

# Mark A. Thornton

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## Employment and Education

2017 - present      Postdoctoral research associate. Princeton University.  
2011 - 2017        Ph.D. Psychology. Harvard University.  
2011 - 2013        A.M. Psychology. Harvard University.  
2007 - 2011        A.B. Psychology. Princeton University

## Honors and Awards

2015                Sackler Scholar in Psychobiology  
2015                Social and Affective Neuroscience Society Trainee Award  
2014                Harvard University Certificate of Distinction in Teaching  
2013                Harvard University Certificate of Distinction in Teaching  
2012                National Science Foundation Graduate Research Fellowship  
2011                Edward E. Jones Memorial Thesis Prize, Princeton University  
2011                Summa cum laude, Princeton University  
2011                Phi Beta Kappa, Princeton University  
2011                Sigma Xi, Princeton University  
2009                Shapiro Prize for Academic Excellence, Princeton University

## Publications

Thornton, M. A., & Mitchell, J. P. (in press). Theories of person perception predict patterns of neural activity during mentalizing. *Cerebral Cortex*.

Thornton, M. A., & Mitchell, J. P. (2017). Consistent neural activity patterns represent personally familiar people. *Journal of Cognitive Neuroscience*, 29(9), 1583-1594.

Thornton, M. A., & Tamir, D. I. (2017). Mental models accurately predict emotion transitions. *Proceedings of the National Academy of Sciences of the United States of America*, 14(23), 5982-5987.

Rodriguez, S. B.\*, Thornton, M. A.\*, & Thornton, R. J. (2017). Discrimination of Wine Lactic Acid Bacteria by Raman Spectroscopy. *Journal of Industrial Microbiology and Biotechnology*, 48(8), 1167-1175.

\*equal contributions

Tamir, D. I.\*, Thornton, M. A.\*, Contreras, J. M., & Mitchell, J. P. (2016). Neural evidence that three dimensions organize mental state representation: rationality, social impact, and valence. *Proceedings of the National Academy of Sciences of the United States of America*, 113(1), 194-199.

\*equal contributions

Rodriguez, S. B., Thornton, M. A., & Thornton, R. J. (2013). Raman spectroscopy and chemometrics for identification and strain discrimination of the wine spoilage yeasts *Saccharomyces cerevisiae*, *Zygosaccharomyces bailii*, and *Brettanomyces bruxellensis*. *Applied and Environmental Microbiology*, 79(20), 6264-6270.

Thornton, M. A., & Conway, A. R. A. (2013). Working memory for social information: Chunking or domain-specific buffer? *NeuroImage*, 70, 233-239.

## Working Manuscripts

Thornton, M. A., Weaverdyck, M. E., Mildner, J. N., & Tamir, D. I. (submitted). Neural representations of others' mental states grow less distinct with social distance.

Thornton, M. A., Weaverdyck, M. E., & Tamir, D. I. (in preparation). Neural representations of people and mental states reflexively encode predictions of future states.

## Conference Presentations

Thornton, M. A., Weaverdyck, M. E., & Tamir, D. I. (2017, March). Neural representations of others' mental states grow less distinct with psychological distance. Poster presented at the Social and Affective Neuroscience Society annual meeting, Los Angeles, CA.

Thornton, M. A., & Mitchell, J. P. (2017, January). Theories of person perception predict patterns of neural activity during mentalizing. Talk presented at the Society for Personality and Social Psychology annual meeting, San Antonio, TX.

Thornton, M. A., & Tamir, D. I. (2017, January). Mental models accurately predict emotion transitions. Talk presented at the Society for Personality and Social Psychology annual meeting, San Antonio, TX.

Thornton, M. A., & Mitchell, J. P. (2016, April). Theories of person perception predict patterns of neural activity during mentalizing. Poster presented at the Social and Affective Neuroscience Society annual meeting, New York, NY.

- Thornton, M. A., & Mitchell, J. P. (2016, February). Theories of person perception predict patterns of neural activity during mentalizing. Talk presented at the Social Brain Sciences Symposium, Waltham, MA.
- Thornton, M. A., & Tamir, D. I. (2016, January). Representing other minds. Poster presented at the Society for Personality and Social Psychology annual meeting, San Diego, CA.
- Thornton, M. A., & Mitchell, J. P. (2016, January). Theories of person perception predict patterns of neural activity during mentalizing. Poster presented at the Society for Personality and Social Psychology annual meeting Social Cognition Preconference, San Diego, CA.
- Thornton, M. A., & Mitchell, J. P. (2015, April). Ventral medial prefrontal cortex supports a multidimensional code for similarity to self. Talk presented at the Social and Affective Neuroscience annual meeting, Boston, MA.
- Thornton, M. A., & Mitchell, J. P. (2015, March). Ventral medial prefrontal cortex supports a multidimensional code for similarity to self. Poster presented at Cognitive Neuroscience Society annual meeting, San Francisco, CA.
- Thornton, M. A., & Mitchell, J. P. (2014, April). The neural organization of person knowledge. Poster presented at Social and Affective Neuroscience Society annual meeting, Denver, CO.
- Thornton, M. A., Tamir, D. I., Contreras, J. M., & Mitchell, J. P. (2014, April). Neural organization of mental state knowledge. Poster presented at Cognitive Neuroscience Society annual meeting, Boston, MA.
- Thornton, M. A., Tamir, D. I., Contreras, J. M., & Mitchell, J. P. (2014, February). Neural representations of mental states are encoded according to agency and experience. Talk presented at Social Brain Sciences Symposium, Chestnut Hill, MA.
- Thornton, M. A., & Mitchell, J. P. (2013, July). Efficiency in social working memory. Poster presented at Wellcome Trust Summer School on the Biology of Social Cognition, Hinxton, UK.
- Thornton, M. A., Contreras, J. M., & Mitchell, J. P. (2012, December). Greater FFA pattern similarity for other-race than same-race faces. Talk presented at Social Brain Sciences Symposium, Cambridge, MA.

## **Invited Talks**

2017 Princeton University, Neuroscience of Social Decision Making

## Software

Thornton, M. A. (2016) MatlabTFCE: A pure MATLAB implementation of multiple comparison correction for functional magnetic resonance imaging via maximal statistic permutation testing with threshold free cluster enhancement. Available online at: <https://github.com/markallenthornton/MatlabTFCE>

Thornton, M.A. (2016) Swarm simulator: An interaction web application for simulating collection animal behavior. Available online at: <http://markallenthornton.com/blog/swarm-simulation/>

Thornton, M.A. (2015) Network Centrality Demo: A web tool for learning about social network structure by interactively constructing graphs. Available online at: <http://markallenthornton.com/blog/centrality-demo/>

Thornton, M.A. (2014) Book recommender for Project Gutenberg: A text analysis based recommendation system for free ebooks. Available online at: <http://markallenthornton.com/recommender/>

## Teaching and Advising

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|-------------|---|
| 2013 - 2015 | <b>Teaching Fellow</b><br>Psych 1950, Intermediate Statistical Analysis in Psychology<br>Harvard University, Department of Psychology |
| 2011        | <b>Senior Peer Academic Advisor</b><br>Princeton University, Mathey College   |
| 2008        | <b>Mathematics Instructor and Summer Advisor</b><br>Upward Bound, Central High School, Fresno, California                             |

## Professional Service

Ad hoc reviewer – *Frontiers in Psychology, Social Neuroscience, Social Cognitive and Affective Neuroscience, The Journal of Neuroscience, Neuropsychologia, Journal of Experimental Psychology: General, Nature Human Behaviour*

## Memberships

Social and Affective Neuroscience Society (2013-Present)  
Society for Personality and Social Psychology (2015-Present)  
Cognitive Neuroscience Society (2013-2015)

## **Technical Skills**

Statistical Analysis: linear modelling, mixed effects modelling, factor analysis, structural equation modelling, Monte Carlo simulation, multivoxel pattern analysis, classification and unsupervised machine learning, bootstrapping and nonparametric statistics, webscraping, social network analysis, quantitative text analysis

Programming: MATLAB, Python, R, Bash, HTML/CSS, Javascript, PHP, MySQL