

BRODIE E. MANGAN

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RESEARCH INTERESTS

Working Memory, Attention, Cognitive Control, Temporal Cognition, Neural Dynamics, EEG, Time-Frequency Analysis, Cross-Frequency Coupling, Non-Invasive Brain Stimulation, Computational Approaches to Cognition.

EDUCATION

University of Stirling <i>PhD in Psychology</i> Thesis: Cognitive Fatigue and Working Memory: Theory, Measurement, and Methodological Implications for Intervention Research Primary Supervisor: Dr Dimitrios Kourtis Secondary Supervisor: Dr Simone Tomaz	<i>Stirling, UK</i> <i>Sept 2023 – Present (expected completion: Summer/Autumn 2026)</i>
University of Glasgow <i>MSc in Brain Sciences (Merit)</i>	<i>Glasgow, UK</i> <i>2021</i>
Glasgow Caledonian University <i>Graduate Diploma in Psychology (Distinction)</i>	<i>Glasgow, UK</i> <i>2020</i>
The Open University <i>Investigating Psychology 1 (DE100) (Distinction)</i>	<i>Distance Learning</i> <i>2019</i>
University of the West of Scotland <i>BA in Sports Development</i>	<i>Hamilton, UK</i> <i>2012</i>

PUBLICATIONS AND RESEARCH OUTPUT

PEER-REVIEWED ARTICLES

MANGAN, B. E., & Kourtis, D. (2026). The Missing Link: Bridging Cognitive Fatigue with Working Memory. *Journal of Cognitive Neuroscience*. <https://doi.org/10.1162/JOCN.a.2398>

MANGAN, B. E., Tomaz, S., & Kourtis, D. (2026). The Missing Link: WAND for Active Cognitive Fatigue Induction. Under review at *PLOS ONE*.

MANGAN, B. E. (2026). Operational Drift: Why Validated Fatigue Induction is the Missing Link in Nature Restoration Research. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2026.1780136>

SOFTWARE

MANGAN, B. E. (2026). WAND (Working-memory Adaptive-fatigue with N-back Difficulty): A Modular Software Suite for Cognitive Fatigue Research. Forthcoming at *Journal of Open Source Software*.

MANGAN, B. E. (2026). EEG Analysis Pipeline for Active Cognitive Fatigue. Open-source. <https://github.com/brodie-neuro/EEG-Active-Cognitive-Fatigue-Pipeline>

PRESENTATIONS AND INVITED TALKS

(2026, August). *Does cognitive fatigue disrupt the theta-gamma code? An EEG test of the missing link hypothesis*. Oral presentation submitted to the British Psychological Society Cognitive Section Annual Conference, Liverpool, UK.

(2026, June). *Does cognitive fatigue disrupt the theta-gamma code? An EEG test of the missing link hypothesis*. Poster presentation accepted at the European Society for Cognitive and Affective Neuroscience (ESCAN), Rome, Italy.

(2026, April). Poster presentation at the British Neuroscience Association Members Meeting (BNA). Online.

(2025, September). *Validating WAND, a Protocol to Isolate Active Cognitive Fatigue*. Poster presentation at the Annual Meeting of the British Association for Cognitive Neurosciences (BACN), University of Edinburgh, UK.

(2024, May). *Laying the Groundwork: Objective Fatigue Measurement for Assessing Green Space Cognitive Restoration*. Invited talk, Psychology Research Seminar, University of Stirling, UK.

(2024, April). *Cognitive Enhancement via Green Space Environments*. Invited talk, Institute of Advanced Studies (Accessible Environments Cluster), University of Stirling, UK.

HONOURS AND AWARDS

European Society for Cognitive and Affective Neuroscience (ESCAN) 2026 – Travel Grant Award.
British Association for Cognitive Neuroscience Conference 2025 – Poster Prize Winner.
Nominated for ‘Outstanding Early Career Researcher’, University of Stirling Research Culture Awards | 2025.
PhD Studentship, Institute of Advanced Studies, University of Stirling | 2023.

SKILLS

RESEARCH METHODS. Experimental design, signal detection theory, computational modelling (drift diffusion, mixture models), systematic review, mixed-effects models.

PROGRAMMING AND SOFTWARE. Python, PsychoPy, R/RStudio, custom experimental platforms, reproducible pipelines, experience building and releasing open-source research tools.

EEG AND NEUROPHYSIOLOGY. EEG acquisition, automated preprocessing pipelines (MNE-Python), time-frequency analysis, event-related potentials, phase-amplitude coupling (theta-gamma, alpha-gamma), modulation index, spectral parameterisation, EMG-informed artefact control.

LANGUAGES. English (native).

PUBLIC ENGAGEMENT

Outreach and Public Engagement Training, Glasgow Science Centre (2025). Developed and delivered hands-on activities about space telescopes and exoplanet discovery to over 200 visitors.

RELEVANT PROFESSIONAL EXPERIENCE

Personal Trainer and High-Performance Coach

2008 – Present

Self-employed, Glasgow

- Developed and delivered long-term training and nutrition programmes for 1,000+ clients, ranging from beginners to elite athletes (part-time from 2023).
- Provided high-performance coaching for Red Bull projects, including multi-year work with Danny MacAskill across project completion, injury recovery, and commercial productions.
- Translated complex evidence into clear action plans and tracked adherence and outcomes over long time horizons.

Personal Health Consultant (Occupational Health)

2014 – 2018

EDF Energy, Hunterston Nuclear Power Station

- Designed and delivered data-driven lifestyle and training interventions to improve staff health and performance metrics in a high-risk industrial setting.
- Contributed to a team initiative that won the Health Working Lives Gold Award.
- Delivered coaching and education sessions and monitored engagement over time.

Paratrooper

2004 – 2008

The Parachute Regiment, 16 Air Assault Brigade, British Army

- Completed Pre-Parachute Selection (P Company) and the Basic Parachute Course.
- Qualified as a team medic, VHF/HF radio operator, and machine gun team leader.
- Served on operations in Afghanistan (Op Herrick, Helmand Province) and on exercises worldwide, including with US Special Operations, where awarded US Paratrooper Wings.

REFERENCES

Dr Dimitrios Kourtis (Primary Supervisor) | Senior Lecturer in Psychology, University of Stirling | dimitrios.kourtis@stir.ac.uk | +44 (0)1786 466979

Dr Simone Tomaz (Secondary Supervisor) | Lecturer in Exercise Physiology, University of Stirling | simone.tomaz@stir.ac.uk