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. Donkin, C., A. Szollosi, and E. D. Neil R. **Bramley** (2021). Observing effects in various contexts won't give us general psychological theories - Commentary on 'The generalizability crisis' by Tal Yarkoni. *Behavioral and Brain Sciences*.
2. Gong, T. and N. R. **Bramley** (2021). Learning preventative and generative causal structures from point events in continuous time. In: *Causal Inference & Machine Learning: Why now? – Workshop at Neural Information Processing Systems*. Ed. by E. Bareinboim, B. Scholkopf, T. Sejnowski, Y. Bengio, and J. Pearl.
3. Li, Z., N. R. **Bramley**, and T. M. Gureckis (2021). Expectations about future learning influence moment-to-moment feelings of suspense. *Cognition and Emotion*.
4. Ludwin-Peery, E. J., N. R. **Bramley**, E. Davis, and T. M. Gureckis (2021). Limits on Simulation Approaches in Intuitive Physics. *Cognitive Psychology* **127**(101396).

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5. Valentin, S., S. Kleinegesse, N. R. **Bramley**, M. U. Gutmann, and C. G. Lucas (2021). Bayesian Optimal Experimental Design for Simulator Models of Cognition. In: *AI for Science: Mind the Gaps – Workshop at Neural Information Processing Systems*. Ed. by M. Tegmark, A. Weller, M. Welling, and M. Zitnik.
6. Zhao, B., C. G. Lucas, and N. R. **Bramley** (2021a). Building Object-based Causal Programs for Human-like Generalization. In: *Causal Inference & Machine Learning: Why now? – Workshop at Neural Information Processing Systems*. Ed. by E. Bareinboim, B. Scholkopf, T. Sejnowski, Y. Bengio, and J. Pearl.
7. Zhao, B., C. G. Lucas, and N. R. **Bramley** (2021b). How do people generalize causal relations over objects? A non-parametric Bayesian account. *Computational Brain & Behavior*.
8. Davis, Z. J., N. R. **Bramley**, and R. E. Rehder (2020a). Causal structure learning in continuous systems. *Frontiers in Psychology* **11**(244).
9. Davis, Z. J., N. R. **Bramley**, and R. E. Rehder (2020b). The paradox of time in dynamic causal systems. In: *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
10. Davis, Z. J., T. M. Gureckis, R. E. Rehder, and N. R. **Bramley** (2020). Human dynamic control under changing goals. In: *Causal learning for decision making workshop*. ICLR 2020.
11. Fränken, J.-P., N. Theodoropoulos, A. B. Moore, and N. R. **Bramley** (2020). Belief revision in a micro-social network: Modeling sensitivity to statistical dependencies in social learning. In: *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
12. Gong, T. and N. R. **Bramley** (2020). What you didn't see: Prevention and generation in continuous time causal induction. In: *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
13. Ludwin-Peery, E. J., N. R. **Bramley**, E. Davis, and T. M. Gureckis (2020b). Broken Physics: A conjunction fallacy effect in intuitive physical reasoning. *Psychological Science* **31**(12), 1602–1611.
14. Valentin, S., N. R. **Bramley**, and C. G. Lucas (2020). Learning hidden causal structure from temporal data. In: *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*. Austin, TX: Cognitive Science Society.
15. 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* **45**(11), 1923–1941.
16. 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. Austin, TX: Cognitive Science Society.
17. Li, Z., N. R. **Bramley**, and T. M. Gureckis (2019). The critical 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. Austin, TX: Cognitive Science Society.
18. 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. Austin, TX: Cognitive Science Society.
19. **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.
20. **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.
21. **Bramley**, N. R., T. Gerstenberg, J. B. Tenenbaum, and T. M. Gureckis (2018). Intuitive experimentation in the physical world. *Cognitive Psychology* **195**, 9–38.

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22. 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.
23. 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.
24. 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.
25. **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.
26. **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.
27. 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.
28. 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.
29. **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.
30. 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.
31. **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.
32. **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.
33. **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

34. **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.

Theses

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

Posters

38. Ludwin-Peery, E. J., N. R. **Bramley**, E. Davis, and T. M. Gureckis (2020a). *A Generalization Test of Conjunction Errors in Physical Reasoning*. Poster presented at the 42nd Annual Meeting of the Cognitive Science Society. Austin, TX.

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39. Otero Mediero, H. and N. R. **Bramley** (2020). *Contrasting RNN-based and simulation-based models of human physical parameter inference*. Poster presented at the 42nd Annual Meeting of the Cognitive Science Society. Austin, TX.
40. Zhao, B. and N. R. **Bramley** (2020). *Order effects in one-shot causal generalization*. Poster presented at the 42nd Annual Meeting of the Cognitive Science Society. Austin, TX.
41. **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.
42. **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

43. Davis, Z. J., T. M. Gureckis, R. E. Rehder, and N. R. **Bramley** (2020). Human dynamic control under changing goals. In: *Causal learning for decision making workshop*. ICLR 2020.
44. **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 (primary supervisor, expected 2022)
Jan-Philipp Franken (primary supervisor, expected 2022)
Tianwei Gong (primary supervisor, expected 2023)
Stephanie Droop (primary supervisor, expected 2025)
Simon Valentin (secondary supervisor, expected 2023)

Masters dissertations
Stephanie Droop, Edinburgh (2021)
Jonas Nagel, Edinburgh (2020)
Yuyan Zhang, Edinburgh (2020)
Tobias Thejll-Madsen (2020)
Tianwei Gong, Edinburgh (2020)
Hector Mediero, Edinburgh (2019)
Mingxuan Mei, Edinburgh (2019)
Yves Wang, Galen Li, Cecilia Sun & Scarlett Liu, NYU (2018)
Pablo León Villagrá, UCL (2015)
Alexandra Surdina, UCL (2014)
George Deane, UCL (2014)

Undergraduate dissertations
Zach Million, Edinburgh (2021)
Archie Miles, Edinburgh (2021)
Rue Chaladauskaite & Ingrid Holmen (2019)
Emily Bowie (2019)

Grants

2021-2024 **£649,875**, *Computational constructivism: The algorithmic basis of discovery*, UKRI EPSRC New Investigator Award.
CoI: Christopher G. Lucas,
Advisory panel: Fei Xu, Josh Tenenbaum, Todd Gureckis, Subramanian Ramamoorthy

Awards and Scholarships

2021 Edinburgh Futures Institute Small Project Award to run Computational Cogntive Science Retreat (∼£2500)

2021 Edinburgh University Students Association, Outstanding Course Nominee

2020 International Union of Psychological Science: Young Investigator Award for Basic Science

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2017 British Psychological Society Award for Outstanding Doctoral Research Contributions to Psychology

2016 Experimental Psychology Society Grindley Award (£500)

2016 UCL School of Life & Medical Sciences, Graduate School Conference Awards (£1204)

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

2015 UCL School of Life & Medical Sciences, Graduate School Conference Awards (£1470)

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

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

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

Invited talks

Oct 2021 Colloquium, Center for Cognitive Computation, Central European University (remote)

Apr 2021 Colloquium, University of New South Wales, Sydney, Australia (remote)

Jan 2021 Colloquium, University of Surrey, UK (remote)

Apr 2020 Lab Meeting, Computational Principles of Intelligence Lab, Tübingen, Germany (remote)

May 2020 Lab Meeting, Causality in Cognition Lab, Stanford (remote)

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

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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

Summer schools, symposia & conferences organised

Jul 2021 "Symbolic and sub-symbolic systems in people and machines", CogSci2021, Vienna (remote).
Co-organisers: Simon Valentin, Bonan Zhao, Chentian Jiang

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

University of Edinburgh, 2020/21

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

University of Edinburgh, 2019/20

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

University of Edinburgh, 2018/19

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

Professional service

2020–present **Editorial Board Member**.
Psychological Science

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2012–present **Ad hoc reviewer**.
Cognition, *Psychological Science*, *JEP: General*, *JEP: Learning, Memory & Cognition*, *Memory & Cognition*, *Cognitive Science*, *Topics in Cognitive Science*, *Journal of Behavioral Decision Making*, *Experimental Psychology*, *Quarterly Journal of Experimental Psychology*, *Open Mind*, *PloS One*, *CogSci Conference Proceedings*, *Computational Brain & Behavior*, *Artificial Intelligence*, *Frontiers in Cognitive Science*

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**

References

David Lagnado
Professor of Experimental Psychology
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