

Benjamin Oliver Barnett

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consciousness, perception, numerical cognition, theory of mind

EDUCATION

University College London	London, UK
<i>PhD: Characterising the Neural Correlates of Perceptual Experience</i>	Sep. 2020 – Oct. 2024
University of Sussex	Brighton, UK
<i>MSc in Intelligent and Adaptive Systems, Distinction</i>	Sep. 2017 – Sep. 2018
University of Sussex	Brighton, UK
<i>BSc in Neuroscience with Cognitive Science, First Class</i>	Sep. 2014 – May 2017

EMPLOYMENT

Post Doctoral Research Fellow	September 2025 – September 2027
<i>Birkbeck, University of London</i>	London, UK
• Conducting research using fMRI and computational modelling to explore the influence of social context on subjective perception	
Post Doctoral Research Fellow	October 2024 – August 2025
<i>University College London</i>	London, UK
• Research Fellow involved in Empirical Tests of Higher-Order Theories of Consciousness (ETHOS) adversarial collaboration	
• Conducting MEG, fMRI, and computational modelling research	
Research Associate and Lab Manager	September 2018 – August 31st 2020
<i>New York University</i>	New York, NY
• Conducted research using fMRI and online experiments	
• Developed online studies for PhD students and post-docs on internal javascript platform	
• Automated various lab administrative duties, including NIH data submission processes	
Junior Research Associate	July. 2016 – Sep 2016
<i>Sackler Centre for Consciousness Science</i>	Brighton, UK
• Devising, performing, and presenting experiments using virtual reality	
• Participated in public workshops where methods and theory were demonstrated and explained to members of the public	

PUBLICATIONS

- **Barnett, B.**, Mazor, M., Cabbai, G., Dijkstra, N. (2026) Vivid Imagery is Reported Faster than Weak Imagery. *Neuroscience of Consciousness*, Volume 2026, Issue 1, niaf054
- **Barnett, B.**, Fleming, S. (2025) Distinct neural representations of perceptual and numerical absence in the human brain. *PsyArxiv*
- **Barnett, B.**, Fleming, S. (2024) Symbolic and non-symbolic representations of numerical zero. *Current Biology*, Volume 34, Issue 16, p3804-3811.e4
- **Barnett, B.**, Andersen, L., Fleming, S., Dijkstra, N. (2024) Identifying content-invariant neural correlates of perceptual visibility. *PNAS Nexus*, Volume 3, Issue 2, pgae061
- **Barnett, B.O.**, Brooks, J.A., Freeman, J.B. (2021) Stereotypes bias face perception via orbitofrontal-fusiform cortical interaction. *Social Cognitive and Affective Neuroscience*, Volume 16, Issue 3, Pages 302–314,

POPULAR SCIENCE PUBLICATIONS

- **Barnett, B.**, (2024) Why Nothing Matters. *Aeon*

PRESENTATIONS AND POSTERS

- * **Barnett, B.**, Fleming, S. Symbolic and Non-Symbolic Representations of Numerical Zero in the Human Brain. *European Conference for Visual Perception, Aberdeen, 2024*
- * **Barnett, B.**, Fleming, S. Model-Based Planning as a Function of Consciousness. *Association for the Scientific Study of Consciousness, Tokyo, 2024*
- * **Barnett, B.**, Fleming, S. Perceptual Vividness and Neural Magnitude Codes. *Cognition, Consciousness and Computation Conference, Zagreb, 2024*
- * **Barnett, B.**, Fleming, S. Symbolic and Non-Symbolic Representations of Absence. *Association for the Scientific Study of Consciousness Conference, New York, 2023*
- * **Barnett, B.**, Andersen, L., Fleming, S., Dijkstra, N. Content-invariant neural correlates of phenomenal magnitude. *From Sensation to Awareness, Sussex University, 2023*
- * **Barnett, B.**, Andersen, L., Fleming, S., Dijkstra, N. Content-invariant neural correlates of phenomenal magnitude. *Association for the Scientific Study of Consciousness Conference, Amsterdam, 2022*
- * **Barnett, B.**, Andersen, L., Fleming, S., Dijkstra, N. Content-invariant neural correlates of phenomenal magnitude. *Computational Properties of the Prefrontal Cortex, Oxford, 2022*
- * **Barnett, B.**, Andersen, L., Fleming, S., Dijkstra, N. Isolating Abstract Awareness States: Probing the Neural Encoding of Levels of Subjective Experience Across Stimuli. *Association for the Scientific Study of Consciousness Conference, Tel Aviv, 2021*
- * **Barnett, B.**, Suzuki, K. The Impact of Embodiment on Intentional Binding: A Virtual Reality Study. *University of Sussex Junior Research Associate Poster Conference, 2016*

TEACHING AND SUPERVISION

Teaching

Autumn Term: 2022 - Present

- * Introduction to Statistical Methods using R 2022 & 2023 *Undergraduate Module*
- * Introduction to MEG: how and why do we use it? 2024 *Undergraduate Lecture*

Supervision

2021-Present

- * MSc Thesis: "The Effect of Zero During Symbolic and Non-Symbolic Numerical Comparison", 2024-2025
- * MSc Thesis: "Developing social cognition paradigms in Optically-Pumped MEG", 2022-2023
- * Mentor on the Underrepresented Student Mentor Programme, UCL Institute of Neurology, 2021-2022

Marking

2023

- * MSc theses
- * 'Brain and Behaviour' End of Module Exam Essays

AWARDS AND SCHOLARSHIPS

- * Guarantors of BRAIN Travel Grant *University College London*
- * UCL-PSL Doctoral Research Internship Award, *University College London*
- * Pegge Scholarship for Intelligent and Adaptive Systems MSc, *University of Sussex*
- * Junior Research Associate grant to perform summer research, *University of Sussex*

ADDITIONAL TRAINING AND EXPERIENCE

- * Performed peer-review for: *Behavior Research Methods, eLife*
- * Invited Public Engagement Talk: How Neuroscience Tackles the Problem of Consciousness. *Mind the Brain Conference, Institute of Cognitive Neuroscience, University College London*
- * 5 Week internship with Catherine Tallon-Baudry and the Subjectivity, Brain, and Viscera Group *École Normale Supérieure - Paris Sciences et Lettres University, Paris*
- * Chaired sessions for the M/EEG SPM Course, *Wellcome Center for Human Neuroimaging, University College London*
- * Organised and Chaired Methods for Dummies, *Wellcome Center for Human Neuroimaging, University College London*
- * Summer School in Consciousness and Metacognition, *University College London and Paris Sciences et Lettres University*
- * Statistics, Data analysis, and Modelling (Graduate Level), *University College London*
- * Cognitive Computational Modelling (Graduate Level), *New York University*
- * Diffusion Tensor Imaging Workshop, *New York University*
- * Bayesian Statistics: Techniques and Models, *UC Santa Cruz*
- * Bayesian Statistics: From Concept to Data Analysis, *UC Santa Cruz*

TECHNICAL SKILLS

Methods: MEG, fMRI, OP-MEG, RSA, Decoding, Psychophysiological Interactions, Feature Selection, Univariate fMRI analysis, Naive Bayes Classification, Bayesian Modelling, DNNs, RNNs, Sentiment Analysis, Linear and Logistic Regression, Virtual and Substitutional Reality, Threshold-Free Cluster Enhancement,

Languages: MATLAB, Python, R, JavaScript, HTML/CSS, bash

Software: FieldTrip, pyMVPA, fMRIprep, AFNI, FSL, SAS, SPSS, Tensorflow, Git, PyCharm, VS Code, Sublime, Jupyter, Jekyll, ssh, scp