

Daniel Bennett

Curriculum Vitae

School of Psychological Sciences, Monash University, Australia

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Research interests

In my research, I use the methods of computational cognitive science to understand the complex interactions between affect/emotion and cognition. I am also interested in applications of these questions to: (i) interactions between emotion, learning, and decision making in mood disorders like major depression and bipolar disorder, and (ii) the cognitive and affective processes that underlie gambling-related harm in interactive betting.

Employment

<i>Lecturer</i>	2022-present
School of Psychological Sciences, Monash University	
<i>Research Fellow</i>	2021-2022
Department of Psychiatry, Monash University	
<i>Postdoctoral Research Fellow</i>	2017-2020
Princeton Neuroscience Institute, Princeton University	
Advisor: Yael Niv	

Education

<i>Doctor of Philosophy (PhD) in Psychology</i>	2013-2017
The University of Melbourne	
Thesis: Belief updating and information seeking in decision making under uncertainty	
Supervisors: Stefan Bode, Carsten Murawski, Rob Hester	
<i>Bachelor of Science (Honours) in Psychology</i>	2011
The University of Melbourne	
<i>Bachelor of Science and Bachelor of Arts</i>	2007-2010
The University of Western Australia	

Publications

Preprints and under review

- Forbes, L. & **Bennett, D.** (under review). The effect of reward prediction errors on subjective affect depends on outcome valence and decision context. Preprint hosted at *PsyArXiv*: <https://psyarxiv.com/v86bx>
- Bennett, D.***, Radulescu, A.*, Zorowitz, S., Falso, V., & Niv, Y. (under review). Affect-congruent attention drives changes in reward expectations. Preprint hosted at *PsyArXiv*: <https://psyarxiv.com/vu2cw>
- Lim, J. Y. L., Boardman, J. M., Anderson, C., Dickinson, D. L., **Bennett, D.**, & Drummond, S. P. A. (under review). Sleep restriction impairs the ability to

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integrate multiple information sources in probabilistic decision-making. Manuscript under review.

Peer-reviewed journal articles and book chapters

4. Zorowitz, S., Niv, Y., Solis, J., & **Bennett, D.** (in press). Inattentive responding can induce spurious associations between task behavior and symptom measures. Manuscript accepted for publication in *Nature Human Behaviour*.
5. **Bennett, D.**, Nakamura, J., Vinnakota, C., Sokolenko, E., Nithianantharajah, J., van den Buuse, M., Jones, N. C., Sundram, S., & Hill, R. (in press). Mouse behaviour on the trial-unique non-matching-to-location (TUNL) touchscreen task reflects a mixture of distinct working memory codes and response biases. Manuscript accepted for publication in the *Journal of Neuroscience*.
6. Myles, D., **Bennett, D.**, Carter, A., Yücel, M., Albertella, L., de Lacy-Vawdon, C., & Livingstone, C. (in press). ‘Losses disguised as wins’ in electronic gambling machines contribute to win overestimation in a large online sample. Manuscript accepted for publication in *Addictive Behaviors Reports*.
7. Weber, I., Zorowitz, S., Niv, Y., & **Bennett, D.** (2022). The effects of induced positive and negative affect on Pavlovian-instrumental interactions. *Cognition and Emotion*, 36(7), 1343-1360.
8. **Bennett, D.**, Davidson, G., & Niv, Y. (2022). A model of mood as integrated advantage. *Psychological Review*, 129(3), 513-541.
9. **Bennett, D.**, Niv, Y., & Langdon, A. J. (2021). Value-free reinforcement learning: Policy optimization as a minimal model of operant behavior. *Current Opinion in Behavioral Sciences*, 41, 113-121.
10. Smillie, L. D., **Bennett, D.**, Tan, N. P., Sutcliffe, K., Fayn, K., Bode, S., & Wacker, J. (2021). Does openness/intellect predict sensitivity to the reward value of information? *Cognitive, Affective, and Behavioral Neuroscience*, 21(5), 993-1009.
11. Zorowitz, S., **Bennett, D.**, Choe, G. & Niv, Y. (2021). A recurring reproduction error in the administration of the Generalized Anxiety Disorder Scale. *The Lancet Psychiatry*, 8(3), 180-181.
12. **Bennett, D.**, Sutcliffe, K., Tan, N. P., Smillie, L. D., & Bode, S. (2021). Anxious and obsessive-compulsive traits are independently associated with valuation of non-instrumental information. *Journal of Experimental Psychology: General*, 150(4), 739-755.
13. Goh, A. X.-A., **Bennett, D.**, Bode, S., & Chong, T. T.-J. (2021). Neuro-computational mechanisms underlying the subjective value of information. *Communications Biology*, 4(1), 1-14.
14. **Bennett, D.**, & Niv, Y. (2020). Opening Burton’s clock: Psychiatric insights from computational cognitive models. Chapter in *The Cognitive Neurosciences*, 6th edition (M. Gazzaniga, ed.).
15. **Bennett, D.**, Silverstein, S., & Niv, Y. (2019). The two cultures of computational psychiatry. *JAMA Psychiatry*, 76(6), 563-564.
16. **Bennett, D.***, Sasmita, K.*, Maloney, R. T., Murawski, C., & Bode, S. (2019). Monetary feedback modulates performance and electrophysiological indices of belief updating in reward learning. *Psychophysiology*, 56(10), e13431.

17. Bode, S., Feuerriegel, D., **Bennett, D.**, & Alday, P. M. (2019). The Decision Decoding ToolBOX (DDTBOX): A multivariate pattern analysis toolbox for event-related potentials. *Neuroinformatics*, 17(1), 27-42.
18. Sewell, D., Warren, H. A., Rosenblatt, D., **Bennett, D.**, Lyons, M., & Bode, S. (2018). Feedback discounting in probabilistic categorization: converging evidence from EEG and cognitive modelling. *Computational Brain and Behavior*, 1(2), 165-183.
19. Bode, S., **Bennett, D.**, Sewell, D. K., Paton, B., Egan, G. F., Smith, P. L., & Murawski, C. (2018). Dissociating neural variability related to stimulus quality and response times in perceptual decision-making. *Neuropsychologia*, 111, 190-200.
20. Brydevall, M.*, **Bennett, D.***, Murawski, C., & Bode, S. (2018). The neural encoding of information prediction errors during non-instrumental information seeking. *Scientific Reports*, 8, 6134.
21. **Bennett, D.**, Yücel, M., & Murawski, C. (2018). Errors of statistical inference in the Information Sampling Task. *Biological Psychiatry*, 83(12), e61-e62.
22. **Bennett, D.**, Oldham, S., Dawson, A., Parkes, L., Murawski, C., & Yücel, M. (2017). Systematic overestimation of reflection impulsivity in the Information Sampling Task. *Biological Psychiatry*, 82(4), e29-e30.
23. Carter, O., **Bennett, D.**, Nash, T., Arnold, S., Brown, L., Cai, R.Y., Allan, Z., Dłuzniak, A., McAnally, K., Burr, D., & Sundram, S. (2017). Sensory integration deficits support a dimensional view of psychosis and are not limited to schizophrenia. *Translational Psychiatry*, 7, e1118.
24. **Bennett, D.**, Bode, S., Brydevall, M., Warren, H., & Murawski, C. (2016). Intrinsic valuation of information in decision making under uncertainty. *PLoS Computational Biology*, 12(7), e1005020.
25. **Bennett, D.**, Dłuzniak, A., Cropper, S., Partos, T., Sundram, S., & Carter, O. (2016). Selective impairment of global motion integration, but not global form integration, in schizophrenia and bipolar affective disorder. *Schizophrenia Research: Cognition*, 3, 11-14.
26. **Bennett, D.** (2015). The neural mechanisms of Bayesian belief updating. *The Journal of Neuroscience*, 35(50), 16300-16302.
27. **Bennett, D.**, Murawski, C., & Bode, S. (2015). Single-trial event-related potential correlates of belief updating. *eNeuro*, 2(5), 1-14.
28. Bode, S., **Bennett, D.**, Stahl, J., & Murawski, C. (2014). Distributed patterns of event-related potentials predict subsequent ratings of abstract stimulus attributes. *PLoS One*, 9(10), e109070.

Extended abstracts in peer-reviewed conference proceedings

29. **Bennett, D.** (2022). No evidence for short-timescale temporal declines in expectations within a controlled cognitive task. *Proceedings of the 44th Annual Meeting of the Cognitive Science Society*.
30. **Bennett, D.**, Davidson, G., & Niv, Y. (2019). Momentum and mood in policy-gradient reinforcement learning. *The 4th Multidisciplinary Conference on Reinforcement Learning and Decision Making*.

31. **Bennett, D.**, Feuerriegel, D., Alday, P. M., & Bode, S. (2017). The Decision Decoding ToolBOX (DDTBOX): A multivariate pattern analysis toolbox for event-related potentials. *Conference on Cognitive Computational Neuroscience 2017*.

* Denotes equal contribution

Grants and funding

<i>Activation Fund</i> (AUD \$20,000 + GBP £10,000)	2022
Monash-Warwick Alliance	
Role: Chief investigator	
Project title: Building an online data-collection platform for in-play sports betting	
<i>Turner Institute Strategic Project Grants Scheme</i> (AUD \$20,000)	2022
The Turner Institute for Brain and Mental Health, Monash University	
Role: Chief investigator	
Project title: Using computational cognitive science to tackle cash-out gambling	
<i>Sir Keith Murdoch Graduate Fellowship</i> (USD \$40,000)	2019
American-Australian Association	
<i>CJ Martin Early Career Fellowship</i> (AUD \$417,192)	2019-2022
National Health and Medical Research Council	
Role: Chief investigator	
Project title: Towards a neurocomputational model of mood instability in psychiatric illness.	

Awards

<i>Best ECR Presentation</i>	2020
Australasian Society for Bipolar Disorder and Depression - ECR Webinar Series	
<i>Travel Fellowship Award</i> (USD \$2,000)	2020
Society of Biological Psychiatry	
<i>Career Development Award</i> (AUD \$1,500)	2016
School of Psychological Sciences, The University of Melbourne	
<i>Postgraduate student presentation award</i>	2015
School of Psychological Sciences, The University of Melbourne	
<i>Melbourne Abroad Travelling Scholarship</i> (AUD \$1,500)	2014
The University of Melbourne	
<i>Australian Postgraduate Award</i> (AUD \$92,008)	2013-2016
Postgraduate research scholarship, Australian Federal Department of Education	
<i>Dwight Prize for Honours in Psychology</i>	2011
For coursework in Psychology at The University of Melbourne	
<i>Dean's Honours List in Science</i>	2011
For coursework in the Bachelor of Science at The University of Melbourne	

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Convocation, The UWA Graduates Association Prize **2008**
Award for undergraduate coursework

Commonwealth Accommodation Scholarship **2007-2010**
Undergraduate scholarship, Australian Federal Department of Education

Teaching

NB: Where available, student evaluations reflect the most recent year

Monash University **2022-present**

- *2022-present*: Lecturer and Chief Examiner, PSY3051 (Perception and Cognitive Psychology). Third-year undergraduate unit, ~400 students, delivered ~10 2-hour lectures.
Student evaluation: 90/100 ('Very High', highest possible satisfaction band)
- *2022-present*: Lecturer and Chief Examiner, PSY3032 (Psychological Disorders). Third-year under-graduate unit, ~400 students, delivered 12 1-hour lectures
Student evaluation: 90/100 ('Very High', highest possible satisfaction band)
- *2022-present*: Lecturer, PSY1011 (Psychology 1A). First-year undergraduate unit, ~1200 students, delivered 4 1-hour lectures on learning and memory.
Student evaluation: 91/100 ('Very High', highest possible satisfaction band).
- *2022*: Lecturer, PSY1022 (Psychology 1B). First-year undergraduate unit, ~1200 students, delivered 4 1hr lectures on sensation and perception.
Student evaluation: 90/100 ('Very High', highest possible satisfaction band).

Princeton University **2018**

- *Fall 2018*: Postdoctoral Tutorial Leader, Junior Neuroscience Tutorial. Responsibilities: design, deliver, and assess a 6-week intensive undergraduate neuroscience tutorial series.

University of Melbourne **2011-2016**

- *2016*: Lecturer, PSYC40004 (Current Topics in Cognitive Neuroscience). Honours-level unit, ~ 80 students, deliver 1 2-hr lecture on decision making.
- *2015*: Tutor, PSYC30018 (Neuroscience and the Mind). Third-year undergraduate unit, tutorial delivery and marking for two classes.
- *2011-2012*: Non-residential tutor in Psychology. Responsibilities: design and deliver first-year psychology coursework tutorials at residential colleges (Janet Clarke Hall, Newman College, St. Mary's College, University College).

Supervision

PhD

- 2023-present: PhD co-supervisor for Jocelyn Halim (Monash University)
- 2023-present: PhD co-supervisor for Chanel Agosto (Monash University)
- 2022-present: PhD co-supervisor for Chuyin Zhang (Monash University)

- 2022-present: PhD co-supervisor for Jeryl Lim (Monash University)
- 2017-2020: PhD co-supervisor for Ariel Goh (Monash University)

Honours

- 2023: Antonia Cholewick, Ong George Ngieng, Brody Quinn, and Hirushi Weerakoon
- 2022: Cassandra Dods, Robert Shirley, and Jianming Zhu
- 2021: Laura Forbes and Ashleigh Fulton
- 2014-2017: Assistant supervision for 6 Honours students at The University of Melbourne (primary supervision by Olivia Carter or Stefan Bode)

Undergraduates and interns

- 2022: Samuel Arsovski, Antonia Cholewick, and Chantel Wormington
- 2019-2020: Senior thesis co-supervisor for Claire Lee (Princeton University)
- 2019-2020: Junior project co-supervisor for Isla Weber (Princeton University)

Professional service

Reviewing (journal articles)

- Behavioural Processes; Biological Psychiatry; Cerebral Cortex; Cognition & Emotion; Cognitive, Affective, and Behavioral Neuroscience; Cognitive Psychology; Computational Brain & Behavior; Computational Psychiatry; Current Opinion in Behavioral Sciences; Decision; eLife; Frontiers in Human Neuroscience; Journal of Affective Disorders; Journal of Behavioral Decision Making; Journal of Cognitive Neuroscience; Journal of Experimental Psychology: General; Journal of Individual Differences; Journal of Neuroscience; NeuroImage; Nature Human Behaviour; PLOS Computational Biology; PLOS One; Psychiatry & Clinical Neurosciences; Psychonomic Bulletin & Review; Psychological Medicine; Psychological Review; Psychophysiology; Schizophrenia Research; Translational Psychiatry.

Reviewing (funding)

- American-Australian Association (USA to Australia program and Australia to USA program)
- German Research Foundation (Deutsche Forschungsgemeinschaft)
- Swiss National Science Foundation (Sinergia scheme and Projects scheme)

External examining

- 2022: External PhD examiner for Henrik Siljebråt, Goldsmiths' College
- 2021: External PhD examiner for Tim Loossens, KU Leuven

Other service

- 2022-present: Head of *Cognition and Emotion Laboratory* at Monash University.
- 2022-present: Sole administrator of the Melbourne Cognitive Science List (jobs and events mailing list distributed to ~350 people).
- 2018-2019: Member of seminar series organising committee, Princeton Neuroscience Institute.
- 2016: Graduate student representative for external relations committee, Melbourne School of Psychological Sciences

- 2016: Workshop co-organiser, “Multivariate Analysis of Event-Related Potentials”, University of South Australia, Adelaide