Neil Robert Bramley

Curriculum Vitae

Education

2013–2017 **PhD, Experimental Psychology**, *UCL*, London.
Title: Constructing the world: Active causal learning in cognition
Supervisors: Prof David Lagnado & Prof Peter Dayan

2012–2013 **MRes, Computer Science**, *UCL*, London.
Project grade: Distinction (84/100)
Overall grade: Merit (80/100)

2010–2011 **MSc, Cognitive & Decision Sciences**, *UCL*, London.
Project grade: Distinction (90/100)
Overall grade: Distinction & class prize (86/100)

2005–2009 **MA (Hons), Philosophy**, *University of Glasgow*, Glasgow.
Dissertation grade: 19/22
Overall grade: 17/22

Teaching

2012–2016 **Lecturer**, *UCL*, London, UK.
Ad-hoc lecturer for MSc, MRes and graduate psychology courses while at UCL
Topics taught:
- PSYCGD04: Knowledge, Learning & Inference, Experimental Psychology
  - Active learning (2014, 2016)
- PSYC1103: Introduction to Psychological Experimentation, Experimental Psychology
  - Causal representation (2015)
- PSYCGD01: Philosophy of Cognitive Science, Experimental Psychology
  - Theories of consciousness (2013)
  - Integrated information theory (2014, 2015)

2011–2014 **Teaching assistant**, *UCL*, London, UK.
Courses:
- PSYCGD05 Programming for Cognitive Science (MATLAB, python, javascript)
- PSYCGR01 Generic Research Skills (statistics)
- PSYCH1103 First Year Psychology Laboratory

Responsibilities:
- Providing in class support
- Marking, holding office hours
- Leading tutorials

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Academic work experience

2017–present **Moore-Sloan Postdoctoral Associate**, *NYU*, New York, NY.
- Associated with Cognition and Computation lab and NYU Center for Data Science
- Funded by Moore-Sloan Data Science Environment
- Conducting research into human cognition
- Combining behavioral experimentation, modeling & big data

2017–present **Seminar series organizer**, *NYU*, New York, NY.
ConCats (Concepts and categories) series in Psychology department.
Responsibilities:
- Inviting and hosting speakers

2012–2016 **Seminar series organizer**, *UCL*, London, UK.
London Judgment and Decision Making Seminar Series
Responsibilities:
- Inviting and hosting speakers
- Managing a small budget
- Promoting seminars, managing mailing lists
- Helping organize affiliate conference "Forecasting, monitoring, controlling: Dealing with a dynamic world" 19–20 Sep, 2013

2016 **Programme participant**, *University of Cambridge*, Cambridge, UK.
"Probability and Statistics in Forensic Science" (summer school length) workshop at the Isaac Newton Institute for Mathematical Sciences

2011–2016 **Private tuition**, *UCL*, London, UK.
Private statistics and programming tuition at MSc level for cognitive science students

2015 **Visiting researcher**, *UC Berkeley*, Berkeley, CA, USA.
Bogue fellowship funded research visit to Tom Griffiths' Computational Cognitive Science lab.

2015 **Visiting researcher**, *NYU / MIT*, New York, NY / Cambridge, MA.
Bogue fellowship funded research visit to Josh Tenenbaum's Computational Cognitive Science lab and Todd Gureckis' Computation and Cognition lab.

2011–2012 **Research assistant**, *Queen Mary, University of London*, London, UK.
Biological & Experimental Psychology Group
Responsibilities:
- Designing and programming pilot experiments for grant application
- Writing an (ultimately successful) ESRC grant application "Cognitive causal models of dynamic control"
- Securing endorsements from major UK energy regulators and suppliers

Publications

Forthcoming

1. Bramley, N. R., T. Gerstenberg, R. Mayrhofer, and D. A. Lagnado (submitted). Time in causal structure learning.
2. Bramley, N. R., T. Gerstenberg, J. B. Tenenbaum, and T. M. Gureckis (submitted). Intuitive experiments in the physical world.

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3. Coenen, A., A. Ruggeri, N. R. Bramley, and T. M. Gureckis (submitted). Beliefs about sparsity affect causal experimentation.
4. Bramley, N. R., T. Gerstenberg, R. Mayrhofer, and D. A. Lagnado (in prep). *Unifying intervention and time in causal learning*. Ed. by J. Livengood.
5. Bramley, N. R., R. Mayrhofer, T. Gerstenberg, and D. A. Lagnado (in prep). Dynamic continuous time interventions.
6. Davis, Z. J., N. R. Bramley, T. Gureckis, and R. Rehder (in prep). Modeling goal flexibility in complex dynamic control with the with the Ornstein–Uhlenbeck network.
7. Davis, Z. J., N. R. Bramley, and R. Rehder (in prep). Causal structure learning with continuous variables in continuous time.
8. Li, Z., N. R. Bramley, and T. Gureckis (in prep). Modeling engagement via the temporal dynamics of belief, surprise and suspense.
9. Schulz, E., M. Hofer, A. Rothe, N. R. Bramley, G. Kachergis, L. Bertram, V. Crupi, B. Meder, and J. D. Nelson (in prep). Charting the Landscape of Human Curiosity.

Journal articles

10. 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.
11. 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.
12. 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.

Peer reviewed conference proceedings

13. 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.
14. 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.
15. 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.
16. 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.
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.

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18. 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.

Posters

19. 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.
20. 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

21. 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*.

Theses

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

Supervision

Graduate student projects
Anselm Rothe (2017) – Active learning strategies in the game Mastermind
Ethan Ludwin–Peery (2017) – Testing the assumptions of the intuitive physics theory
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 dissertations
Alexandra Surdina (2014) — The bus paradox: When to stop waiting and start walking

Grants

NSF "Exploring the logic of discovery" – Computational Cognition co-PI with Professor Fei Xu, Berekley and Professor Todd Gureckis, NYU (under review)

Awards and Scholarships

£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)

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£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)

Invited talks

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

Symposia organised

Aug 2016 "Beyond Bayes nets" ICT16, Brown University Discussants: James Woodward, Anna Coenen, Neil Bramley, Elias Bareinboim and Steven Sloman

Conference & Workshop Presentations

Oct 2017 Moore Sloane Data Science Summit, New Orleans, LA, USA

Jul 2017 CogSci2017, London, UK

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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Professional service

Reviewer for *Journal of Experimental Psychology: General* (1), *Topics in Cognitive Science* (1), *Journal of Experimental Psychology: Learning, Memory & Cognition* (5), *Memory & Cognition* (4), *Cognitive Science* (2), *Journal of Behavioral Decision Making* (1), *Experimental Psychology* (1), *Quarterly Journal of Experimental Psychology* (1), *Open Mind* (1), *Annual Meeting of the Cognitive Science Society* (10).

Computer skills

Modelling / statistics: C, Cogent, Mathematica, MATLAB, Python, Pytorch, R, Scikit Learn, SPSS, Stan, WinBUGS

Web development: AWS, ActionScript, Box2D, CSS, Flash, Flex, HTML5, Git, Java, Javascript, Jekyll, Perl, PHP, PsiTurk, Ruby, SQL

Misc: Illustrator, LaTeX, Sublime, Microsoft Office

Languages

English **Native**

Spanish **Intermediate**

German **Basic**

Interests

- Guitar
- Surfing
- Long distance running
- Traveling

References

Prof David Lagnado

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Prof Peter Dayan

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(more available upon request)