

# Bonan Zhao

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## EDUCATION

<b>PhD, Psychology</b> , <i>University of Edinburgh</i> , Edinburgh, Scotland, UK	2019-2023
Project topic: A computational account of human causal generalization	
Advisors: Neil R. Bramley (Psychology), Christopher G. Lucas (Informatics)	
<b>MSc, Logic (Cum Laude)</b> , <i>University of Amsterdam</i> , Amsterdam, The Netherlands	2015-2017
<b>BA, Philosophy</b> , <i>Tsinghua University</i> , Beijing, China	2011-2015

## EXPERIENCE

<b>Training Fellow</b> , <i>Centre for Data, Culture &amp; Society</i> , University of Edinburgh, Edinburgh	2022-2023
<b>Open Research Facilitator</b> , <i>School of PPLS</i> , University of Edinburgh, Edinburgh	2021-2022
<b>Data Scientist</b> , <i>Screen 6</i> (Amsterdam startup), Amsterdam	2017-2019

## PUBLICATIONS

### Working papers

1. **B. Zhao**, C. G. Lucas, and N. R. Bramley. Bootstrap learning complex causal concepts, in prep
2. T. Gong, **B. Zhao**, C. G. Lucas, and R. McIntosh. Bayesian models of attention bias in line bisection tasks, in prep

### Peer-reviewed articles

3. **B. Zhao**, N. R. Bramley, and C. G. Lucas. Powering up causal generalization: A model of human conceptual bootstrapping with adaptor grammars. In *Proceedings of the 44th Annual Meeting of the Cognitive Science Society*. Cognitive Science Society, 2022
4. Z. Xia\*, **B. Zhao\***, T Quillien, and C. G. Lucas. Dissecting causal asymmetries in inductive generalization. In *Proceedings of the 44th Annual Meeting of the Cognitive Science Society*. Cognitive Science Society, 2022
5. N. Marchant, **B. Zhao**, N. R. Bramley, D. Morales, and S. E. Chaigneau. Categorizing perceived causal events. In *Proceedings of the 44th Annual Meeting of the Cognitive Science Society*. Cognitive Science Society, 2022
6. **B. Zhao**, C. G. Lucas, and N. R. Bramley. How do people generalize causal relations over objects? A non-parametric Bayesian account. *Computational Brain & Behavior*, 5:22–44, 2022
7. **B. Zhao**, C. G. Lucas, and N. R. Bramley. Building object-based causal programs for human-like generalization. In *Causal Inference & Machine Learning Workshop*. NeurIPS, 2021
8. S. Valentin, **B. Zhao**, C. Jiang, C. G. Lucas, and N. R. Bramley. Symbolic and sub-symbolic systems in people and machines. In *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society*. Cognitive Science Society, 2021
9. **B. Zhao** and N. R. Bramley. Order effects in one-shot causal generalization. In *Proceedings of the 42nd Annual Meeting of the Cognitive Science Society*. Cognitive Science Society, 2020
10. **B. Zhao**, I. van de Pol, M. Raijmakers, and J. Szymanik. Predicting cognitive difficulty of the

deductive mastermind game with dynamic epistemic logic models. In *Proceedings of the 40th Annual Meeting of the Cognitive Science Society*. Cognitive Science Society, 2018

11. V. Capraro, J. Sippel, **B. Zhao**, L. Hornischer, M. Savary, Z. Terzopoulou, P. Faucher, and S. F. Griffioen. People making deontological judgments in the trapdoor dilemma are perceived to be more prosocial in economic games than they actually are. *PLOS One*, 2018
12. Z. Terzopoulou, A. Solaki, and **B. Zhao**. Logic of closeness revision: Challenging relations in social networks. In *Proceedings of the ESSLLI 2016 Student Session*. 28th European Summer School in Logic, Language & Information, 2016

#### Posters

13. **B. Zhao**, C. G. Lucas, and N. R. Bramley. Powering up causal generalization: A model of human conceptual bootstrapping with adaptor grammars. Poster presented at the 44th Annual Meeting of the Cognitive Science Society, 2022
14. **B. Zhao**, C. G. Lucas, and N. R. Bramley. Building object-based causal programs for human-like generalization. Poster presented at Causal Inference & Machine Learning Workshop, NeurIPS, 2021
15. **B. Zhao** and N. R. Bramley. Order effects in one-shot causal generalization. Poster presented at the 42nd Annual Meeting of the Cognitive Science Society, 2020
16. **B. Zhao**, I. van de Pol, M. Raijmakers, and J. Szymanik. Predicting cognitive difficulty of the deductive mastermind game with dynamic epistemic logic models. Poster presented at the 40th Annual Meeting of the Cognitive Science Society, Madison, WI, USA, 2018
17. Z. Terzopoulou, A. Solaki, and **B. Zhao**. Logic of closeness revision and opinion-closeness revision. Poster presented at the 12th Conference on Logic and the Foundations of Game and Decision Theory (LOFT), Maastricht, The Netherlands, 2016

#### Organized workshop

18. S. Valentin, **B. Zhao**, C. Jiang, C. G. Lucas, and N. R. Bramley. Symbolic and sub-symbolic systems in people and machines. Workshop at the 43rd Annual Meeting of the Cognitive Science Society, 2021

#### INVITED TALKS

<b>Computational Cognitive Science Lab</b> , Princeton University, remote	Sep 2022
<b>Computation &amp; Cognition Lab</b> , Stanford University, remote	Sep 2022
<b>Computational Cognitive Science Lab</b> , University of Melbourne, remote	May 2022
<b>Logic and Interactive Rationality</b> , University of Amsterdam, remote	Mar 2022
<b>London Judgment and Decision Making Seminar</b> , London, UK	Mar 2022
<b>Causality in Cognition Lab</b> , Stanford University, remote	Feb 2022
<b>Computational Principles of Intelligence Lab</b> , MPI Tübingen, remote	Jul 2021
<b>DTU Compute</b> , Technical University of Denmark, Copenhagen, Denmark	Oct 2017
<b>Donders Institute for Brain, Cognition and Behaviour</b> , Nijmegen, The Netherlands	May 2017
<b>Cool Logic</b> , Institute for Logic, Language and Computation, Amsterdam, The Netherlands	Apr 2016

#### CONFERENCE & WORKSHOP PRESENTATIONS

<b>Edinburgh Computational CogSci Workshop</b> , University of Edinburgh	Jul 2022
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<b>Reasoning Workshop</b> , Edinburgh Laboratory for Integrated Artificial Intelligence	Jun 2022
<b>Causal Inference &amp; Machine Learning: Why now?</b> , NeurIPS, remote	Dec 2021
<b>Symbolic and sub-symbolic systems in people and machines</b> , CogSci 2021, remote	Jul 2021
<b>International Conference of Thinking (ICT 2020)</b> , remote	Jun 2021
<b>Annual Meeting of the Cognitive Science Society (CogSci 2020)</b> , remote	Aug 2020
<b>Annual Meeting of the Cognitive Science Society (CogSci 2018)</b> , Madison, US	Jul 2018
<b>North American Summer School on Logic, Language, and Information</b> , Rutgers, US	Jul 2016
<b>Logic and the Foundations of Game and Decision Theory</b> , Maastricht, The Netherlands	Jul 2016
<b>LABEX CIMI Pluridisciplinary Workshop on Game Theory</b> , Toulouse, France	Nov 2015

#### AWARDS & SCHOLARSHIPS

<b>Research Support Grants</b> , <i>Department of Psychology, University of Edinburgh</i>	2021,2022
Research travels and payment for participants	
<b>Postgraduate Research Award</b> , <i>University of Edinburgh</i>	2019-2022
International rate tuition fee and monthly stipend for three years	
<b>Springer Best Paper Award</b> , <i>European Summer School in Logic, Language and Information</i>	2016
<b>Amsterdam Excellence Scholarship</b> , <i>University of Amsterdam</i>	2015-2017
<b>National Merit Scholarship</b> , <i>Ministry of Education, PRC</i>	2015
<b>Dean's Award</b> , <i>Tsinghua University</i>	2014

#### TEACHING

<b>Tutor</b> , <i>University of Edinburgh</i> , Edinburgh	2020-2023
<ul style="list-style-type: none"> <li>• Introduction to Cognitive Science</li> <li>• Causal Cognition</li> <li>• Logic 1</li> <li>• Univariate Statistics and Methodology using R</li> <li>• Data Analysis for Psychology in R</li> </ul>	
<b>Mentor</b> , <i>HackYourFuture</i> , free refugee coding school (Amsterdam-based initiative)	2018-2019
<ul style="list-style-type: none"> <li>• Lead lecturer for course modules Git, CLI, and Database</li> <li>• TA for course modules JavaScript and React.js</li> </ul>	

#### SERVICE

##### Reviewer

- CogSci 2022, 2021, 2020
- Journal of Experimental Psychology: Applied

<b>Organizer</b> , EdinCoCoSci lab meetings, <i>University of Edinburgh</i>	2019-2022
<b>Organizer</b> , Logic Tea seminar series, <i>Institute for Logic, Language and Computation</i>	2016-2017

#### MENTORING

<b>Zeyu Xia</b>	MSc thesis project, School of Informatics, University of Edinburgh
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## SKILLS

<b>Computer skills</b>	Python, R, Flask, Hugo, Jekyll, JavaScript/HTML/CSS, SQL, L <sup>A</sup> T <sub>E</sub> X, Git, CLI
<b>Languages</b>	Mandarin Chinese (native), English (fluent), Japanese, Dutch

## REFERENCES

### **Dr. Neil R. Bramley**

Lecturer in Cognitive Psychology (Assistant Professor equiv.)

Department of Psychology, University of Edinburgh

S2, 7 George Square, EH8 9JZ Edinburgh, Scotland, UK

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### **Dr. Christopher G. Lucas**

Reader (Associate Professor equiv.)

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### **Prof. Dr. Sonja Smets**

Full professor of Logic and Epistemology

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