJ**, and Osherson DN (2010). An early stage of conceptual combination: Superimposition of constituent concepts in left anterolateral temporal lobe. *Cognitive Neuroscience* 1:1, 44–51.
8. **Weber MJ**, Thompson-Schill SL, Osherson DN, Haxby JV, and Parsons LM (2009). Predicting judged similarity of natural categories from their neural representations. *Neuropsychologia* 47, 859–868.

Conference abstracts

1. **Weber MJ** and Thompson-Schill SL (April 2014). Cognitive control and object recognition in highlighting. Annual meeting of the Cognitive Neuroscience Society, Boston, MA.

2. **Weber MJ**, Ramakrishnan R, Slevc LR, Patel AD, and Thompson-Schill SL (November 2013). A shared processing resource for musical syntax and semantic competition. Annual meeting of the Psychonomic Society, Toronto, Canada.
3. **Weber MJ**, Messing SB, and Thompson-Schill SL (November 2012). Taxing attentional resources amplifies cue competition in associative learning. Annual meeting of the Psychonomic Society, Minneapolis, MN.
4. Musz E, **Weber MJ**, and Thompson-Schill SL (November 2012). Revealing visual statistical learning with implicit measures. Annual meeting of the Psychonomic Society, Minneapolis, MN.
5. **Weber MJ**, Messing SB, and Thompson-Schill SL (April 2012). Highlighting is amplified by two forms of prefrontal suppression. Annual meeting of the Cognitive Neuroscience Society, Chicago, IL.
6. **Weber MJ**, Messing SB, Rao H, Wolk DA, Detre JA, and Thompson-Schill SL (April 2011). Transcranial direct current stimulation to prefrontal cortex alters blood flow and functional connectivity in reward networks. Annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
7. **Weber MJ** and Osherson DN (November 2008). Neural similarity predicts judged argument strength. Annual meeting of the Society for Neuroscience, Washington, DC.
8. Connolly AC, **Weber MJ**, Norman KA, Thompson-Schill SL, & Osherson D (May 2008). Investigations in measuring neural similarity among natural kind representation using fMRI. Cognitive Neuroscience of Visual Knowledge: Where Vision Meets Memory, Tufts University, Medford, MA.
9. Connolly AC, **Weber MJ**, Osherson D, Norman KA, & Thompson-Schill SL (April 2008). Comparing apples and oranges: Similarity among patterns of neural activation reflects behavioral judgments of concept similarity. Annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
10. **Weber MJ**, Osherson DN, Haxby JV, Parsons LM (November 2007). Predicting similarity judgments from brain activity. Annual meeting of the Society for Neuroscience, San Diego, CA.
11. **Weber MJ**, Osherson DN, Haxby JV, Parsons LM (April 2006). Topography of neural object representations can predict judged similarity. Annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.
12. Seiffert AE, **Weber MJ** and Treisman AM (November 2003). Isolating feature binding in visual search. Annual meeting of the Society for Neuroscience, New Orleans, LA.

Invited talks

- 2013 University of Cincinnati & Cincinnati Children's Hospital, Cincinnati, OH
Cognitive Neurology group, Johns Hopkins School of Medicine, Baltimore, MD
- 2012 Center for Cognitive Neuroscience, University of Pennsylvania, Philadelphia, PA
Haskins Laboratories, New Haven, CT
Department of Psychology, Swarthmore College, Swarthmore, PA
- 2009 Henry Luce Foundation, Princeton, NJ
- 2008 Center for Cognitive Neuroscience, University of Pennsylvania, Philadelphia, PA

Research interests

My postdoctoral work focuses on the role of prefrontally mediated cognitive control in learning, retrieval, and choice. I'm currently investigating this the interaction between learning and cognitive control with behavioral paradigms including cue competition, statistical learning, and category-based induction, modulating prefrontal efficacy with dual-task manipulations and transcranial direct current stimulation (tDCS). I'm also investigating the neural effects of tDCS over prefrontal cortex using BOLD and perfusion fMRI and graph theory approaches, as well as the overlap between prefrontal systems involved in word generation and music comprehension.

In my dissertation, I developed fMRI analysis methods to read out conceptual structure from lateral occipital visual areas, as well as a quantitative model to relate that conceptual information to category-based induction.

Courses taught

- Cognitive Neuroscience (Instructor, Fall 2013, Spring 2014; 240 students total)
- Introduction to Connectionist Modeling (Assistant in instruction, Spring 2009; 17 students)
- Fundamentals of Neuroscience (Assistant in instruction, Fall 2007 and 2008; 140 students total)
- Cognitive Psychology (Assistant in instruction, Fall 2006; 30 students)

Professional service

- 2010 Breakout session leader, University of Pennsylvania Neuroscience Boot Camp
- 2004–2008 Organizing committee, Princeton Research Symposium
<http://www.princeton.edu/~prs>

Ad hoc reviewing: *Cognitive Neuroscience*, *Journal of Cognitive Neuroscience*, *NeuroImage*, *Neuropsychologia*, *Perspectives in Psychological Science*, *Philosophical Transactions of the Royal Society B*.

Synergistic activities

- 2012– Junior editor, American Journal Experts
- 2007–2009 Statistics tutor, Princeton University Department of Psychology
- 2006–2009 Teaching transcript, McGraw Center for Teaching & Learning, Princeton University
- 2003–2008 Writing Fellow, Princeton University Writing Center

Students supervised

- Trevin Glasgow (junior independent work, U. of Pennsylvania, 2013–14)
- Krista Engle (senior independent work, U. of Pennsylvania, 2012)
- Kristina Woodard (summer independent work, U. of Pennsylvania, 2012)
- Rithika Ramakrishnan (junior and senior independent work, U. of Pennsylvania, 2010–12)
- Matthew Sanders (junior paper, Princeton University, 2007)
- Carolyn Pauker (undergraduate thesis, Tulane University, 2006)
- Bhargav Katikaneni (Ossining High School Fundamentals of Science program, 2004)