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John P. McCoy

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Employment

2018 - present Assistant Professor of Marketing, Wharton School of the University of Pennsylvania

Education

2008 - 2018 Ph.D, Department of Brain and Cognitive Sciences
Massachusetts Institute of Technology, Cambridge, MA
Advisors: Drazen Prelec and Joshua Tenenbaum

2007 - 2013 Ph.D, Mathematics ("Paired-Domination in Graphs")
University of Johannesburg, South Africa
Advisor: Michael Henning

2006 - 2007 Master of Arts in Cognitive Science, *cum laude*
University of KwaZulu-Natal, South Africa

2004 - 2005 Bachelor of Arts (Honours) in Cognitive Science, *cum laude*
Bachelor of Science (Honours) in Mathematics, *cum laude*
University of KwaZulu-Natal, South Africa

2001 - 2003 Bachelor of Science, majors in Computer Science and Mathematics, *summa cum laude*
University of Natal, South Africa

Publications

(* indicates equal Authorship)

1. Mellers, B., McCoy, J., Lu, Louise, and Tetlock, P. (2023). Humans, Algorithms and Geopolitical Forecasting Tournaments: Quantifying Uncertainty in Hard-to-Quantify Domains. *Perspectives in Psychological Science*.

2. Aka, A., Bhatia, S., and McCoy, J. (2023). Semantic determinants of memorability. *Cognition*, 239: 105497.

3. Bigelow, E., McCoy, J.*, and Ullman, T.*. (2023). Non-Commitment in Mental Imagery. *Cognition*, 238: 105498.

4. McCoy, J. and Prelec. D. (2023). A Bayesian hierarchical model of crowd wisdom based on predicting opinions of others, accepted at *Management Science*.

5. Mellers, B., Lu, Louise, and McCoy, J. (2023). Predicting the future with humans and AI. *Consumer Psychology Review*, 6(1): 109-120.

6. Yin, S., Arkes, H.R., McCoy, J., Cohen, M.E., and Mellers, B.A. (2021) Conflicting Goals Influence Physicians' Expressed Beliefs to Patients and Colleagues. *Medical Decision Making*, 41(5), 505-514.

7. McCoy, J. and Ullman, T. (2019). Judgments of effort for magical violations of intuitive physics, PLOS One, 14(5).

8. McCoy, J. and Ullman, T. (2019) Transformative Decisions and Their Discontents. Part of a symposium on L.A. Paul's "Transformative Experience". *Rivista Internazionale di Filosofia e Psicologia*, 10(3), 339 - 345. (Not peer reviewed.)

9. McCoy, J*, Paul, L.A.*, and Ullman, T.* (2019). Modal Prospection. In *Metaphysics and Cognitive Science*, Goldman, A. & McLaughlin, B. (eds.), Oxford University Press.

10. Liu, S., McCoy, J. P., & Ullman, T. D. (2019). People's perception of others' risk preferences. Proceedings of the 41st Annual Meeting of the Cognitive Science Society, 678 - 685.

11. McCoy, J.* and Ullman, T.* (2018). A Minimal Turing Test. *Journal of Experimental Social Psychology*, 79, 1-8.

12. Prelec, D., Seung, H. S., & McCoy, J. (2017). A solution to the single-question crowd wisdom problem. *Nature*, 541(7638), 532-535. [Cover article].

13. Henning, M.A., McCoy, J. & Southey, J. (2014). Graphs with maximum size and given paired-domination number. *Discrete Applied Mathematics*, 170, 72–82.

14. Ullman, T.*, McCoy, J.*, Stuhlmuller, A., Gersternberg, T. and Tenenbaum, J.B. (2012). Why blame Bob? Probabilistic generative models and blame attribution. *Proceedings of the Thirty-fourth Annual Conference of the Cognitive Science Society*, 1996-2001.

15. Henning, M.A. & McCoy, J. (2011). Which trees have a differentiating-paired dominating set? *Journal of Combinatorial Optimization*

16. Henning, M.A. & McCoy, J. (2009). Total domination in planar graphs of diameter 2. *Discrete Mathematics*, 309, 6181–6189.

17. McCoy, J. & Henning, M.A. (2009). Locating and paired-dominating sets in graphs. *Discrete Applied Mathematics*, 157, 3268–3280.

18. Dorbek, P., Henning, M.A., & McCoy, J. (2007). Upper total domination versus upper paired-domination. *Quaestiones Mathematicae*, 30(1), 1–12.

Working Papers

19. Prelec, D., and McCoy, J. (2022). General identifiability of possible world models for crowd wisdom, Working paper, preprint posted at https://psyarxiv.com/gaep3.

20. McCoy, J., Ciulli, R., and Bradlow, E. (2022). Two-For-One Conjoint: Bayesian Cross-Category Learning for Shared-Attribute Categories. Reject and resubmit at *Marketing Science*.

Selected work in progress

McCoy, J. Not by Choices Alone: Evaluating Strength of Preference Judgments.

Aka, A. and McCoy, J. Slogan memorability at scale.

Aka, A., Bradlow, E., and McCoy, J. Cognitive maps of grocery store products.

Talks

Conferences/workshops

"Not by Choices Alone: Evaluating Strength of Preference Judgments", Subjective probability, Utility, and Decision Making, Vienna, 2023.

"Not by Choices Alone: Evaluating Strength of Preference Judgments" (poster), Society for Consumer Psychology, San Juan, 2023.

"Not by Choices Alone: Evaluating Strength of Preference Judgments", Society for Judgment and Decision Making, San Diego, 2022.

"Overcoming crowd wisdom challenges with a Bayesian model of social beliefs", INFORMS Annual Meeting, Indianapolis, 2022.

"Two-for-one Conjoint Bayesian Cross-category Learning for Shared Attribute Categories", Marketing Science conference, virtual, 2022.

African Marketing Confederation, Relaunch event, 2021

"'Zebra' is probably more memorable than 'Tick': Towards predicting the memorability of textual marketing communications", Four School Conference (Wharton, Yale, Columbia, NYU), 2021

"Predicting memorability with distributed semantic representations" (poster, Psychonomic Society 2020); "Modeling memorability with semantic representations", (talk, Society for Mathematical Psychology 2021), "Zebra" is probably more memorable than "Tick," how accurate are people when making memorability predictions? (poster, Society for Consumer Psychology 2021; poster, Society for Judgment and Decision Making 2021). All presented by graduate student co-author, A. Aka.

"Aggregating beliefs using a model of people's predictions of other's beliefs" Society for Consumer Psychology, 2020

"Extracting Wisdom from the Crowd Using Behavioral Insights and Machine Learning", Johns Hopkins Behavioral Science Forum on Artificial Intelligence, Baltimore, 2019

"A Possible Worlds Model: Some Theoretical Connections", Bayesian Crowd Conference, Rotterdam, 2019

"A probabilistic generative model for aggregating judgments by incorporating peer predictions", Bayesian Crowd Conference 2017, 07/04/2017

"Crowd wisdom and the surprisingly popular answer", Economics and Computation 2017 Workshop on Forecasting", 06/27/17

"Modal imagination" (with T. Ullman and L.A. Paul), 2017 Ranch Metaphysics Workshop, 01/26/2017

"Modeling the self in self-transformation" (with T. Ullman), Society for Philosophy & Psychology Preconference workshop 2016

Talks at institutions

Cornell, 05/14/2023

University of Delaware, marketing camp, 05/29/2022

University of Pennsylvania, mindCORE seminar series, 2019

University of Pennsylvania, Wharton Decision Processes Colloquia, 2018

Massachusetts Institute of Technology 09/07/2017

University of Illinois, Chicago, 09/15/2017

University of California, Los Angeles, 09/25/2017

University of Texas, Austin, 09/22/2017

University of Chicago, 09/29/2017

Northwestern University, 10/05/2017

University of California, San Diego, 10/11/2017

University of California, Berkeley, 10/16/2017

Columbia University, 10/24/2017

University of Pennsylvania, 11/02/2017

University of Colorado, Boulder, 11/08/2017

Erasmus University Rotterdam, 11/16/2017

Academic Service

Program committee (meta-reviewer), Cognitive Science Society Conference 2021, 2022, 2023

Tutorials & Workshops Committee, Cognitive Science Society Conference, 2020, 2021, 2022, 2023

Program committee, Workshop on Behavioral Economics and Computation, ACM Economics and Computation 2019

Journal, conference, prize, and grant proposal reviewing: Society for Consumer Psychology conference; Subjective Probability, Utility, and Decision Making conference; Perspectives on Psychological Science; MSI Dissertation Award; Philosophical Psychology; Journal of Economic Behavior and Organization; Decision; Journal of Expertise; National Science Foundation (Decision, Risk, & Management Sciences); Preselection committee for Franklin Institute's Bower Award; Nature Human Behavior; Management Science; Judgment & Decision Making; Journal of Marketing Research Cognitive Research; Cognitive Science Society Conference; Neural Information Processing Systems

Panels: Wharton Marketing Conference 2020 ("Marketing in a global pandemic", moderator), Data Colada Seminar series (07/17/2020, panelist)

Experiment Review Board, Ought (Ought is a non-profit research lab that develops mechanisms for delegating open-ended thinking to advanced machine learning systems.)

Seminar organization: Wharton Decision Processes colloquium (Fall 2022); Wharton marketing colloquium, Spring 2020; University of Pennsylvania mindCORE seminar committee (2019, chair 2020, 2021)

Marketing department: curriculum committee, Spring seminar organizer

Representative Press

My research has been covered in a range of outlets including The Wall Street Journal, The New Yorker, Bloomberg, Scientific American, NPR, BBC Future, Quartz, The Verge, Psychology Today, Cnet, Aeon, Pacific Standard Magazine, New Statesman and Ars Technica.

Awards and Prizes

International Fulbright Science and Technology Award for Outstanding Foreign Students, 2008 - 2010

Research scholarship from the South African Responsible Gambling Foundation, 2006

University of KwaZulu-Natal Postgraduate Merit Scholarship (awarded twice), 2004 - 2005

Samuel Edelstein Scholarship (Two awarded annually to entering postgraduate students at University of KwaZulu-Natal, Pietermaritzburg), 2004

G.I Bateman Memorial Prize for Mathematics - 2004

University of Natal Undergraduate Prestige Scholarship (Ranked in top three undergraduates across the university), 2003

University of Natal Merit Award (renewed) - 2001 - 2002

Teaching Experience

Wharton

Instructor for MKTG 611 - Marketing Management (2018, 2019, 2020, 2021, 2022) (4 sections)

MIT - Teaching assistant

MBA: Listening to the Customer (3 sections)

MBA: Strategic Market Measurement

MBA: Applied Behavioral Economics

Computational Cognitive Science: Probabilistic Programming

Cognitive Processes

Doctoral student mentoring

Ada Aka, joint marketing/psychology program (thesis committee, co-marketing advisor with E. Bradlow, primary advisor: S. Bhatia; first placement: Stanford)

Ekaterina Goncharova, joint marketing/psychology program (thesis committee)