

Melissa Thye

POSTDOCTORAL RESEARCH ASSISTANT · PSYCHOLOGY

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Interests

RESEARCH

- Semantic Memory
- Narrative Comprehension
- Social Processing
- Naturalistic Neuroimaging
- Neurodiversity
- Open Science

TEACHING

- Cognitive Neuroscience
- Neuroimaging Study Design & Analysis
- Research Methods
- Developmental Psychology

Employment

2025 - Postdoctoral Research Assistant, University of Edinburgh

- Clarifying the neurocognitive mechanisms of emotion reasoning and development in school-aged children

2023 - 2025 Postdoctoral Research Associate, University of Edinburgh

- PREterm Neurodevelopment and COGnition (PRENCOG) MRC Programme Grant

2023 Research Assistant, Department of Psychology, University of Edinburgh

- Mental Health in the Moment - ADHD

2022 Human Testing Technician, Department of Psychology, University of Edinburgh

- A Registered Re-examination of Prism Adaptation on Landmark Judgements

2021 - 2022 Research Assistant, Department of English Literature, University of Edinburgh

- Difficulty & Pleasure in the Comprehension of Metaphors using fNIRS

2019 - 2023 Research Assistant, University of Edinburgh

- Cognitive & Neural Basis of Functional Communication Deficits in Post-Stroke Aphasia

2014 - 2015 Therapist & Teacher, Florida Autism Center, Sanford, FL

Education

2019 - 2023 Ph.D., Psychology, University of Edinburgh

- Thesis Title: *Neural basis of semantic processing across comprehension contexts*
- Supervisors: Daniel Mirman & Paul Hoffman

2015 - 2017 M.A., Lifespan Developmental Psychology, University of Alabama at Birmingham

2010 - 2014 B.S., Psychology (Summa Cum Laude), University of Central Florida, Burnett Honors College

- Cognitive Sciences Minor

SPECIALIST TRAINING

2017 MRI Safety & Operation Training, Siemens MAGNETOM Prisma 3.0T MRI Scanner

2016 Multimodal Neuroimaging Training Program, Pittsburgh, PA

- Diffusion Weighted Imaging Modality, Instructor: Fang-Cheng Yeh, MD, PhD

2016 FreeSurfer Course, Boston, MA

Teaching & Mentoring Experience

2025 **Specialist Techniques in Cognitive Neuroscience**, Lecturer, *University of Edinburgh*

- Functional Near-Infrared Spectroscopy (fNIRS) Module

2023 **Neuroscience of Language**, Guest Lecturer, *University of Edinburgh*

- Lecture Titles: *What Narratives Reveal about the Neurobiology of Language*

Language In Autism: Historical Perspectives and Opportunities for the Future

2021 **Research Methods in Cognitive Science**, Guest Lecturer, *Rutgers University*

- Lecture Title: *Using fMRI (and more!) to Study Human Cognition*

2018 **Developmental Psychology**, Course Organiser & Lecturer, *University of Alabama at Birmingham*

2017 **Clinical Psychology**, Teaching Assistant, *University of Alabama at Birmingham*

2016 **Associate's Certificate**, *Center for the Integration of Research, Teaching, and Learning*

2013 - 2014 **Psychopathology**, Teaching Assistant, *University of Central Florida*

Supervision: 5 research assistants, 2 undergraduate dissertations, 1 MSc dissertation

Awards, Fellowships, & Grants

2025 **Travel Award**, *Flux Congress*

\$500

2022 **CAHSS Challenge Investment Fund**, *University of Edinburgh*

£8,600

- Project: The Neural Basis of Semantic and Social Cognition in Autism
- Role: Key Collaborator

2023 **Research Support Grant**, *University of Edinburgh*

£425

2022 **Research Support Grant**, *University of Edinburgh*

£460

2022 **Research Support Grant**, *University of Edinburgh*

£815

2016 **Civitan Emerging Scholars Fellowship**, *University of Alabama at Birmingham*

\$25,000

2016 **Ireland Research Travel Scholarship**, *University of Alabama at Birmingham*

\$1,000

2015 - 2017 **College of Arts and Sciences Graduate Fellowship**, *University of Alabama at Birmingham*

\$32,000

2014 **Distinguished Undergraduate Researcher Award**, *University of Central Florida*

2010 - 2014 **Florida Academic Scholars Award**, *University of Central Florida*

Publications

PEER REVIEWED PUBLICATIONS

*equally contributing authors

Mckinnon, K., Blesa Cábez, M., **Thye, M.**, Abel, S., Smikle, R., Skelton, J., Jiménez-Sánchez, L., Vaher, K., Sullivan, G., Corrigan, A., Barclay, G., Jardine, C., Gerrish, I., McIntyre, D., Chua, Y.W., Amir, R., Quigley, A.J., Battersby, C., Tsanas, A., Batty, G.D., Reynolds, R.M., Cox, S.R., Whalley, H.C., Thrippleton, M.J., Bastin, M.E., Richardson, H., & Boardman, J.P. (2025). Preterm birth, socioeconomic status, and white matter development across childhood. *Developmental Cognitive Neuroscience*.

Thye, M., Ding, J., Hoffman, P., & Mirman, D. (2025). Functional connectivity of semantic and default mode networks during narrative comprehension. *Cerebral Cortex*. bhaf289



Thye, M., Hoffman, P., & Mirman, D. (2025). Neural correlates of social and thematic semantics in autistic and non-autistic adults. *Social Cognitive and Affective Neuroscience*. 10.1093/scan/nsaf079



Thye, M., Hoffman, P., & Mirman, D. (2024). 'All the stars will be wells with a rusty pulley': Neural processing of the social and pragmatic content in a narrative. *Journal of Cognitive Neuroscience*, 1–23. 10.1162/jocn_a_02228



Thye, M., Hoffman, P., & Mirman, D. (2024). The neural basis of naturalistic semantic and social cognition. *Scientific Reports*, 14, 6796. 10.1038/s41598-024-56897-3



Ding, J., **Thye, M.**, Edmondson-Stait, A., Szaflarski, J.P., & Mirman, D. (2024). Metric comparison of connectome-based lesion-symptom mapping in post-stroke aphasia. *Brain Communications*.

Murray, A.L., **Thye, M.**, Obsuth, I., Cai, S., Liu, M., Orr, C., & Saravanan, A. (2024). A narrative review to identify promising approaches for digital health interventions to support emotion regulation for adolescents with ADHD. *JMIR Mental Health*. psyarxiv/84jfz

Adezati, E.* , Liu, X.* , Ding, J., **Thye, M.**, Szaflarski, J.P., & Mirman, D. (2024). Phase synchronization during the processing of taxonomic and thematic relations. *Brain & Language*, 249, 105379. 10.1016/j.bandl.2024.105379

Thye, M., Hoffman, P., & Mirman, D. (2023). The words that little by little revealed everything: Neural response to lexical-semantic content during narrative comprehension. *NeuroImage*, 276, 120204. 10.1016/j.neuroimage.2023.120204



Murray, A.L., Speyer, L., **Thye, M.**, Stewart, T., Obsuth, I., Kane, J., Whyte, K., Devaney, J., Rohde, L., Ushakova, A., & Rhodes, S. (2023). Illuminating the daily life experiences of adolescents with and without ADHD: Protocol for an ecological momentary assessment study. *BMJ Open*, 13, e077222. 10.1136/bmjopen-2023-077222

McIntosh, R.D., Ten Brink, A.F., Mitchell, A.G., Jones, H., Peng, N., **Thye, M.**, & Bultitude, J.H. (2023). A registered re-examination of the effects of leftward prism adaptation on landmark judgements in healthy people. *Cortex*, 158, 139-157. 10.1016/j.cortex.2022.11.003



Zevgolatakou, E., **Thye, M.**, & Mirman, D. (2023). Behavioural and neural structure of fluent speech production deficits in aphasia. *Brain Communications*, 5(1), fcac327. 10.1093/braincomms/fcac327

Errington, P., **Thye, M.**, & Mirman, D. (2022). Difficulty and pleasure in the comprehension of verb-based metaphor sentences: A behavioral study . *PLoS ONE*, 17(2), e0263781. 10.1371/journal.pone.0263781



Adezati, E., **Thye, M.**, Edmondson-Stait, A.J., Szaflarski, J.P., & Mirman, D. (2022). Lesion correlates of auditory sentence comprehension deficits in post-stroke aphasia. *NeuroImage: Reports*, 2(1), 100076. 10.1016/j.ynirp.2021.100076



Thye, M., Geller, J., Szaflarski, J.P., & Mirman, D. (2021). Intracranial EEG evidence of functional specialization for taxonomic and thematic relations. *Cortex*, 140, 40-50. 10.1016/j.cortex.2021.03.018



Thye, M., Szaflarski, J.P., & Mirman, D. (2020). Shared lesion correlates of semantic and letter fluency in post-stroke aphasia. *Journal of Neuropsychology*, 15(1), 143-150. 10.1111/jnp.12211



Geller, J., **Thye, M.**, & Mirman, D. (2019). Effects of graded white matter damage and binary tract disconnection on post-stroke language impairment. *NeuroImage*, 189, 248-257. 10.1016/j.neuroimage.2019.01.020



Mirman, D., & **Thye, M.** (2018). Uncovering the neuroanatomy of core language systems using lesion-symptom mapping. *Current Directions in Psychological Science*, 27(6), 455-461. 10.1177/0963721418787486



Thye, M., & Mirman, D. (2018). Relative contributions of lesion location and lesion size to predictions of varied language deficits in post-stroke aphasia. *NeuroImage: Clinical*, 20, 1129-1138. 10.1016/j.nicl.2018.10.017

Goodman, E.S., Boe, L., **Thye, M.**, & Mirman, J.H. (2018). Using community detection analysis to elucidate caregivers' mental models of pediatric concussion symptoms. *Safety*, 4(3), 35. 10.3390/safety4030035

Thye, M.D., Ammons, C.J., Murdaugh, D.L., & Kana, R.K. (2018). Differential recruitment of theory of mind brain network across three tasks: An independent component analysis. *Behavioural Brain Research*, 347, 385-393. 10.1016/j.BBR.2018.03.041

Thye, M.D., Murdaugh, D.L., & Kana, R.K. (2018). Brain mechanisms underlying reading the mind from eyes, voice, and actions. *Neuroscience*, 374, 172-186. 10.1016/J.NEUROSCIENCE.2018.01.045

Thye, M.D.*, Bednarz, H.M.* , Herringshaw, A.J.* , Sartin, E.B.* , & Kana, R.K.* (2018). The impact of atypical sensory processing on social impairments in autism spectrum disorder. *Developmental Cognitive Neuroscience*, 29, 151-167. 10.1016/j.dcn.2017.04.010

CONFERENCE PROCEEDINGS

Errington, P., **Thye, M.**, Tao, A., & Mirman, D. (2024). Effects of ease of comprehension and individual differences on the pleasure experienced while reading novelized verb-based metaphors. *Proceedings of the Annual Meeting of the Cognitive Science Society*, Volume 46.



BOOK CHAPTERS

Mirman, D., & **Thye, M.** (2022). Lesion-Based Prediction and Predictive Inference. In: Pustina, D., Mirman, D. (eds) *Lesion-to-Symptom Mapping*, vol 180 (pp. 219-236). Neuromethods, vol 180. Springer, New York, NY. 10.1007/978-1-0716-2225-4_12

Thye, M. (2022). Automated Segmentation — Tools and Examples: LINDA software. In: Pustina, D., Mirman, D. (eds) *Lesion-to-Symptom Mapping*, vol 180 (pp. 317-323). Neuromethods, vol 180. Springer, New York, NY. 10.1007/978-1-0716-2225-4

Thye, M. (2022). Lesion-Symptom Mapping — Tools and Examples: LESYMAP software. In: Pustina, D., Mirman, D. (eds) *Lesion-to-Symptom Mapping*, vol 180 (pp. 337-341). Neuromethods, vol 180. Springer, New York, NY. 10.1007/978-1-0716-2225-4

UNDER REVIEW

Adezati, E., **Thye, M.**, Butta, S., Pecchioli, L., Hoffman, P., & Mirman, D. (*under review*). Situation model manipulations differently engage semantic and default mode networks during narrative comprehension.

Mirman, D., **Thye, M.**, Burns, N., & Errington, P.J. (*under review*). Grasp the meaning and shake it: The role of prefrontal cortex in creative and critical reading of poeticised verb metaphors.

Zhang, Y., Ding, J., **Thye, M.**, Szaflarski, J.P., & Mirman, D. (*under review*). Decoding semantic category representations across the human brain.

Davis, K.E., Goodman, A.M., **Thye, M.**, Nenert, R.E., Janko, D., Allendorfer, J.B., & Szaflarski, J.P. (*under review*). Intracranial recordings reveal directed functional connectivity between amygdala and orbitofrontal cortex during facial emotion processing.

Presentations

TALKS

Thye, M. (2025, September). *A tale of two networks? Interactivity between the semantic and default networks during narrative comprehension*. Research talk at the British Association of Cognitive Neuroscience, Edinburgh, UK.

Thye, M. (2024, March). *Registered Reports: Why, What, & How*. Research talk at the Open Research Event Series, University of Edinburgh, Edinburgh, UK.

Thye, M. (2023, March). *Registered Reports: Why, What, & How*. Research talk at the Open Research Event Series, University of Edinburgh, Edinburgh, UK. [\[Talk Materials\]](#)

Thye, M. (2021, October). *Open Research: What's in it for me?*. Research talk at the Open Research Event Series, University of Edinburgh, Edinburgh, UK. [\[Talk Materials\]](#)

Thye, M., Szaflarski, J.P., & Mirman, D. (2020, February). *Using intracranial EEG to measure the neural dynamics of language processing*. Research talk at the Language Processing and Representation: Scottish-German Perspectives Workshop, Dundee, UK.

Thye, M. & Kana, R.K. (2017, April). *Characterizing the Heterogeneity in Autism Spectrum Disorder Using Brain Connectivity Underlying Social Cognition*. Research talk at the Civitan International/Simpson-Ramsey Neurodevelopmental Symposium, Birmingham, AL.

POSTERS

Thye, M., Abel, S., Jiménez-Sánchez, L., Mckinnon, K., Skelton, J., Smikle, R., Barclay, G., Gerrish, I., Jardine, C., Mcintyre, D., Batty, G.D., Whalley, H.C., Boardman, J.P., & Richardson, H. (2025, September). *Recovering parallel distributed default networks in early childhood*. Poster presented at the Flux Congress, Dublin, Ireland.

Thye, M., Hoffman, P., & Mirman, D. (2024, September). *Differential engagement of the anterior temporal lobe in response to semantic and social content in narratives*. Poster presented at the Architectures and Mechanisms for Language Processing Meeting, Edinburgh, UK.

Thye, M., Hoffman, P., & Mirman, D. (2022, June). *Activation of semantic and social brain networks during auditory story comprehension*. Poster presented at the Organization for Human Brain Mapping, Glasgow, UK.

- Thye, M.**, Geller, J., Pizarro, D., Szaflarski, J.P., & Mirman, D. (2019, March). *An intracranial EEG study of taxonomic and thematic relations*. Poster presented at the Cognitive Neuroscience Society Meeting, San Francisco, CA.
- Thye, M.**, Geller, J., Pizarro, D., Szaflarski, J.P., & Mirman, D. (2018, November). *An intracranial EEG study of semantic cognition*. Poster presented at the Psychonomic Society Meeting, New Orleans, LA.
- Thye, M.** & Mirman, D. (2018, August). *Relative contributions of lesion location and lesion size to predictions of varied language deficits in post-stroke aphasia*. Poster presented at the Society for the Neurobiology of Language Meeting, Québec City, Canada.
- Thye, M.** & Kana, R.K. (2017, May). *Characterizing the heterogeneity in autism spectrum disorder using brain connectivity underlying social cognition*. Poster presented at the International Meeting for Autism Research, San Francisco, CA.

Open Science Tools



Other Professional Activities

TRAINING

2022 - 2023 **Aurora Leadership Development Initiative, Advance HE**

SERVICE AND OUTREACH

2025 **Symposium Organiser**, British Association of Cognitive Neuroscience

- Symposium Title: *Do Semantic, Social, and Narrative Cognition Share Common Ground?*

2023 - **Scientific Transparency Editor**, Cortex

2023 - 2024 **Edinburgh Science Festival Volunteer**, National Museum of Scotland, Edinburgh, UK

2018 - 2019 **Colloquium Coordinator**, Neuroimaging Journal Club, University of Alabama at Birmingham

2017 - 2019 **Student Representative**, Developmental Psychology, University of Alabama at Birmingham

2016 - 2019 **Brain Awareness Week Volunteer**, McWane Science Center, Birmingham, AL

2013 - 2014 **Service Officer**, Psi Chi International Honors Society, University of Central Florida

2013 **Student Intern**, Center for Autism & Related Disabilities, Orlando, FL

SCIENCE COMMUNICATION

*† *equally contributing authors*

Jiménez-Sánchez, L*, **Thye, M.***, Abel, A.†, Bhatt, N.†, Mckinnon, K.†, Rubin, R.†, Skelton, J.†, Smikle, R.†, Vaher, K.†, & Richardson, H. (2025). Behind the scenes: Using movies to study the human brain. *Frontiers for Young Minds*. 10.3389/frym.2025.1508144

PEER REVIEW

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| <ul style="list-style-type: none"> • Cortex • eNeuro • PLoS ONE • Neuropsychologia • Scientific Reports | <ul style="list-style-type: none"> • Imaging Neuroscience • Journal of Neuroscience • Brain and Language • Brain Topography • Assistive Technology | <ul style="list-style-type: none"> • NeuroImage: Clinical • Brain Structure and Function • Quarterly Journal of Experimental Psychology • Epilepsy & Behavior Reports |
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Grant Proposals

- National Science Foundation (NSF) Doctoral Dissertation Research Improvement Proposal

Conference Abstracts

- Society for the Neurobiology of Language 2025 Meeting
- Architectures and Mechanisms for Language Processing 2024 Meeting