

Department of Psychology
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Education

Ph.D. in Experimental Psychology, University of South Carolina Concentration in Quantitative Psychology	2022
M.A. in Psychology, University of North Carolina Wilmington Certificate in Applied Statistics	2017
B.S. in Psychology, North Greenville University	2014

Professional Positions

Assistant Professor, Department of Psychology, Binghamton University	2023-present
Postdoctoral Fellow, Department of Psychological and Brain Sciences, Indiana University	2022-23

Peer-Reviewed Journal Articles

- Hayes, W. M., Yax, N., & Palminteri, S. (2025). Relative value encoding in large language models: A multi-task, multi-model investigation. *Open Mind*, 9, 709-725. https://doi.org/10.1162/opmi_a_00209
- Oh, S., Yang, X., Hayes, W. M., Anderson, A., Wedell, D. H., & Shinkareva, S. V. (2025). Physiological responses to aversive and non-aversive audiovisual, audio, and visual stimuli. *Biological Psychology*, 195, 108994. <https://doi.org/10.1016/j.biopsycho.2025.108994>
- Hayes, W. M., Holmes, W. R., & Trueblood, J. S. (2025). Attribute commensurability and context effects in preferential choice. *Psychonomic Bulletin & Review*, 32, 737-748. <https://doi.org/10.3758/s13423-024-02565-6>
- Banerjee, P., Hayes, W. M., Chatterjee, P., Masters, T., Mishra, S., & Wedell, D. H. (2024). Factors that promote the repulsion effect in preferential choice. *Judgment and Decision Making*, 19, e11. <https://doi.org/10.1017/jdm.2023.46>
- Hayes, W. M., & Wedell, D. H. (2023). Effects of blocked versus interleaved training on relative value learning. *Psychonomic Bulletin & Review*, 30, 1895-1907. <https://doi.org/10.3758/s13423-023-02290-6>
- Gao, C., Hayes, W. M., LaPierre, M., & Shinkareva, S. V. (2023). The effect of auditory valence on subsequent visual semantic processing. *Psychonomic Bulletin & Review*, 30, 1928-1938.

<https://doi.org/10.3758/s13423-023-02269-3>

Hayes, W. M., & Wedell, D. H. (2023). Testing models of context-dependent outcome encoding in reinforcement learning. *Cognition*, 230, 105280. <https://doi.org/10.1016/j.cognition.2022.105280>

Hayes, W. M., & Wedell, D. H. (2023). Reinforcement learning in and out of context: The effects of attentional focus. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 49, 1193-1217. <https://doi.org/10.1037/xlm0001145>

Wedell, D. H., Hayes, W. M., & Verma, M. (2022). Context effects on choice under cognitive load. *Psychonomic Bulletin & Review*, 29, 1986-1996. <https://doi.org/10.3758/s13423-022-02113-0>

Hayes, W. M., & Wedell, D. H. (2021). Regret in experience-based decisions: The effects of expected value differences and mixed gains and losses. *Decision*, 8, 277–294. <https://doi.org/10.1037/dec0000156>

Hayes, W. M., & Wedell, D. H. (2020). Autonomic responses to choice outcomes: Links to task performance and reinforcement-learning parameters. *Biological Psychology*, 156, 107968. <https://doi.org/10.1016/j.biopsycho.2020.107968>

Wedell, D. H., Hayes, W. M., & Kim, J. (2020). Context effects on reproduced magnitudes from short-term and long-term memory. *Attention, Perception, & Psychophysics*, 82, 1710-1726. <https://doi.org/10.3758/s13414-019-01932-z>

Hayes, W. M., Wedell, D. H., & Rashotte, M. A. (2020). Context effects in reproduction and perception of song tempo. *Journal of Experimental Psychology: Human Perception and Performance*, 46, 202-219. <http://dx.doi.org/10.1037/xhp0000710>

Hayes, W. M., & Wedell, D. H. (2020). Modeling the role of feelings in the Iowa Gambling Task. *Decision*, 7, 67-89. <http://dx.doi.org/10.1037/dec0000116>

Vanhille, S., Palmer, B., Hayes, W., & Overman, W. (2018). The effect of active participation on performance and understanding on the Iowa gambling task. *Journal of Behavioral Decision Making*, 31, 686-694. <https://doi.org/10.1002/bdm.2083>

Manuscripts Under Review or In Revision

Trueblood, J. S., Liu, Y., Murrow, M., Hayes, W. M., & Holmes, W. R. (revision submitted). Attentional dynamics explain the elusive nature of context effects. <https://psyarxiv.com/hj8dg>
[Roles: formal analysis, writing – original draft]

Refereed Conference Proceedings

*Hayes, W. M., Yax, N., & Palminteri, S. (2024). Relative Value Biases in Large Language Models. In L. K. Samuelson, S. L. Frank, M. Toneva, A. Mackey, & E. Hazeltine (Eds.), *Proceedings of the 46th Annual Conference of the Cognitive Science Society*. <https://escholarship.org/uc/item/1t3926gd>

Invited Talks

“Modeling Approaches for Understanding Context Effects in Judgment and Choice.” *Quantitative Psychology Group, Georgia Tech University* (2025, February)
[Virtual talk co-presented with Douglas Wedell]

“Using “Machine Psychology” to Study Decision-Making Biases in Large Language Models.” *Data Salon Series, Data Science Transdisciplinary Area of Excellence, Binghamton University* (2024, March)
[In person talk]

“Putting Reinforcement Learning Models into Context: Tests of Alternative Mechanisms.” *Paris School of Economics* (2022, June)
[Virtual talk]

Conference Oral Presentations

Hayes, W. M. “Skewed Reward Distributions Modulate the Relationship between Decision Difficulty and Response Time.” *66th Annual Meeting of the Psychonomic Society, Denver, CO* (2025, November)

Hayes, W. M., Yax, N., & Palminteri, S. “Relative Value Biases in Large Language Models.” *46th Annual Meeting of the Cognitive Science Society, Rotterdam, The Netherlands* (2024, July)

Hayes, W. M., Holmes, W. R., & Trueblood, J. S. “Attribute Comparability and Context Effects in Preferential Choice.” *64th Annual Meeting of the Psychonomic Society, San Francisco, CA* (2023, November)

Conference Poster Presentations

Hayes, W. M. “Context-Dependent Valuation in Reinforcement Learning.” *65th Annual Meeting of the Psychonomic Society, New York, NY* (2024, November)

Hayes, W. M., Trueblood, J. S., & Holmes, W. R. “Using Large-Scale, Randomized Experiments to Assess Contextual Sensitivity in Naturalistic Choice.” *Society for Judgment and Decision Making Annual Conference, San Francisco, CA* (2023, November)

Hayes, W. M., & Wedell, D. H. “Distinguishing Among Relative Valuation Models in Reinforcement Learning.” *63rd Annual Meeting of the Psychonomic Society, Virtual Conference* (2022, November)

Hayes, W. M., & Wedell, D. H. “Reinforcement Learning In and Out of Context: The Effects of Attentional Focus.” *62nd Annual Meeting of the Psychonomic Society, Virtual Conference* (2021, November)

Hayes, W. M., & Wedell, D. H. “Modeling Regret in Experience-Based Decisions: The Effects of Unequal Expected Values and Losses.” *61st Annual Meeting of the Psychonomic Society, Virtual Conference* (2020, November)

Hayes, W. M., & Wedell, D. H. "Relating Somatic Markers to Reinforcement Learning in the Iowa Gambling Task." *60th Annual Meeting of the Psychonomic Society, Montréal, Québec, Canada* (2019, November)

Hayes, W. M., & Wedell, D. H. "Modeling the Role of Affect in the Iowa Gambling Task." *59th Annual Meeting of the Psychonomic Society, New Orleans, LA* (2018, November)

Hayes, W. M., Rashotte, M. A., & Wedell, D. H. "Effects of Tempo Context on Reproducing Original Song Tempo." *North Carolina Cognition Conference, Chapel Hill, NC* (2018, February)

Student Oral Presentations

Touchard, M. J. "Can Visual Fixations Explain Context-Dependent Reinforcement Learning?" *Cognitive Confluence Symposium, Binghamton, NY* (2025, April)

Student Poster Presentations

Touchard, M. J., & **Hayes, W. M.** "Contextual Value Biases in Reinforcement Learning: What Can the Eyes Tell Us?" *66th Annual Meeting of the Psychonomic Society, Denver, CO* (2025, November)

Touchard, M. J., & **Hayes, W. M.** "Can Visual Fixations Explain Context-Dependent Reinforcement Learning?" *47th Annual Meeting of the Cognitive Science Society, San Francisco, CA* (2025, July)

Chen, J., Domingo, A., & **Hayes, W. M.** "Evaluating Risk Preferences in GPT Models." *Binghamton University Research Days* (2025, May)

Cohen, I., Malhotra, H., & **Hayes, W. M.** "Can LLMs Understand Multi-Armed Bandit Tasks?" *Binghamton University Research Days* (2025, May)

Heggawadi, R., Layne, N., Dolinsky, A., Touchard, M., & **Hayes, W. M.** "Can Visual Fixations Explain Context-Dependent Reinforcement Learning?" *SUNY Undergraduate Research Conference* (2025, April)

Sacks, J., Yu, E., Rosenthal, T., & **Hayes, W. M.** "College Students' Trust in Artificial Intelligence for Advice on Big Life Decisions." *64th Annual Meeting of the New England Psychological Association, Springfield, MA* (2024, October)

Sacks, J., Yu, E., Layne, N., Kim, M., Rosenthal, T., & **Hayes, W. M.** "ChatGPT or Reddit? Probing People's Trust in Advice for Important Life Decisions." *Binghamton University Research Days* (2024, April)

Rosenthal, T. C., Sacks, J., Duran, M., Kim, M., & **Hayes, W. M.** "Exploring Relative Value Bias: Learned Outcomes or Choice Repetition?" *Binghamton University Research Days* (2024, April)

Teaching

Binghamton University (courses taught as a faculty member)
Undergraduate Level

PSYC 473T: Judgement & Decision Making (Fall 2023, Fall 2024)

Graduate Level

PSYC 503: Statistics & Design I (Fall 2024)

PSYC 504: Statistics & Design II (Spring 2025)

PSYC 607A: Theories of Decision Making (Spring 2024)

University of South Carolina (courses taught as a PhD student)

Undergraduate Level

PSYC 400: Survey of Learning and Memory (instructor of record)

Research Supervision

Binghamton University

Graduate Students

1. Melanie Touchard (2024-present)

Dissertation Committees

1. Siyuan Yang (Biology, defense on July 17, 2024, outside examiner)
2. Mercury Mason (Psychology, proposal on March 7, 2025)

Preliminary Exam Committees

1. Joshua Glass (Psychology, proposal on May 22, 2025)

Undergraduate Students

1. Joelle Sacks (PSYC 397 Independent Study, 2024-2025)
2. Trevor Rosenthal (PSYC 397 Independent Study, Spring 2024)
3. Madeline Duran (PSYC 397 Independent Study, Spring 2024)
4. Michael Kim (PSYC 397 Independent Study, Spring 2024)
5. Elaine Yu (PSYC 397 Independent Study,)
6. Nadiah Layne (PSYC 397 Independent Study,
7. Andrew Dolinsky (PSYC 397 Independent Study,
8. Isaac Cohen (Computer Science, Projects for New Undergraduate Researchers, Summer 2024)
9. Hiten Malhotra (Computer Science, Projects for New Undergraduate Researchers, Summer 2024)
10. Allen Domingo (Computer Science, Projects for New Undergraduate Researchers, Summer 2024)
11. Joyce Chen (Psychology, Projects for New Undergraduate Researchers, Summer 2024)

Honors Thesis Committees

1. Shanti Astra (Psychology, defense on April 25, 2024)

Service

Binghamton University: Department and University Service

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| 1. Co-chair, Computational Cognition and Mental Health search committee | 2024-2025 |
| - Job search sponsored by the SUNY Empire Innovation Program | |
| 2. Resource committee member, Psychology Department | 2024-2025 |
| 3. Colloquium committee member, Psychology Department | 2023-2025 |
| 4. Award committee member, Psychology Department | 2023-2024 |

Professional Service: Editorial and Reviewing Roles

1. Ad hoc reviewer, National Science Foundation
2. Ad hoc reviewer, Society for Judgment and Decision Making Conference

3. Ad hoc reviewer: Behavior Research Methods; Brain and Behavior; Cognition; Cognitive Psychology; Communications Psychology; Decision; Journal of Behavioral Decision Making; Journal of Mathematical Psychology; PLOS Computational Biology; Psychological Review; Psychonomic Bulletin & Review; Scientific Reports; Quarterly Journal of Experimental Psychology

Outreach

1. Faculty mentor, Binghamton University BFirst Network 2023-present
 - The BFirst Network seeks to connect first-generation college students with first-generation faculty, staff, alumni, and graduate student mentors to foster an inclusive and supportive campus community.

Media

1. The Daily Mail, “Psychology expert issues stark warning over why you make riskier decisions in the summer time” by Syeda Saad (April 2025) [Link](#)
2. BingUNews, “From AI to artistry, Binghamton University sees a summer surge in research” by Ethan Knox (July 2024) [Link](#)

Professional Affiliations

Cognitive Science Society
Society for Judgment and Decision Making
Psychonomic Society