Ziyi (Charlotte) Guo

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phone: +44 7519421126; LinkedIn (including details of mentoring and NGO involvement)
Univ. College London, Div. of Psychology & Language Sciences, London, UK

Research Interests

Inspired by a background in philosophy, my research interests lie at the interdisciplinary intersection of cognitive science, computational modelling and philosophy; using formal notions and frameworks to inform my empirical research, whilst evaluating the validity of philosophical theories, in light of recent behavioural and neuroimaging evidence.

In particular, I'm passionate about perception, attention and how phenomenological consciousness is represented in the brain, utilising computational and fMRI analysis tools. Parallel to that, I hold a keen interest in Neuroaesthetics.

Research Positions

Visiting Lecturer/Researcher - University College London

// September 2021 - October 2022

Laboratory of Language, Action and Body. PI: Dr. Jeremy Skipper

Using a naturalistic neuroimaging dataset collected from film watching, I am employing fMRI analyses toolboxes to investigate human brain's representation and inference of absence (e.g. an absent interlocutor in a scene), in aid of understanding episodic memory and the capacity of conscious processes. The project is interdisciplinary in nature, combining ideas and practises from media studies, philosophy and neuroscience.

Education

University College London - (Integrated) MSci, Psychology & Language Sciences // September 2018 - October 2022

My undergraduate studies were awarded a first-class distinction.

My second-year performance (2020) also received an academic prize and Dean's List nomination.

I'm currently on a gap year before my MRes and working as an RA.

Relevant Neuroscience and Computational Modules: Cellular Neurobiology, Brain in Action, Brain Stimulation, Neuroaesthetics, Visual Neuroscience, Neural basis of Perception and Attention; Intro and Advanced Quantitative Statistics, Intro to Deep Learning

Projects at UCL

Dissertation

Topic: Causal Inferences from Perception of Time (Grade: 75, high distinction)

My project investigates decision making during a perceptual task, in which the time intervals between events are varied. I am interested in how time delays influence people's confidence in causal judgements; furthermore, whether variations of time lead to abstract inferences towards unseen causal structure.

Supervisors: David A. Lagnado, Christos Bechlivanidis (Experimental Psychology, UCL)

Coursework titled *Discovery of Generative Syntactic Rules in an Unfamiliar Language* // awarded 85/100, A*
Essay titled *Visual Perception is not an Illusion Created by the Brain* // awarded 85/100, A*
Observational Placement Report *Implementation and analyses of standardised and exploratory tasks of children's psychological development, with a particular focus on language acquisition and language use* // awarded 85/100, A*

Christ's Hospital School - A Levels // September 2016 - June 2018, West Sussex, England

Grades: **A*** Mathematics, **A*** Chemistry, **Distinction 3** (High A or A* equiv.) Cambridge Pre-U Philosophy & Theology, **A*** Further Mathematics AS

Research and Work Experience

Carnegie Mellon University - Summer Research Studentship in Logic, Philosophy & Computational Studies // June 2020/June 2021

Topics include: causal modelling, causality in cognition, interactive theorem proving, topology, epistemic logic, algorithmic randomness and learning -> https://www.cmu.edu/dietrich/philosophy/undergraduate/summer-school/

Intern at Queen Square Institute of Neurology, UCL // Jan 2021 - March 2021

I contributed to a project investigating time perception in frontotemporal dementia patients, using a psychophysical decision-making task, working with MatLab in data analysis, in particular using the Palamedes toolbox for fitting psychometric curves.

Intern at Language and Cognition Lab, UCL // October 2019 - June 2020

Conducted detailed phonetic and psychoacoustic data analysis of naturalistic speech in Praat, with supervision from Prof. Gabriella Vigliocco (Experimental Psychology, UCL)

Technical Skills and Practical Experiences

- Programming: Python, R, Linux/Unix, Matlab
- Qualitative Data Analysis: Phonetics, Sociolinguistics (in *Praat*), Communication Transcript (particularly in developmental psychology), Corpus Linguistics
- Neuroimaging: fMRI - FSL, nilearn

Invited Talks and Presentations

University College London - Causal Cognition Lab (PI: Prof. David Lagnado) // Dec 2021
Lake Forest College - RAD Lab (PI: Prof. Paul Henne) // Jan 2021

Title: Are Slower Causes Still Causal? Expectation of delays between events shapes perceived causal strength and structure.

Extracurricular Academic Activities

- 5-day Workshop in Deep Learning and Linguistic Representation, *by Prof. Shalom Lappin* // part of NASSLLI conference, July 2020
- Course in Social Theory and the Study of Culture, *by Prof. Patrick Baert* // July - September 2020
- Auditing Formal Logic (Philosophy, UCL) // Oct - June 2021
- Auditing Advanced Statistical Methods (Psychology, UCL) // Oct - Dec 2021
- Auditing Aesthetics (Philosophy, UCL) // Jan - Apr 2022
- Auditing fMRI Design and Analyses (Psychology, UCL) // Jan - Apr 2022

Academic References

Prof. David A. Lagnado (Dissertation Supervisor - Psychology, Computational Modelling, Philosophy)
PI: Causal Cognition Lab, Experimental Psychology, UCL
Email: d.lagnado@ucl.ac.uk

Dr Klaus Abels (Lecturer - logic and syntax)
Associate Professor of Linguistics, Linguistics, UCL
Email: k.abels@ucl.ac.uk

Prof. Patrick Baert (Lecturer - Sociology, Philosophy, Culture and Media studies)
Professor of Social Theory, University of Cambridge
Email: pjnb100@cam.ac.uk