

Engineering and Physical Sciences Research Council Doctoral Landscape Award

PROJECT TITLE: Computational Models of Group Cultures

Lead Supervisor: Prof Miriam Koschate-Reis

Co-Supervisors: Prof Richard Everson

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Project details: Group cultures are defined by their values and norms, as well as how strictly these are enforced among group members. They are at the heart of our ability to act collectively and engender change. Understanding group cultures – from families to work cultures, from local cultures to political cultures – is therefore fundamental to our efforts to make societies greener, healthier and fairer. Traditionally, studies of group cultures have taken a societal perspective over extended periods. This project, however, focuses on how individuals dynamically adapt their behaviours in response to their group’s culture within social interactions. For instance, individuals may shift from work group norms to gender norms when confronted with a sexist comment. By integrating individual and group-level analyses, we can explore how the behaviours of group members influence the overall tightness or looseness of their group’s culture. Furthermore, current psychological research often relies on self-reported data from a limited number of participants, typically focusing on national or ethnic groups. This project aims to broaden this scope by examining shared interest groups, such as political or organisational entities using “big data” sources.

As a PhD candidate in this project, you will learn to utilise computational techniques, including natural language processing (NLP), machine learning, visualization methods, and social network analysis. These tools will enable us to investigate a diverse range of social groups based on real-world behaviours (e.g., language use) from interactions in online forums, historical records, and transcripts from debates in political institutions (see Cork et al., 2023 for an example using online forum data). Importantly, the project will develop novel methods to assess the extent to which group members’ behaviour reflects the group culture and how members respond when different group cultures apply.

Throughout this PhD journey, you will engage with social psychological theories related to group cultures, social groups, norms, social identities, social influence and social cohesion. You will apply various computational techniques to examine naturally occurring data relevant to their specific interests, whether in political or organisational contexts. You will be guided by an experienced interdisciplinary supervisor team based in psychology and computer science, respectively. You will also profit from access to the Institute for Data Science and AI (IDSAI), which links data science and AI researchers at Exeter to the national Alan Turing Institute and Ada Lovelace Institute and brings together researchers across disciplines in thematic groups such as Digital Humanities and the Centre for Computational Social Sciences (C2S2).

Additionally, you will have the unique opportunity to work alongside a Senior Computational Behavioural Scientist at the AI startup Boon Global (<https://www.boonglobal.io/>). Boon blend AI, psychological theory, and human expertise to aid strategic decision-making and address societal challenges. This collaboration will provide candidates with practical experience in



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translating interdisciplinary research into commercial applications. Ideally, you should be familiar with social science principles and either have experience with, or a willingness to learn, computational techniques, including programming in Python.

Project Specific requirements: Degree in psychology, political sciences, computer science or a related discipline

Potential PhD programme of study: PhD in Psychology

Department: Psychology

Location: Washington Singer Laboratories

Please direct project specific enquiries to: Prof Miriam Koschate-Reis, email: m.koschate-reis@exeter.ac.uk

Please ensure you read the entry requirements of programme to which you are applying.

To apply for this project please [click here](#).