

Melissa Thye

POSTDOCTORAL RESEARCH ASSOCIATE · CENTRE FOR REPRODUCTIVE HEALTH

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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

2023 - **Research Associate in Developmental Cognitive Neuroscience**, *University of Edinburgh*

- MRC Programme Grant: PREterm Neurodevelopment and COgnition (PRENCOG)

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*

- 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

- 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*
- Co-Supervision:** 4 undergraduate dissertations, 3 MSc dissertations, 5 research assistants

PLANNED

- 2025 **Specialist Techniques in Cognitive Neuroscience**, Lecturer, *University of Edinburgh*
 - Functional near-infrared spectroscopy (fNIRS) Module





Awards, Fellowships, & Grants

- 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

- 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/84jfb
- 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*, 46. 



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

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

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

Presentations _____

INVITED

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

SUBMITTED

Thye, M., Hoffman, P., & Mirman, D. (2024). *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., 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., 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.

Other Professional Activities _____

TRAINING

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

SERVICE AND OUTREACH

- 2023 - Assistant Editor (Transparency and Openness Promotion), 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

PEER REVIEW

- Journal of Neuroscience
- Imaging Neuroscience
- NeuroImage: Clinical
- Brain and Language
- Neuropsychologia
- eNeuro
- PLoS ONE
- Scientific Reports
- Brain Structure and Function
- Quarterly Journal of Experimental Psychology
- Epilepsy & Behavior Reports
- Assistive Technology

Grant Review: National Science Foundation (NSF) Doctoral Dissertation Research Improvement Proposal