



Neil Robert Bramley

Curriculum Vitae

Academic experience

- 2019–present **Lecturer in Cognitive Psychology (Assistant Professor equiv.)**, *Department of Psychology, School of Philosophy, Psychology and Language Sciences, University of Edinburgh, Scotland.*
- 2017–2018 **Moore-Sloan Postdoctoral Associate**, *Psychology Department & Center for Data Science, New York University, New York, NY, USA.*
- 2015 **Visiting Researcher**, *CoCoSci Lab, Department of Psychology, University of California, Berkeley, USA.*
- 2011–2012 **Research Assistant**, *Biological and Experimental Psychology, Queen Mary, University of London, England.*

Education

- 2013–2017 **PhD, Experimental Psychology**, *UCL, London.*
Title: Constructing the world: Active causal learning in cognition
Supervisors: Prof David Lagnado & Prof Peter Dayan
Winner 2017 BPS Award for Outstanding Doctoral Research
- 2012–2013 **MRes, Computer Science**, *UCL, London.*
- 2010–2011 **MSc, Cognitive & Decision Sciences**, *UCL, London.*
- 2005–2009 **MA (Hons), Philosophy**, *University of Glasgow, Glasgow.*

Publications

Peer reviewed articles

- Coenen, A., A. Ruggeri, N. R. **Bramley**, and T. M. Gureckis (2019). Testing one or multiple: How Beliefs about sparsity affect causal experimentation. *Journal of Experimental Psychology: Learning, Memory & Cognition.*
- Li, S., Y. Sun, S. Liu, T. Wang, T. M. Gureckis, and N. R. **Bramley** (2019). Active physical inference via reinforcement learning. In: *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*. Ed. by A. Goel, C. Seifert, and C. Freksa.
- Li, Z., N. R. **Bramley**, and T. M. Gureckis (2019). The fateful moment is coming: Modeling the dynamics of suspense. In: *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*. Ed. by A. Goel, C. Seifert, and C. Freksa.
- Ludwin-Peery, E. J., N. R. **Bramley**, E. Davis, and T. M. Gureckis (2019). Limits on the Use of Simulation in Physical Reasoning. In: *Proceedings of the 41st Annual Meeting of the Cognitive Science Society*. Ed. by A. Goel, C. Seifert, and C. Freksa.

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☎ +44 (79) 1441 9386 • ☎ +44 (131) 650 4643 • ✉ neil.bramley@ed.ac.uk

📧 bramleylab.ppls.ed.ac.uk • 🐦 [NeilBramley](https://twitter.com/NeilBramley) • 🌐 [neilbramley](https://neilbramley.com)

5. **Bramley**, N. R., A. Rothe, J. B. Tenenbaum, F. Xu, and T. M. Gureckis (2018). Grounding compositional hypothesis generation in specific instances. In: *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
6. **Bramley**, N. R., T. Gerstenberg, R. Mayrhofer, and D. A. Lagnado (2018). Time in causal structure learning. *Journal of Experimental Psychology: Learning, Memory & Cognition* **44**(2), 1880–1910.
7. **Bramley**, N. R., T. Gerstenberg, J. B. Tenenbaum, and T. M. Gureckis (2018). Intuitive experimentation in the physical world. *Cognitive Psychology* **195**, 9–38.
8. Davis, Z. J., N. R. **Bramley**, and R. E. Rehder (2018). Causal structure learning with continuous variables in continuous time. In: *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
9. Davis, Z. J., N. R. **Bramley**, R. E. Rehder, and T. M. Gureckis (2018). A causal model approach to dynamic control. In: *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
10. Meng, Y., N. R. **Bramley**, and F. Xu (2018). Children’s causal interventions combine discrimination and confirmation. In: *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
11. **Bramley**, N. R., P. Dayan, T. L. Griffiths, and D. A. Lagnado (2017). Formalizing Neurath’s ship: Approximate algorithms for online causal learning. *Psychological Review* **124**(3), 301–338.
12. **Bramley**, N. R., R. Mayrhofer, T. Gerstenberg, and D. A. Lagnado (2017). Causal learning from interventions and dynamics in continuous time. In: *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
13. Coenen, A., N. R. **Bramley**, A. Ruggeri, and T. M. Gureckis (2017). Beliefs about sparsity affect causal experimentation. In: *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
14. Schulz, E., E. D. Klenke, N. R. **Bramley**, and M. Speekenbrink (2017). Strategic exploration in human adaptive control. In: *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
15. **Bramley**, N. R., T. Gerstenberg, and J. B. Tenenbaum (2016). Natural science: Active learning in dynamic physical microworlds. In: *Proceedings of the 38th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society, pp.2567–2573.
16. McCormack, T., N. R. **Bramley**, C. Frosch, F. Patrick, and D. A. Lagnado (2016). Children’s Use of Interventions to Learn Causal Structure. *Journal of Experimental Child Psychology* **141**, 1–22.
17. **Bramley**, N. R., P. Dayan, and D. A. Lagnado (2015). Staying afloat on Neurath’s boat: Heuristics for sequential causal learning. In: *Proceedings of the 37th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society, pp.262–267.
18. **Bramley**, N. R., D. A. Lagnado, and M. Speekenbrink (2015). Conservative forgetful scholars: How people learn causal structure through interventions. *Journal of Experimental Psychology: Learning, Memory & Cognition* **41**(3), 708–731.
19. **Bramley**, N. R., T. Gerstenberg, and D. A. Lagnado (2014). The order of things: Inferring causal structure from temporal patterns. In: *Proceedings of the 36th Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society, pp.236–242.

Book chapters

20. **Bramley**, N. R., T. Gerstenberg, R. Mayrhofer, and D. A. Lagnado (2019). “Intervening in time”. In: *Time and Causality in the Sciences (edited volume)*. Ed. by S. Kleinberg. Cambridge University Press.

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Theses

21. **Bramley**, N. R. (Feb. 2017). "Constructing the world: Active causal learning in cognition". PhD thesis. UCL.
22. **Bramley**, N. R. (July 2013). "Algorithms for active causal learning". MRes thesis, UCL.
23. **Bramley**, N. R. (July 2011). "Mechanisms of active causal learning". MSc thesis, UCL.

Posters

24. **Bramley**, N. R., J. D. Nelson, M. Speekenbrink, V. Crupi, and D. A. Lagnado (2014). *What should causal learners value?* Poster presented at the Annual Meeting of the Psychonomic Society.
25. **Bramley**, N. R., M. Speekenbrink, and D. A. Lagnado (2013). *Mechanisms of active causal learning*. Poster presented at the 35th Annual Meeting of the Cognitive Science Society.

Miscellaneous

26. **Bramley**, N. R. (2014). *Book Review: Future-Minded: The Psychology of Agency and Control by Magda Osman*. In: *The London School of Economics Review of Books*.

Supervision

PhD Bonan Zhao (to start 2019) *Causal generalization*

Supervision

Graduate Anselm Rothe (2017) – *Active learning strategies in the game Mastermind*

student Ethan Ludwin–Peery (2017) – *Testing the assumptions of the intuitive physics theory*

projects Zach Davis (2017) – *Complex control with continuous variables in continuous time*
Zhiwei Li (2017) – *Predicting engagement via the temporal dynamics of belief, surprise and suspense*

Masters Matthew Kantor (2019) *Hypothesis adaptation in the language of thought*

dissertations Hector Mediero (2019) *Training active physics learning by combining behavioural data with reinforcement learning*

Mingxuan Mei (2019) *Learning to predict physical dynamics reinforcement learning*

Yves Wang, Galen Li, Cecilia Sun and Scarlett Liu (2018) – Capstone project on *Learning to actively learn about the physical world with deep reinforcement learning*.

Pablo León Villagrà (2015)– *Eliminating Markov violations by distinguishing structure and noise*

Alexandra Surdina (2014) – *Should I stay or should I go? Decisions under temporal uncertainty*

George Deane (2014) — *Integrated information theory: An empirical theory of phenomenal consciousness*

Undergraduate Sina Mindermann (2019) *Inferring causal directionality from residuals*

dissertations Rue Chaladauskaite & Ingrid Holmen (2019) *Dynamic decision making and self reflection*

Emily Bowie (2019) *Individual differences in skill learning*

Awards and Scholarships

£500 BPS Award for Outstanding Doctoral Research Contributions to Psychology (2017)

£500 EPS Grindley Grant (2016)

£1204 SLMS Graduate School Conference Fund (2016)

\$500 Robert J. Glushko and Pamela Samuelson Foundation Award for top 20 student papers at CogSci (2015)

£1470 SLMS Graduate School Conference Fund (2015)

£3000 Bogue Research Fellowship from UCL funding 3 month visit to UC Berkeley and NYU in the USA (2015)

£79,600 London Centre for Financial Computing and Analytics 4-year EPSRC PhD scholarship (2012 – 2016)

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£150 Award for best performing student in MSc Cognitive Decision Sciences (2011)

Invited talks

- Jul 2019 Hacks, habits and heuristics workshop, CogSci 2019, Montréal, Canada
- May 2019 Task-Agnostic Reinforcement Learning Workshop, ICLR, New Orleans, USA
- Apr 2019 iSearch, Max Planck Institute, Berlin, Germany
- Mar 2019 Centre for Logic, Language & Cognition, Amsterdam, Netherlands
- Feb 2019 CDT Pizza & Data, University of Edinburgh, Scotland
- Feb 2019 Human Cognitive Neuroscience Seminar, University of Edinburgh, Scotland
- Aug 2018 Program induction workshop, CogSci2018, Madison, WI, USA
- Apr 2018 Neuroscience Showcase, Center for Data Science, NYU, New York, NY, USA
- Mar 2018 Center for Data Science lunchtime series, NYU, New York, NY, USA
- Mar 2018 Psychology colloquium, UC Berkeley, Berkeley, CA, USA
- Feb 2018 Psychology colloquium, UC Irvine, Costa Mesa, CA, USA
- Oct 2017 Tenenbaum Lab, MIT, Cambridge, MA, USA
- Aug 2017 ILCC series, Informatics Forum, University of Edinburgh, UK
- Mar 2017 ConCats, NYU, New York, NY
- Mar 2016 Summerfield lab, Experimental Psychology, University of Oxford, UK
- Oct 2015 London Judgment and Decision Making Group, UCL, London, UK
- Jul 2015 Decision Making Symposium, Birkbeck, London, UK
- Mar 2015 Computational Cognitive Science Lab, UC Berkeley, CA, USA
- Feb 2015 Centre for Logic, Language and Cognition, University of Turin, Italy
- May 2014 Max Planck Institute for Human Development, Berlin, Germany

Conference & Workshop Presentations

- May 2019 Causal Cognition in Humans and Machines, Oxford, England
- Oct 2018 Moore Sloane Data Science Summit, Park City, UT, USA
- Oct 2017 Moore Sloane Data Science Summit, New Orleans, LA, USA
- Jul 2017 CogSci2017, London, UK
- May 2017 TaCitS, Hoboken, New Jersey
- Feb 2017 Gureckis lab talk, NYU, New York, NY, USA
- Aug 2016 CogSci2016, Philadelphia, PA, USA
- Aug 2016 ICT16, Brown University, Providence, RI, USA
- Aug 2015 CogSci2015, Pasadena, CA, USA
- Jul 2014 Decision making Bristol, University of Bristol, UK
- Jul 2013 SPUDM24, ISCE, Barcelona, Spain
- Jul 2013 MathPsych, Potsdam, Germany
- Mar 2012 TeaP (Conference on Experimental Psychology), Mannheim, Germany
- Feb 2012 Causality Workshop, Causal Cognition Group, UCL, London, UK
- Aug 2011 Causality Workshop, Causal Cognition Group, UCL, London, UK
- Mar 2011 English Graduate Conference on Lies and Deception, UCL, London, UK

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Summer schools, symposia & conferences organised

- Aug 2019 “Interacting Minds”, Joint research centre of University of Amsterdam and University of Edinburgh.
Co-organisers: Sonja Smets, Wendy Johnson, Jelle Zuidema, Raquel Fernández, Hannah Rohde, Ivan Titov, Leendert van Maanen
- Aug 2018 “Learning as Program induction” CogSci018, Madison, Wisconsin
Discussants: Josh Tenenbaum, Fei Xu, Laura Schulz, Noah Goodman, Steven Piantadosi, Marie Almaric, Eric Schulz, Neil Bramley, Ishita Dasgupta, Josh Rule, Lucas Morales
- Aug 2016 “Beyond Bayes nets” ICT16, Brown University
Discussants: James Woodward, Anna Coenen, Neil Bramley, Elias Bareinboim and Steven Sloman
- Sep 2013 “Forecasting, monitoring, controlling: Dealing with a dynamic world”, UCL
One day conference featuring Brad Love, Magda Osman, Nigel Harvey, Stephan Lewandowsky, Stian Reimers and many others

Teaching

2018

- PSYL10090 Psychology General Tutorial
PSYL08012 Psychology 2B, Psychology of language lectures

2019

- PSYL10090 Psychology General Tutorial
PPLS08002 Introduction to Cognitive Science
PPLS08002 Causal Cognition

Professional service

2012–present **Ad hoc reviewer.**

Cognition (3), *Psychological Science* (2), *JEP: General* (1), *JEP: Learning, Memory & Cognition* (7), *Memory & Cognition* (4), *Cognitive Science* (4), *Topics in Cognitive Science* (2), *Journal of Behavioral Decision Making* (1), *Experimental Psychology* (1), *Quarterly Journal of Experimental Psychology* (1), *Open Mind* (1), *PloS One* (1), *CogSci Conference* (14). Computational Brain & Behavior (1), Artificial Intelligence (1)

2017–2018 **Seminar series organizer**, NYU, New York, NY.
ConCats (Concepts and categories)

2012–2016 **Seminar series organizer**, UCL, London, UK.
LJDM (London Judgment and Decision Making)

Computer skills

- Modelling / statistics C, Cogent, Lisp, Julia, Jupyter, Mathematica, MATLAB, Python, Pytorch, R, Scikit Learn, SPSS, Stan, Tensor Flow, WebPPL, WinBUGS
- Web development AWS, ActionScript, Box2D, CSS, Flash, Flask, Flex, HTML5, Hugo, Git, Java, Javascript, Jekyll, Perl, PHP, PsiTurk, Ruby, SQL
- Misc Illustrator, LaTeX, Sublime, Microsoft Office

Languages

- English **Native**
Spanish **Intermediate**
German **Basic**

References

David Lagnado
Professor of Experimental Psychology
University College London
26 Bedford Way, 203
London, WC1H, 0AP
+44 20 7679 5389
d.lagnado@ucl.ac.uk

Todd Gureckis
Associate Professor of Psychology
New York University
6 Washington Place, 859
New York, NY 10003
+1 212 998 3794
todd.gureckis@nyu.edu

Peter Dayan
Research Group Director
Max-Planck Biological Cybernetics
Ring 8 Tübingen
72076
+49 7071 601 900
peter.dayan@tuebingen.mpg.de

Thomas Griffiths
Henry R. Luce Professor of Information Tech-
nology, Consciousness and Culture
Princeton University
320 Peretsman Scully Hall
Princeton, NJ 08540
+1 609 258 4442
tomg@princeton.edu

(more available upon request)