

Olivia Guest

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CONTACT

Emails: o.guest@ucl.ac.uk

GitHub: [oliviaguest](#)

Website: [oliviaguest.com](#)

Twitter: [@o_guest](#)

Blog: [neuroplausible.com](#)

ORCID: [0000-0002-1891-0972](#)

CURRENT AFFILIATIONS

RISE, Cyprus

Research Centre on Interactive Media, Smart Systems and Emerging Technologies

Researcher

2019–

Department of Experimental Psychology, University College London, UK

Prof. Bradley C. Love's Lab

Affiliated Researcher

2019–

School of Mathematics, Computer Science and Engineering, City,
University of London, UK

CitAI, Artificial Intelligence Research Centre

Affiliated Researcher

2019–

PROFESSIONAL EXPERIENCE

RISE, Cyprus

Research Centre on Interactive Media, Smart Systems and Emerging Technologies

Researcher

2019–

- Funded by EU Horizon 2020 programme (grant 739578) and the Republic of Cyprus through the Directorate General for European Programmes, Coordination and Development.
- Researching deep neural network models with respect to face processing, conceptual organisation and alignment, and cognitive science generally.

Department of Experimental Psychology, University College London, UK

Prof. Bradley C. Love's Lab

Affiliated Researcher

2019–

- Serving on hiring committees for postdoctoral fellows.
- Assisting with Cognitive and Decision Sciences M.Sc.
- Mentoring students and postdocs.

Department of Experimental Psychology, University College London, UK

Postdoctoral Researcher

2016–2019

- Created computational models: for categorisation, for model-based fMRI, used deep neural networks, etc.
- Mentored Ph.D. and M.Sc. students (CSML and DSML M.Sc.s)
- Organised training courses for: git, continuous integration, module testing.
- Served on hiring committees for postdoctoral fellows.
- Assisted with Cognitive and Decision Sciences M.Sc.

Software Sustainability Institute, UK

Fellow 2016

2016–2017

- Received £3,000 grant funding for travel and organising workshops.
- Organised training courses for: version control (git), Python.
- Selected new fellows for 2017 and 2018.

Department of Experimental Psychology, University of Oxford, UK

Postdoctoral Researcher

2014–2016

- Created models for category learning in infancy.
- Tutored on the Language and Cognition module.
- Ran and developed the Block Practical: **Connectionist Models and Cognitive Processes**.

Department of Psychological Sciences, Birkbeck, UK

Graduate Teaching Assistant

2010–2014

- Taught on a range of courses within psychological sciences.
- Was trained to evaluate, mark, invigilate, and support part-time, mature, and full-time students.
- Managed the SONA system.
- Organised and led the **Centre for Cognition, Computation and Modelling's** seminar.

EDUCATION

Birkbeck, UK

2010–2014

Ph.D., Psychological Sciences, Sep 2014

- Thesis: *Towards a Unified Computational Account of Semantic Impairments*
- 1st Supervisor: *Richard P. Cooper*
- 2nd Supervisor: *Eddy J. Davelaar*

University College London, UK

2009–2010

M.Sc., **Cognitive and Decision Sciences** (Distinction), Sep 2010

- Thesis: *Modelling Semantic Memory & Its Impairments Following Neural Damage*
- Supervisor: *Richard P. Cooper*

The University of York, UK

2006–2009

B.Sc., **Computer Science**, Jun 2009

REVIEWING & SERVICE

ReScience C Journal – *Editor-in-Chief* 2020–
The Journal of Open Source Software – *Topic Editor* 2019–
ReScience C Journal – *Associate Editor* 2015–2020

Conferences (ad hoc)
 International Conference on Cognitive Modelling (ICCM), International Conference on Machine Learning (ICML), Scientific Computing with Python Conference (SciPy).

Journals (ad hoc)
 Cognitive Science Journal, Cognitive Psychology, Memory & Cognition, PLoS Computational Biology, Journal of Cognitive Neuroscience.

Special issue on **NeurIPS 2019 Reproducibility Challenge**
 Co-editing special issue of Rescience C.

PREPRINTS & UNPUBLISHED

Bobadilla Suarez, S., **Guest, O.**, & Love, B. C. (revise and resubmit). The neural link between subjective value and decision entropy. *Communications Biology*. doi.org/10.1101/2020.02.18.954362

Barlas, P., Kyriakou, K., **Guest, O.**, Kleanthous, S., & Otterbacher, J. (in prep). Social B(eye)as Dataset v2.0: Automatically Tagging People Images in Context.

Barlas, P., Kyriakou, K., **Guest, O.**, Kleanthous, S., & Otterbacher, J. (in prep). A “Woman’s Place” is Nowhere: Image Tagging Algorithms Overlook Women Even in Stereotypically Feminine Contexts.

Guest, O. & Martin, A. E. (under review, invited to special issue). **How computational modeling can force theory building in psychological science**. *Perspectives on Psychological Science*. doi.org/10.31234/osf.io/rybh9

Whitaker, K. J. & **Guest, O.** (invited, in press). #bropenscience is broken science. *The Psychologist*.

Guest, O. & Love, B. C. (2019). **Levels of Representation in a Deep Learning Model of Categorization**. *bioRxiv*. doi.org/10.1101/626374

PUBLICATIONS

Guest, O., Caso A. & Cooper, R. P. (2020, in press). On Simulating Neural Damage in Connectionist Networks. *Computational Brain & Behavior* doi.org/10.1007/s42113-020-00081-z

Botvinik-Nezer, R. et al. (2020). **Variability in the analysis of a single neuroimaging dataset by many teams**. *Nature*. doi.org/10.1038/s41586-020-2314-9

Guest, O., Kanayet, F. J., & Love, B. C. (2019). **Gerrymandering and Computational Redistricting**. *Journal of Computational Social Science*. doi.org/10.1007/s42001-019-00053-9

Rougier, N. P. et al. (2017). **Sustainable computational science: the ReScience initiative**. *PeerJ Computer Science*. doi.org/10.7717/peerj-cs.142

Love, B. C., **Guest, O.**, Slomka, P., Navarro, V., Wasserman, E. (2017). **Deep Networks as Models of Human and Animal Categorization**. In *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*. (pp. 1457–1458).

Guest, O. & Love, B. C. (2017). **What the Success of Brain Imaging Implies about the Neural Code**. *eLife*, 6:e21397. doi.org/10.7554/eLife.21397

Guest, O. & Rougier, N. P. (2016). *What is computational reproducibility?* *IEEE CIS Newsletter on Cognitive and Developmental Systems*, 13 (1).

Guest, O. (2016). *Crisis in What Exactly?.* *The Winnower*.
doi.org/10.15200/winn.146590.01538

Love, B. C., Kopeć, Ł. & **Guest, O.** (2015). *Optimism Bias in Fans and Sports Reporters*. *PLoS ONE*, 10 (9). doi.org/10.1371/journal.pone.0137685

Cooper, R. P. & **Guest, O.** (2014). *Implementations are not specifications: specification, replication and experimentation in computational cognitive modeling*. *Cognitive Systems Research*, 27, 42–49. doi.org/10.1016/j.cogsys.2013.05.001

Guest, O., Cooper, R. P. & Davelaar, E. J. (2014). [High-Level Cognition]. *The Influence of Implementation on “Hub” Models of Semantic Cognition*. In J. Mayor, P. Gomez (Eds.), *Computational Models of Cognitive Processes* (pp. 155–169). World Scientific.

Guest, O., Cooper, R. P. & Davelaar, E. J. (2012). *Semantic Cognition: A Re-examination of the Recurrent Network “Hub” Model*. In *Proceedings of the Ninth International Conference on Cognitive Modelling*. Berlin, Germany. April. (pp. 259–264). Berlin, Germany. April. Universitätsverlag der TU Berlin.

INVITED TALKS

Bordeaux-Sud-Ouest Inria Research Centre

Bordeaux, France

21–22 Sep 2020

- Talk (TBD): *How computational modeling can force theory building in psychological science*
- Organiser: Nicolas P. Rougier

ReproducibiliTea UCL

UCL, UK

14 Sep 2020

- Talk: *How computational modeling can force theory building in psychological science*
- Organiser: Emma Norris, Tabea Schoeler, & Jessie Baldwin

MathPsych/ICCM 2020

Toronto, Canada

25–28 Jul 2020

- Symposium: *Perspectives on “What makes a good theory?”*
- Organisers: Iris van Rooij & Chris Donkin

RIOT Science Club

King’s College London, London, UK

2 Jul 2020

- Talk (TBD): *How computational modeling can force theory building in psychological science*
- Organiser: Miguel Xochicale

ReproducibiliTea Glasgow

Univeristy of Glasgow, UK

20 Apr 2020

- Talk: *How computational modeling can force theory building in psychological science*
- Organisers: Anna Henschel & Stephanie Allan
- Speakers: Olivia Guest & Andrea E. Martin

Research Centre on Interactive Media, Smart Systems and Emerging Technologies

	Nicosia, Cyprus	16 Jul 2019
	<ul style="list-style-type: none"> Talk: <i>What do deep neural networks know?</i> 	
	Thirty-fifth International Conference on Machine Learning (ICML 2018)	
	Workshop: <i>Enabling Reproducibility in Machine Learning MLTrain@RML</i>	
	Stockholm, Sweden	14 Jul 2018
	<ul style="list-style-type: none"> Talk: <i>Varieties of Reproducibility in Empirical and Computational Domains.</i> 	
	Open Data Day 2018	
	Goldsmiths, University of London, UK	3 Mar 2018
	<ul style="list-style-type: none"> Talk: <i>Gerrymandering and Computational Redistricting.</i> 	
	Cognitive Neuroscience Friday Seminar (FriSem)	
	Stanford University, California, USA	16 Feb 2018
	<ul style="list-style-type: none"> Talk: <i>How deep networks contribute to our understanding of human and animal representation in categorization.</i> 	
	Research Programming Technical Social	
	University College London, UK	15 Nov 2017
	<ul style="list-style-type: none"> Talk: <i>Gerrymandering and Computational Redistricting.</i> 	
	Centre for Language Studies	
	Radboud University, The Netherlands	8 Mar 2017
	<ul style="list-style-type: none"> Talk: <i>What the Success of Brain Imaging Implies about the Neural Code.</i> 	
	London Judgement and Decision Making Seminars	
	University College London, UK	8 Feb 2017
	<ul style="list-style-type: none"> Talk: <i>What the Success of Brain Imaging Implies about the Neural Code.</i> 	
	Summerfield Lab	
	University of Oxford, UK	23 Nov 2016
	<ul style="list-style-type: none"> Talk: <i>What the Success of Brain Imaging Implies about the Neural Code.</i> 	
CONFERENCE PRESENTATIONS	Society for Neuroscience (SfN 2019)	
	Chicago, USA	19–23 Oct 2019
	<ul style="list-style-type: none"> Poster: <i>The neural link between subjective value and decision entropy.</i> Presented by: S. Bobadilla Suarez 	
	9th Annual Scientific Conference of Center for Applied Neuroscience	
	Nicosia, Cyprus	4 Oct 2019
	<ul style="list-style-type: none"> Talk and poster: <i>Levels of Representation in a Deep Learning Model of Categorization.</i> 	
	18th Annual Summer Interdisciplinary Conference (ASIC 2019)	
	Seefeld, Austria	17–22 Jun 2019
	<ul style="list-style-type: none"> Talk: <i>Levels of Representation in a Deep Learning Model of Categorization.</i> 	

39th Annual Meeting of the Cognitive Science Society (CogSci 2017)

London, UK

26–29 Jul 2017

- Talk: *Deep Networks as Models of Human and Animal Categorization.*

16th Annual Summer Interdisciplinary Conference (ASIC 2017)

Interlaken, Switzerland

15–20 Jul 2017

- Talk: *Deep Networks as Models of Human and Animal Categorization.*

1st Lancaster Conference on Infant and Early Child Development (LCICD 2016)

Lancaster, UK

25–27 Aug 2016

- Talk: *Representational Re-description in hSOMs.*

15th Annual Summer Interdisciplinary Conference (ASIC 2016)

Selva, Val Gardena, Italy

3–8 Jul 2016

- Talk: *What the Success of Brain Imaging Implies about the Neural Code.*

14th Annual Summer Interdisciplinary Conference (ASIC 2015)

Mammoth Lakes, California, USA

10–15 Jul 2015

- Talk: *Optimism Bias in Novice and Expert Sport Forecasting.*

13th Neural Computation and Psychology Workshop (NCPW 13)

BCBL, San Sebastian, Spain

12–14 Jul 2012

- Talk: *Exploring the influence of architecture and learning algorithm on the breakdown of the “hub” model of semantic cognition.*

11th International Conference on Cognitive Modeling (ICCM 2012)

Technische Universität Berlin, Berlin, Germany

12–15 Apr 2012

- Poster: *Semantic Cognition: A Re-examination of the Recurrent Network “Hub” Model.*
- Won Best Student Poster Prize.

ORGANISING

18th Scientific Computing with Python Conference (SciPy 2019)

Austin, Texas, USA

8–14 Jul 2019

- Chaired cognitive science and neuroscience mini-symposium with Nicolas P. Rougier.
- Reviewed conference submissions.

Women in Cognitive Science (WiCS) Panel at 40th Annual Meeting of the Cognitive Science Society (CogSci 2018)

Madison, Wisconsin, USA

25 Jul 2018

- Topic: *Women and Gender Minorities in Computational Cognitive Science: Sharing Experiences.*
- Co-organised with Nora S. Newcombe.

	16th Scientific Computing with Python Conference (SciPy 2017) Austin, Texas, USA 10–16 Jul 2017 <ul style="list-style-type: none"> • Chaired neuroscience mini-symposium with Ariel Rokem. • Reviewed conference submissions.
	Research Data Visualisation Workshop (RDVW) Software Sustainability Institute, University of Manchester 28 Jul 2016 <ul style="list-style-type: none"> • Organised 1-day workshop with Raniere Silva (main organiser) and Vince Knight. • Member of steering committee. • Obtained funding from RStudio.
	Introduction to Computational Cognitive Modelling Workshop CCCM, Birkbeck 23–25 Apr 2014 <ul style="list-style-type: none"> • Organised 3-day workshop with Chris Brand (co-organiser). • Prepared slides, exercises, created website.
TEACHING	Department of Experimental Psychology, University of Oxford, UK Postdoctoral Research Assistant 2014–2016 <i>Block Practical: Connectionist Models and Cognitive Processes</i> <ul style="list-style-type: none"> • Module: Third Year, B.Sc. • Designed course structure and materials (slides and exercises). • Set final report wherein students replicated from scratch Tyler et al. (2000) in Python. • Created course website: oliviaguest.com/connectionism. <i>Tutorial: Language and Cognition</i> <ul style="list-style-type: none"> • Module: Second Year, B.Sc. • Set essays and marked exams.
	Department of Psychological Sciences, Birkbeck, University of London, UK Graduate Teaching Assistant 2010–2014 <ul style="list-style-type: none"> • Modules Taught: General Foundations of Psychology, Psychobiology, Advanced Research Methods, Advanced Quantitative Methods, Memory and Cognition, Matlab Programming for Psychological Science,
MAINSTREAM MEDIA	Gerrymandering and computational redistricting 2017 <ul style="list-style-type: none"> • Media Coverage: <i>An Unbiased Algorithm Could Help Put an End to Partisan Gerrymandering</i>, Seeker
	BBC Radio 4: Today Show 2016 <ul style="list-style-type: none"> • Interview: <i>What can we learn in 4 months?</i>
	Optimism Bias in Fans and Sports Reporters 2015 <ul style="list-style-type: none"> • Press Releases: University of Oxford, UCL • Media Coverage: CS Monitor, Medical Daily, MinnPost, Newsweek, Pacific Standard, Phys.org.

TECHNICAL SKILLS

General

- Web design (e.g., bradlove.org, neuroplausible.com, oliviaguest.com, redistrict.science, compcog.science).
- Graphic design and image editing (i.e., Adobe Suite, GIMP, Inkscape).
- GUI design (i.e., PyGTK, GTK+).
- Artificial neural networks (e.g., TensorFlow).
- Unix (e.g., CLI, server administration).

Programming

Ada, C, C++, C#, Java, JavaScript, \LaTeX , MATLAB, OpenGL, Pascal, PHP, Prolog, Python, R, Scheme, SQL, Visual Basic.