

Predicting moment-by-moment fluctuations in worry

2020-08/Area: cognitive psychology/computational neuroscience

Background

Subjective feeling of worry affect a large part of the population, but little is known how fluctuations in such feelings arise, and how they relate to external events. While much progress has been made elucidating the computational mechanisms by which people generate feelings of happiness ¹, this is not the case for worry.

This project builds on a human approach/avoidance conflict computer game, often regarded as an experimental model of anxiety. In recent years, we have validated this model and demonstrated robust behavioural effects, as well as garnered consistent data on neural implementation ²⁻⁵. We have now recorded a pilot data set that includes reports of subjective feeling, and shown that moment-by-moment fluctuation in feeling can be predicted from task events.

The goal of this project is to generate hypotheses in the existing data set, and record new data to test them.

What you can learn

- Experimental skills in cognitive psychology research
- Statistical modelling skills
- Coding skills

Your profile

Your background is in neuroscience, psychology, or related fields, and you have experience with data analyses (e.g. in Python, R, or MATLAB).

Supervision

Dr. Dominik R. Bach, MBBS PhD

Principal Research Fellow

Max-Planck UCL Centre for Computational Psychiatry and Ageing Research

Wellcome Centre for Human Neuroimaging

Queen Square UCL Institute of Neurology

10-12 Russell Square

London WC1B 5EH

Information and contact

d.bach@ucl.ac.uk

bachlab.org

Literature

1. Rutledge, R.B., Skandali, N., Dayan, P. & Dolan, R.J. A computational and neural model of momentary subjective well-being. *Proc.Natl.Acad.Sci.U.S.A* **111**, 12252-12257 (2014).
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5. Bach, D.R., Hoffmann, M., Finke, C., Hurlemann, R. & Ploner, C.J. Disentangling Hippocampal and Amygdala Contribution to Human Anxiety-Like Behavior. *J Neurosci* **39**, 8517-8526 (2019).