

MARLENE D. BERKE

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EDUCATION

Yale University

2019 - Present

PhD in Cognitive Psychology

Advisor: Prof. Julian Jara-Ettinger

Dissertation: Metacognition in Minds and Machines

Cornell University

2015 - 2019

BA in College Scholar: Computational Cognitive Neuroscience

Minors in Statistics, Biology, Psychology, and Cognitive Science

GPA: 4.0.

JOURNAL PUBLICATIONS

Berke, M., Tenenbaum, A., Sterling, B., & Jara-Ettinger, J. (*in prep*). People reconstruct others' cognitive processes by representing their minds as computational systems.

Horschler*, D.J., **Berke***, M., Santos, L.R., & Jara-Ettinger, J. (*in prep*). Differences between human and non-human primate Theory of Mind: Evidence from computational modeling. preprint

Rubio-Fernandez, P., **Berke, M.**, & Jara-Ettinger, J. (2024). Tracking minds in communication. *Trends in Cognitive Sciences*. [link](#)

Berke, M., & Jara-Ettinger, J. (2024). Core knowledge, visual illusions, and the discovery of the self. Commentary on Spelke. *Behavioral and Brain Sciences*. [link](#)

Berke, M., Walter-Terrill, R., Jara-Ettinger, J., & Scholl, B. J. (2022). Flexible goals require that inflexible perceptual systems produce veridical representations: Implications for realism as revealed by evolutionary simulations. *Cognitive Science*. [link](#)

CONFERENCE PROCEEDING PAPERS

Berke, M., Azerbayev, Z., Belledonne, M., Tavares, Z., & Jara-Ettinger, J. (2024). MetaCOG: A hierarchical probabilistic model for learning meta-cognitive visual representations. *Proceedings of the 40th Conference on Uncertainty in Artificial Intelligence*. [link](#)

Berke, M., Sterling, B., Tenenbaum, A., & Jara-Ettinger, J. (2024). No signatures of first-person simulation in Theory of Mind judgments about thinking. *Proceedings of the 46th Annual Conference of the Cognitive Science Society*. [link](#)

Tan, Z. T., Jara-Ettinger, J., & **Berke, M.** (2024). Reasoning about knowledge in lie production. *Proceedings of the 46th Annual Conference of the Cognitive Science Society*. [link](#)

Berke, M., Tenenbaum, A., Sterling, B., & Jara-Ettinger, J. (2023). Thinking about thinking as rational computation. *Proceedings of the 45th Annual Conference of the Cognitive Science Society*. [link](#)

Berke, M., & Jara-Ettinger, J. (2022). Integrating experience into Bayesian Theory of Mind. *Proceedings of the 44th Annual Conference of the Cognitive Science Society*. [link](#)

Berke, M., & Jara-Ettinger, J. (2021). Thinking about thinking through inverse reasoning. *Proceedings of the 43rd Annual Conference of the Cognitive Science Society*. [link](#)

Berke, M., Field, D., & Cleland, T. (2017). The sparse structure of natural chemical environments. *Proceedings from the International Symposium on Olfaction and Electronic Nose (ISOEN)*. [link](#)

CONFERENCE TALKS AND PRESENTATIONS

Berke, M., Azerbayev, Z., Belledonne, M., Tavares, Z., & Jara-Ettinger, J. (2024). MetaCOG: A hierarchical probabilistic model for learning meta-cognitive visual representations. Poster at the 40th Conference on Uncertainty in Artificial Intelligence.

Tan, Z. T., Jara-Ettinger, J., & **Berke, M.** (presenter) (2024). Reasoning about Knowledge in Lie Production. Talk at the 50th annual meeting of the Society for Philosophy and Psychology. Talk also presented at the 46th Annual Conference of the Cognitive Science Society.

Berke, M., Sterling, B., Tenenbaum, A., & Jara-Ettinger, J. (2024). No signatures of first-person biases in Theory of Mind judgments about thinking. Talk at the 46th Annual Conference of the Cognitive Science Society.

Berke, M., Tenenbaum, A., Sterling, B., & Jara-Ettinger, J. (2023). Thinking about thinking as rational computation. Poster at the 49th annual meeting of the Society for Philosophy and Psychology. Poster also presented at the 45th Annual Conference of the Cognitive Science Society.

Berke, M., & Jara-Ettinger, J. (2022). Integrating experience into Bayesian Theory of Mind. Poster presented at the 44th Annual Conference of the Cognitive Science Society.

Berke, M., Azerbayev, Z., Belledonne, M., Tavares, Z., & Jara-Ettinger, J. (2022). MetaCOG: Learning a metacognition for what objects are actually there. Beyond Bayes: Paths Towards Universal Reasoning Systems Workshop @ICML 2022.

Berke, M., Azerbayev, Z., Belledonne, M., Tavares, Z., & Jara-Ettinger, J. (2022). MetaCOG: Learning a metacognition for what objects are actually there. Poster at the Neurosymbolic Programming summer school at Caltech.

Berke, M., & Jara-Ettinger, J. (2021). Thinking about thinking through inverse reasoning. Poster at the 43rd Annual Conference of the Cognitive Science Society and the 47th Annual Meeting of the Society for Philosophy and Psychology.

Berke, M., Walter-Terrill, R., Jara-Ettinger, J., & Scholl, B. (2021). Flexible goals require that inflexible perceptual systems produce veridical representations: Implications for realism as revealed by evolutionary simulations. Talk at the 21st Annual Meeting of the Vision Science Society.

Berke, M., Belledonne, M., & Jara-Ettinger, J. (2020). Learning a metacognition for object perception. Poster at Shared Visual Representations in Human & Machine Intelligence (SVRHM) @NeurIPS 2020.

SELECTED INVITED TALKS

Saxelab, Massachusetts Institute of Technology	<i>Fall 2024</i>
Causality in Cognition Lab, Stanford University	<i>Fall 2024</i>
Computational Cognitive Science Group, Massachusetts Institute of Technology	<i>Spring 2023</i>
Human and Machine Cognition Lab, Max Planck Institute for Biological Cybernetics Tübingen, Germany.	<i>Spring 2022</i>

HONORS AND AWARDS

Graduate Student Assembly Conference Travel Fellowship For attending <i>International Conference on Machine Learning (ICML)</i> .	<i>Summer 2022</i>
Sterling Prize Awarded the prestigious Sterling Prize, totaling \$7000	<i>Fall 2019 - Spring 2021</i>
College Scholar Honors Thesis Awarded Summa Cum Laude	<i>Fall 2018 - Spring 2019</i>

Granted a \$5000 research stipend for Summer 2018

TEACHING

Assistant Director of Undergraduate Studies

Fall 2024 - Present

Assisted administering the cognitive science and psychology majors and advised students on individualized plans of study in cognitive science.

Algorithms of the Mind

Fall 2023

Delivered guest lecture “Social Cognition as Inverse Planning” on modeling Theory of Mind as Bayesian inferences over POMDPs.

Introduction to Statistics (2x)

Spring 2021 & 2022

Teaching Fellow (Yale University). Led discussion sections. Avg. student rating: 4.3/5

Multivariate Statistics (2x)

Fall 2020 & 2021

Teaching Fellow (Yale University). Delivered guest lectures on advanced computational methods. Avg. student rating: 4.75/5

Introduction to Statistics for Biology (4x)

Fall 2017 - Spring 2019

Teaching Assistant (Cornell University). Led discussion sections.

MENTORSHIP

Yale Psychology Sneak Peak Program Mentor

Fall 2020 - Present

The program pairs individuals from an underrepresented background with a current PhD student to help them apply to graduate school.

NextGen Psych Scholars Program Mentor

Summer 2023 - Present

This inter-university program pairs undergraduates and post-bacs from underrepresented backgrounds with a current PhD student to help them apply to graduate school.

Yale Psychology Diversity Committee Mentor

Fall 2020 - Fall 2024

The program pairs incoming PhD students with current PhD student mentors.

Undergraduates Research Assistants Mentored

Zhangir Azerbayev (December 2020 - May 2022; now PhD student in computer science at Princeton), Tanushree Burman (January 2021 - Fall 2021; now PhD student in computer science at Tufts), Bernardo Eilert Trevisan (January 2021 - Spring 2021), and Tan Zhi Yi (May 2022 - May 2024; Honors Thesis student based in the Yale-NUS Singapore campus), Abi Tenenbaum (June 2022 - Present), Ben Sterling (June 2022 - Present; Honors Thesis in Cognitive Science).

SERVICE

Reviews

Reviewed for *Psychological Review*, *Open Mind*, the 43rd, 44th, 45th, and 46th *Annual Conference of the Cognitive Science Society*, and Social Intelligence in Humans and Robots workshop @RSS (Robotics: Science and Systems) 2024. Served as program committee member for AI meets Moral Philosophy and Moral Psychology @NeurIPS 2023.

Yale Psychology Interview Weekend

Organized interview weekend for Yale Psychology’s cognitive area.

Medical Advocacy

Established the Connecticut Chapter of Tight Lipped, a medical advocacy organization by and for people with chronic pelvic, vulvar, and vaginal pain conditions. I collaborate with Yale and UConn’s OBGYN departments to improve education on these conditions and the healthcare available on campus.

Patient Representative at Vulvodynia Summit 2024

Presented on the key barriers to care for chronic vulvar and vaginal pain. This was an invite-only summit of international vulvar pain researchers held in Washington, DC.

Assessment of NIH Research on Women's Health

Testified in the Stakeholder Perspectives session of National Academies of Sciences, Engineering, and Medicine's Assessment of NIH Research on Women's Health in January 2024, urging that chronic pelvic and vulvovaginal pain be identified as a high priority area for research. My testimony was included in the NASEM's report.