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

1. 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*.
2. 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.
3. 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.
4. 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.

Room S2, 7 George Square – Edinburgh, EH8 9JZ – Scotland
+44 (79) 1441 9386 • ☎ +44 (131) 650 4643 • ✉ neil.bramley@ed.ac.uk
bramleylab.ppls.ed.ac.uk • NeilBramley • neilbramley

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. Klenske, 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.

Room S2, 7 George Square – Edinburgh, EH8 9JZ – Scotland
+44 (79) 1441 9386 • +44 (131) 650 4643 • neil.bramley@ed.ac.uk
bramleylab.ppls.ed.ac.uk • NeilBramley • neilbramley

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 Supervision	Bonan Zhao (to start 2022) *Causal generalization* Jan-Philipp Franken (to start 2022) *Belief polarisation*
Masters dissertations	Matthew Kantor (2019) *Hypothesis adaptation in the language of thought* Hector Mediero (2019) *Training active physics learning by combining behavioural data with reinforcement learning* Mingxuan Mei (2019) *Learning to predict physical dynamics with 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 Villagrá (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*
Graduate student projects	Anselm Rothe (2017) Ethan Ludwin–Peery (2017) Zach Davis (2017) Zhiwei Li (2017)
Undergraduate dissertations	Sina Mindermann (2019) *Inferring causal direcitonality from residuals* Rue Chaladauskaite & Ingrid Holmen (2019) *Dynamic decision making and self reflection* Emily Bowie (2019) *Individual differences in skill learning*

Awards and Scholarships

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

Room S2, 7 George Square – Edinburgh, EH8 9JZ – Scotland
+44 (79) 1441 9386 • +44 (131) 650 4643 • neil.bramley@ed.ac.uk
bramleylab.ppls.ed.ac.uk • NeilBramley • neilbramley

Invited talks

Sep 2019	Psychology and Economics of Causal Reasoning, UCL, London
Aug 2019	Interacting Minds, Egmont aan Zee, Holland
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

Room S2, 7 George Square – Edinburgh, EH8 9JZ – Scotland
+44 (79) 1441 9386 • ☎ *+44 (131) 650 4643* • ✉ *neil.bramley@ed.ac.uk*
bramleylab.ppls.ed.ac.uk • *NeilBramley* • *neilbramley*

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

2019/20

PSYL10090 Psychology General Tutorial

PPLS08002 Introduction to Cognitive Science

PPLS08002 Causal Cognition

2018/19

PSYL10090 Psychology General Tutorial

PSYL08012 Pyschology 2B, Psychology of language lectures

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, 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, Microsoft Office, LaTeX, Sublime

Languages

English **Native**

Spanish **Intermediate**

German **Basic**

Room S2, 7 George Square – Edinburgh, EH8 9JZ – Scotland
+44 (79) 1441 9386 • ☎ +44 (131) 650 4643 • ✉ neil.bramley@ed.ac.uk
bramleylab.ppls.ed.ac.uk • NeilBramley • neilbramley

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

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

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

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

(more available upon request)