

# Mark Thornton

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## EMPLOYMENT AND EDUCATION

2020 - present	Assistant Professor, Psychological and Brain Sciences, Dartmouth College
2017 - 2020	Postdoctoral Research Associate, Psychology & PNI, Princeton University
2011 - 2017	Ph.D., Psychology, Harvard University
2011 - 2013	A.M., Psychology, Harvard University
2007 - 2011	A.B., Psychology, Princeton University

## PUBLICATIONS

\*indicates equal contributions

- Lin, C., Keles, U., Thornton, M. A., & Adolphs, R. (Accepted). How trait impressions of faces shape subsequent mental state inferences. *Nature Human Behaviour*.  
[\[Stage 1 Protocol\]](#) [\[Data & code\]](#)
- Sened, H., Phan, T., Thornton, M. A., Verosky, S., & Tamir, D. (2024). Disentangling the effects of similarity, familiarity, and liking on social inference strategies. *British Journal of Social Psychology*.  
[\[Paper\]](#) [\[Preprint\]](#) [\[Data & code\]](#)
- Nencheva, M. L., Nook, E. C., Thornton, M. A., Lew-Williams, C., & Tamir, D. (2024). The emergence of organized emotion dynamics in childhood. *Affective Science*.  
[\[Paper\]](#) [\[Preprint\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- Barrick, E., Thornton, M. A., Zhao, Z., & Tamir, D. I. (2024) Individual differences in emotion prediction and implications for social success. *Emotion*.  
[\[Paper\]](#) [\[Preprint\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- Sievers, B.\*, & Thornton, M.A.\* (2024). Deep social neuroscience: The promise and peril of using artificial neural networks to study the social brain. *Social Cognitive and Affective Neuroscience*, 19(1).  
[\[Paper – open access\]](#) [\[Preprint\]](#)
- Thornton, M. A., & Tamir, D. I. (2024). Neural representations of situations and mental states are composed of sums of representations of the actions they afford. *Nature Communications*, 15(1).  
[\[Paper – open access\]](#) [\[Preprint\]](#) [\[Data & code\]](#)

- Tamir, D. I., & Thornton, M. A., (2024). Predicting other people shapes the social mind. *Advances in Experimental Social Psychology*, 69, 263-315.  
[\[Paper\]](#) [\[PDF\]](#)
- Wheatley, T.\*, Thornton, M. A.\*, Stolk, A.\*, & Chang, L.J.\*, (2024). The emerging science of interacting minds. *Perspectives on Psychological Science*, 19(2), 355-373.  
[\[Paper\]](#) [\[PDF\]](#)
- Lin, C., Bulls, L. S.\*, Tepfer, L. J.\*, Vyas, A.\*, Thornton, M. A., (2023). Advancing naturalistic affective science with deep learning. *Affective Science*, 4, 550-562.  
[\[Paper\]](#) [\[Preprint\]](#)
- Lin, C., & Thornton, M. A. (2023). Evidence for bidirectional causation between trait and mental state inferences. *Journal of Experimental Social Psychology*, 108, 104495.  
[\[PDF\]](#) [\[Preprint\]](#) [\[Data & code\]](#)
- Thornton, M. A., Rmus, M., Vyas, A. D., & Tamir, D. I. (2023). Transition dynamics shape mental state concepts. *Journal of Experimental Psychology: General*, 152(10), 2804–2829.  
[\[PDF\]](#) [\[Preprint\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- Thornton, M. A., Wolf, S., Reilly, B. J., Slingerland, E. G. & Tamir, D. I. (2022). The 3d Mind Model characterizes how people understand mental states across modern and historical cultures. *Affective Science*, 3(1), 93-104.  
[\[Paper\]](#) [\[Preprint\]](#) [\[Data & code\]](#)
- Thornton, M. A., & Tamir, D. I. (2022). Six dimensions describe action understanding: the ACT-FASTaxonomy. *Journal of Personality and Social Psychology*, 122(4), 577-605.  
[\[Paper\]](#) [\[Preprint\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- Zhao, Z., Thornton, M. A., & Tamir, D. I. (2022). Accurate emotion prediction in dyads and groups and its potential social benefits. *Emotion*, 22(5), 1030-1043.  
[\[Paper\]](#) [\[Preprint\]](#) [\[Data & code\]](#)
- Barrick, E. M., Thornton, M. A., & Tamir, D. I. (2021). Mask exposure during COVID-19 changes emotional face processing. *PLoS ONE*, 0258470.  
[\[Paper – open access\]](#) [\[Preprint\]](#) [\[Data & code\]](#)
- Weaverdyck, M. E., Thornton, M. A., & Tamir, D. I. (2021). Stable neural representations of mental states across target people and stimulus modalities. *NeuroImage*, 238, 118258.  
[\[Paper – open access\]](#) [\[Preprint\]](#) [\[Data & code\]](#)
- Thornton, M. A., & Tamir, D. I. (2021). The organization of social knowledge is tuned for prediction. In M. Gilead & K. Ochsner (Ed.) *The Neural Basis of Mentalizing*. Springer Nature.  
[\[Chapter\]](#) [\[Book\]](#)

- Thornton, M. A., & Tamir, D. I. (2021). People accurately predict the transition probabilities between actions. *Science Advances*, 7(9), eabd4995.  
[\[Paper – open access\]](#) [\[Preprint\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- Thornton, M. A., & Tamir, D. I. (2020). Perceiving actions before they happen: Psychological dimensions scaffold neural action prediction. *Social Cognitive and Affective Neuroscience*, 16(8), 807-815.  
[\[Paper – open access\]](#) [\[Preprint\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- Thornton, M. A., & Tamir, D. I. (2020) People represent mental states in terms of rationality, social impact, and valence: Validating the 3d Mind Model. *Cortex*, 125, 44-59.  
[\[Paper\]](#) [\[Preprint\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- Thornton, M. A., Weaverdyck, M. E., & Tamir, D. I. (2019). The brain represents people as the mental states they habitually experience. *Nature Communications*, 10, 2291.  
[\[Paper – open access\]](#) [\[Preprint\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- Thornton, M. A., Weaverdyck, M. E., Mildner, J. N., & Tamir, D. I. (2019) People represent their own mental states more distinctly than those of others. *Nature Communications*, 10, 2117.  
[\[Paper – open access\]](#) [\[Preprint\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- Thornton, M. A., Weaverdyck, M. E., & Tamir, D. I. (2019). The social brain automatically predicts others' future mental states. *The Journal of Neuroscience*, 39(1), 140-148.  
[\[Paper\]](#) [\[Preprint\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- Tamir, D. I.\*, Thornton, M. A.\* (2018). Modeling the predictive social mind. *Trends in Cognitive Sciences*, 22(3) 201-212.  
[\[PDF\]](#) [\[Commentary by Rebecca Saxe\]](#)
- Thornton, M. A., & Mitchell, J. P. (2018). Theories of person perception predict patterns of neural activity during mentalizing. *Cerebral Cortex*, 28(10), 3505-3520.  
[\[PDF\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- Thornton, M. A., & Mitchell, J. P. (2017). Consistent neural activity patterns represent personally familiar people. *Journal of Cognitive Neuroscience*, 29(9), 1583-1594.  
[\[PDF\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- 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.  
[\[PDF\]](#) [\[Data & code\]](#) [\[Blog\]](#)

- 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.  
[\[PDF\]](#) [\[Data & code\]](#) [\[Blog\]](#)
- 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.  
[\[PDF\]](#) [\[Data & code\]](#) [\[Blog\]](#) [\[Commentary by Dubois & Adolphs\]](#)
- 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.  
[\[PDF\]](#) [\[Blog\]](#)
- Thornton, M. A., & Conway, A. R. A. (2013). Working memory for social information: Chunking or domain-specific buffer? *NeuroImage*, 70, 233-239.  
[\[PDF\]](#)

## PREPRINTS AND MANUSCRIPTS

- Thornton, M.A. (Invited submission, *Cognition and Emotion*). Deep learning models of emotion understanding. *PsyArXiv*.  
[\[Preprint\]](#)
- Lin, C., & Thornton, M. A. (2024). Bottom-up and top-down information determinants of naturalistic trait impression updating. *PsyArXiv*.  
[\[Preprint\]](#) [\[Data & code\]](#)
- Cheng, X.\*, Popal, H.\*, Wang, H.\*, Hu, R., Zang, Y., Zhang, M., Thornton, M. A., Cai, H., Bi, Y., Reilly, J., Olson, I. R., Wang, Y. (2023). The Conceptual Structure of Human Relationships Across Modern and Historical Cultures. *PsyArXiv*.  
[\[Preprint\]](#) [\[Data & code\]](#)
- Lin, C., & Thornton, M. A. (2021). Fooled by beautiful data: Visualization aesthetics bias trust in science, news, and social media. *PsyArXiv*.  
[\[Preprint\]](#) [\[Data & code\]](#)

## HONORS AND AWARDS

- |      |   |
|------|---|
| 2021 | Association for Psychological Science Rising Star         |
| 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, Phi Beta Kappa, and Sigma Xi, Princeton University
- 2009 Shapiro Prize for Academic Excellence, Princeton University

## FUNDING

- 2023 Hopkins Arts Integration Program grant, Dartmouth College
- 2022 CompX Grant, Neukom Institute for Computational Science, Dartmouth College
- 2015 Sackler Scholar in Psychobiology, Harvard University
- 2012 National Science Foundation Graduate Research Fellowship

## INVITED TALKS

- 2024 Michigan State University, Communication Science Futures
- 2024 SANS, AI Approaches to Social and Affective Neuroscience
- 2023 Gordon Research Conference, Visualization in Science and Education
- 2023 Tel Aviv University, Empathies, Brain, and the Moving Image
- 2021 University of Pennsylvania, Social and Behavioral Science Initiative
- 2021 Harvard University, Computational Approaches to Social Cognition
- 2020 IMT School Lucca, Neuroscience Research Seminar
- 2019 Johns Hopkins University, Social Cognition from Flies to Humans
- 2019 Dartmouth University, Methods in Neuroscience at Dartmouth
- 2018 Brown University, Social Cognitive Science Brown Bag
- 2018 Harvard University, Methods Dinners
- 2018 Technische Universität Dresden, Understanding Others
- 2018 Dartmouth University, Methods in Neuroscience at Dartmouth
- 2018 New York University, Concepts and Categories Seminar
- 2018 Princeton University, Social Research Seminar
- 2017 Dartmouth College, Center for Social Brain Sciences
- 2017 Princeton University, Neuroscience of Social Decision Making

## TEACHING AND ADVISING

- 2022-2024 Instructor  
Psyc 23: Social Psychology  
Dartmouth College, Department of Psychological and Brain Science
- 2021-2023 Instructor  
Psyc 83.08: Social and Neural Networks  
Dartmouth College, Department of Psychological and Brain Science
- 2021-2023 Instructor  
Psyc 43: Emotion

Dartmouth College, Department of Psychological and Brain Science

- 2021, 2025      Instructor  
 Psyc 10: Experimental Design, Methodology, and Data Analysis  
 Procedures  
 Dartmouth College, Department of Psychological and Brain Science
- 2018 - 2019      Instructor/Pop-up PI  
 Methods in Neuroscience at Dartmouth (MIND) Computational Summer  
 School
- 2013 - 2015      Teaching Fellow  
 Psych 1950, Intermediate Statistical Analysis in Psychology  
 Harvard University, Department of Psychology
- 2011              Senior Peer Academic Advisor  
 Princeton University
- 2008              Mathematics Instructor and Summer Advisor  
 Upward Bound, Central High School, Fresno, California

## **PROFESSIONAL SERVICE AND MEMBERSHIPS**

### Service to field:

- 2024              Lead organizer, SPSP Computational Preconference  
 2023              Co-organizer, Methods in Neuroscience at Dartmouth  
 2023-present      Social Media Co-chair, SANS  
 2022-present      Director-at-Large, SANS Board  
 2022-2023      Panelist, Princeton Academic Job Market Panel  
 2022              Co-organized SANS Naturalistic Data Analysis Challenge  
 2021              SANS program committee

### Departmental/college service:

- 2023 - 2024      Member, Committee on Faculty, Dartmouth College  
 2023 - 2024      Member, Neuroscience Committee, Dartmouth PBS  
 2022 - 2023      Member, Norms and Wellbeing Committee, Dartmouth PBS  
 2022 - 2023      Member, Behavioral/Systems Faculty Search Committee, Dartmouth PBS  
 2021 - present      Departmental Twitter account operator, Dartmouth PBS  
 2021 – 2022      Member, Wellbeing Committee, Dartmouth PBS  
 2020 - 2021      Member, Inclusivity, Diversity, and Culture Committee, Dartmouth PBS

### Ad hoc reviewer:

*Proceedings of the National Academy of Sciences, Nature Human Behaviour, Nature Communications, Current Biology, Journal of Personality and Social Psychology: Attitudes and Social Cognition, Social Cognitive and Affective Neuroscience, NeuroImage, Cortex, Cerebral Cortex, Psychological Review, Frontiers in Psychology,*

*Social Neuroscience, The Journal of Neuroscience, Neuropsychologia, Journal of Experimental Psychology: General, Cognitive Affective and Behavioral Neuroscience, Neuroscience and Biobehavioral Reviews, Collective Intelligence, Memory and Cognition, Psychonomic Bulletin & Review, Journal of Research in Personality, Developmental Science, Organizational Behavioral and Human Decision Processes, Translational Neurodegeneration, eLife, Journal of Experimental Social Psychology, Social Psychological and Personality Science, Scientific Reports, iScience*

Memberships:

2013 - present	Social and Affective Neuroscience Society
2015 - present	Society for Personality and Social Psychology
2018 - 2019, 2022-2023	Association for Psychological Science
2018 - 2019	Society for Neuroscience
2013 - 2015	Cognitive Neuroscience Society