

# Daniel Bennett

## Curriculum Vitae

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<b>Research interests</b>	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.	
<b>Employment</b>	<i>Lecturer</i>	<b>2022-present</b>
	School of Psychological Sciences, Monash University	
	<i>Research Fellow</i>	<b>2021-2022</b>
<b>Education</b>	Department of Psychiatry, Monash University	
	<i>Postdoctoral Research Fellow</i>	<b>2017-2020</b>
	Princeton Neuroscience Institute, Princeton University Advisor: Yael Niv	
<b>Publications</b>	<i>Doctor of Philosophy (PhD) in Psychology</i>	<b>2013-2017</b>
	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>	<b>2011</b>
<b>Publications</b>	The University of Melbourne	
	<i>Bachelor of Science and Bachelor of Arts</i>	<b>2007-2010</b>
	The University of Western Australia	
<b>Publications</b>	<i>Peer-reviewed journal articles and book chapters</i>	
	1. Weber, I., Zorowitz, S., Niv, Y., & <b>Bennett, D.</b> (2022). The effects of induced positive and negative affect on Pavlovian-instrumental interactions. In press at <i>Cognition and Emotion</i> .	
	2. <b>Bennett, D.</b> , Davidson, G., & Niv, Y. (2022). A model of mood as integrated advantage. <i>Psychological Review</i> , 129(3), 513-541.	
<b>Publications</b>	3. <b>Bennett, D.</b> , Niv, Y., & Langdon, A. J. (2021). Value-free reinforcement learning: Policy optimization as a minimal model of operant behavior. <i>Current Opinion in Behavioral Sciences</i> , 41, 113-121.	

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4. 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.
5. 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.
6. **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.
7. Goh, A. X.-A., **Bennett, D.**, Bode, S., & Chong, T. T.-J. (2021). Neurocomputational mechanisms underlying the subjective value of information. *Communications Biology*, *4*(1), 1-14.
8. **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.).
9. **Bennett, D.**, Silverstein, S., & Niv, Y. (2019). The two cultures of computational psychiatry. *JAMA Psychiatry*, *76*(6), 563-564.
10. **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.
11. 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.
12. 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.
13. 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.
14. 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.
15. **Bennett, D.**, Yücel, M., & Murawski, C. (2018). Errors of statistical inference in the Information Sampling Task. *Biological Psychiatry*, *83*(12), e61-e62.
16. **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.
17. 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.

18. **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.
19. **Bennett, D.**, Dluzniak, 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.
20. **Bennett, D.** (2015). The neural mechanisms of Bayesian belief updating. *The Journal of Neuroscience*, 35(50), 16300-16302.
21. **Bennett, D.**, Murawski, C., & Bode, S. (2015). Single-trial event-related potential correlates of belief updating. *eNeuro*, 2(5), 1-14.
22. 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*

23. **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*.
24. **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*.
25. **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*.

*Preprints and under review*

26. **Bennett, D.**, Nakamura, J., Vinnakota, C., Sokolenko, E., Nithianantharajah, J., van den Buuse, M., Jones, N. C., Sundram, S., & Hill, R. (under review). Mouse behaviour on the trial-unique non-matching-to-location (TUNL) touchscreen task reflects a mixture of distinct working memory codes and response biases. Preprint hosted at *bioRxiv*.
27. **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>
28. Zorowitz, S., Niv, Y., & **Bennett, D.** (under review). Inattentive responding can induce spurious associations between task behavior and symptom measures. Preprint hosted at *PsyArXiv*: <https://psyarxiv.com/rynhk/>

\* Denotes equal contribution

**Grants  
and funding**

*Activation Fund* (AUD \$20,000 + GBP £10,000) **2022**  
 Monash-Warwick Alliance  
 Role: Chief investigator Project title: Building an online data-collection platform for

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in-play sports betting

*Turner Institute Strategic Project Grants Scheme* (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

*Sir Keith Murdoch Graduate Fellowship* (USD \$40,000) **2019**  
American-Australian Association

*CJ Martin Early Career Fellowship* (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

*Best ECR Presentation* **2020**  
Australasian Society for Bipolar Disorder and Depression - ECR Webinar Series

*Travel Fellowship Award* (USD \$2,000) **2020**  
Society of Biological Psychiatry

*Career Development Award* (AUD \$1,500) **2016**  
School of Psychological Sciences, The University of Melbourne

*Postgraduate student presentation award* **2015**  
School of Psychological Sciences, The University of Melbourne

*Melbourne Abroad Travelling Scholarship* (AUD \$1,500) **2014**  
The University of Melbourne

*Australian Postgraduate Award* (AUD \$92,008) **2013-2016**  
Postgraduate research scholarship, Australian Federal Department of Education

*Dwight Prize for Honours in Psychology* **2011**  
For coursework in Psychology at The University of Melbourne

*Dean's Honours List in Science* **2011**  
For coursework in the Bachelor of Science at The University of Melbourne

*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

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Psychology). Third-year undergraduate unit, ~300 students, delivered ~22 1-hr lectures onwards.

**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-hr 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-hr 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*

- 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*

- 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)

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## 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