MARLENE D. BERKE

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EDUCATION

Yale University   *2019 - Present*
PhD in Cognitive Psychology. Advisor: Prof. Julian Jara-Ettinger

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*). Thinking about thinking as rational computation.

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

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

REFEREED 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

SELECTED TALKS AND POSTERS

Berke, M. (presenter), 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. (presenter), 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. (presenter), 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. (presenter), (2023). Metacognition in minds and machines. Invited talk in Josh Tenenbaum's lab at Massachusetts Institute of Technology.

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

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

Berke, M. (presenter), (2022). Modeling metacognition. Invited talk in the Human and Machine Cognition Lab seminar at Max Planck Institute for Biological Cybernetics in Tübingen, Germany.

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

Berke, M. (presenter), 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 given at the 21st Annual Meeting of the Vision Science Society.

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

HONORS AND AWARDS

Graduate Student Assembly Conference Travel Fellowship *Summer 2022*
For attending *International Conference on Machine Learning* (ICML).

Sterling Prize *Fall 2019 - Spring 2021*
Awarded the prestigious Sterling Prize, totaling $7000

College Scholar Honors Thesis *Fall 2018 - Spring 2019*
Awarded Summa Cum Laude

Tanner Dean Scholar *2015 - 2019*
Granted a $5000 research stipend for Summer 2018

TEACHING

Assistant Director of Undergraduate Studies *Fall 2024*
Assisted in advising students and approving individualized courses of study for the cognitive science and psychology majors.

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. Avg. student rating: 4.75/5

Introduction to Statistics for Biology (4x)
Fall 2017 - Spring 2019

Teaching Assistant (Cornell University). Led discussion sections.

MENTORSHIP

Psychology Sneak Peak Program Mentor
Fall 2020 - Present

Yale University. The program pairs individuals from an underrepresented background with a current PhD student to help guide them through applying to graduate school.

Psychology Diversity Committee Mentor
Fall 2020 - Present

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

NextGen Psych Scholars Program Mentor
Summer 2023 - Present

Inter-university program pairing undergraduates and post-bacs from underrepresented backgrounds with a current PhD student to help them apply for graduate students.

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), Ben Sterling (June 2022 - Present), Abi Tenenbaum (June 2022 - Present), and Tan Zhi Yi (May 2022 - Present; Honors Thesis student based in the Yale-NUS Singapore campus).

SERVICE

Reviews

Reviewed for *Psychological Review*, for the 43rd, 44th, 45th, and 46th *Annual Conference of the Cognitive Science Society*, and for Social Intelligence in Humans and Robots workshop at *Robotics: Science and Systems* (RSS) 2024. I also served on the program committee for the AI meets Moral Philosophy and Moral Psychology workshop at NeurIPS 2023.

Yale Psychology Interview Weekend

Organized interview weekend for the cognitive area (January - February 2020).

Medical Advocacy

A founding member and organizer of the Connecticut chapter of Tight Lipped, a budding medical advocacy organization by and for people with chronic pelvic and vulvovaginal pain conditions. I have been collaborating with Yale and UConn's OBGYN residency programs to develop and implement a curriculum on these conditions and improve healthcare provided on campus.

Patient Representative at Vulvodynia Summit 2024

Together with the executive director of Tight Lipped, I presented in an hour-long session on the key barriers to care for chronic vulvovaginal pain. This was a small, invite-only conference of about twenty of the top international vulvodynia researchers which took place in Washington, DC.

Assessment of NIH Research on Women's Health

I 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 research on chronic pelvic and vulvovaginal pain condition be identified as a high priority.

Connecticut House Bill: An Act Promoting Equity In Coverage For Fertility Health Care
I testified in the testified in the hearing on Connecticut House Bill 6617, *An Act Promoting Equity In Coverage For Fertility Health Care* in February 2023, which would have required health insurance companies in Connecticut to cover fertility treatments. I urged that chronic vulvovaginal pain conditions be recognized as impacting fertility, so that insurance companies be required to cover treatment for chronic vulvovaginal pain conditions.