Ondřej Zíka, DPhil

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EDUCATION

2015 - 2019 PhD in Clinical Neurosciences, **University of Oxford**
Computational modelling and neuroimaging of human aversive learning.
Supervisors: Dr. Katja Wiech and Prof. Rafal Bogacz.

2010 - 2014: BScEcon Marketing and Psychology (First Class Honours Degree)
Aberystwyth University, Wales

RELEVANT WORK EXPERIENCE

2019 - present: Post-doc and Deputy Principal Investigator, Max Planck Institute, Berlin
Group of Prof. Nico Schuck. Leading research projects in cognitive computational neuroscience.

2021 - 2022: Guest Editor at the International Journal of Psychophysiology
Managing manuscript submissions, finding reviewers, facilitating the review process, making editorial suggestions and decisions, writing decision letters.

2020 - 2024: Data Scientist, freelance
Past clients: German Ministry of Justice, GOOD BANK, Aurum International. Ongoing ice-hockey analytics project.

2014 - 2015: Research Assistant at University of Oxford, Functional Magnetic Resonance Imaging of the Brain Centre Role (Bishop lab)
Several projects investigating anxiety and depression, responsible for data collection and curation, coding experimental tasks and analysing data.

RELEVANT SKILLS

Communication
Academic publications (Nat. Comms., Biological Psychiatry), grant writing (funded 3-year DFG grant, submitted Emmy Noether, German ERC equivalent), invited talks, reviews, supervision, teamwork

Analysis
Probabilistic models (Stan, PyMC), hierarchical statistical models (GLMs), reinforcement learning, machine learning (clustering, classification)

Experimental
On-line testing (e.g., via Prolific), randomised controlled trials, fMRI, EEG, pupillometry, eye-tracking, simulations & power

IT/sysadmin
Linux, cloud computing and experimental deployment (e.g., Google Cloud, AWS)

Programming
R, Python (daily use), Matlab, JavaScript, Bash

Visualisation and design
Inkscape, Figma, PixiJS, jsPsych, R and Python libraries (ggplot, seaborn)

Project management
github/gitlab ecosystem (issues, pull requests etc.), Notion, mkdocs

Code and data management
git, Datalad, databases (basic SQL and MongoDB)

SELECTED PUBLICATIONS

Zika, O., Appel, J., Klinge, C., Shkreli, L., Browning, M., Wiech, K. A. and Reinecke, A. (2024). Reduction of aversive learning rates by Angiotensin II antagonist losartan: A randomised controlled trial. *Biological Psychiatry*. https://doi.org/10.1016/j.biopsych.2024.01.020

Koch, C., **Zika**, **O.**, Bruckner, R., Schuck, N. W. (2024, *preprint*). Influence of surprise on reinforcement learning in younger and older adults. https://doi.org/10.31234/osf.io/unx5y

Zika, O., Wiech, K. A., Reinecke, A., Browning, M. and Schuck, N. W. (2023). Trait anxiety is associated with hidden state inference. *Nature Communications* 14, 4203. https://doi.org/10.1038/s41467-023-39825-3

Petzka, M., **Zika, O.**, Staresina, B. P., Cairney, S. A. (2023). Better late than never: sleep still supports memory consolidation after prolonged periods of wakefulness. *Learning and Memory*, 30: 245-249.

Zika, O. (2023). The relationship between latent state inference and (intolerance of) uncertainty. *Neuroscience and Behavioural Reviews,* 152, https://doi.org/10.1016/j.neubiorev.2023.105321

Morriss, J., Abend, R., **Zika, O.,** Bradford, D. and Mertens, G. (2023). Neural and psychophysiological markers of intolerance of uncertainty. *International Journal of Psychophysiology.* https://doi.org/10.1016/j.ijpsycho.2023.01.003

Gagne, C., **Zika, O.**, Dayan, P., & Bishop, S. J. (2020). Impaired adaptation of learning to contingency volatility in internalizing psychopathology. *Elife*, 9, e61387.

Zika, O. (2019). Computational and Neural Mechanisms of Human Aversive Learning, ProQuest Dissertations and Theses. http://solo.bodleian.ox.ac.uk/permalink/f/1lj314/TN_proquest2440365805

Bijsterbosch, J. D., Ansari, T. L., Smith, S., Gauld, O., **Zika, O.**, Boessenkool, S., Browning, M., Reinecke, A. and Bishop, S. J. (2018). Stratification of MDD and GAD patients by resting state brain connectivity predicts cognitive bias. *Neuroimage Clin.*, 19: 425–433.

McNamee, D., Liljeholm, M., **Zika, O.** and O'Doherty, J.P. (2015). Characterizing the associative content of brain structures involved in habitual and goal-directed actions in humans: a multivariate fMRI study. *Journal of Neuroscience*, 35(9), 3764 - 3771.

Gao, S., **Zika, O.**, Rogers, R. and Thierry, G. L. (2015). Second language feedback abolishes the "hot hand" effect during even-probability gambling. *Journal of Neuroscience*, 35(15), 5983-5989.

TEACHING AND SUPERVISION EXPERIENCE

Supervision
2022-25   PhD of Luianta Verra, *Aversive generalisation and replay in health and disease*
2021-22   MSc thesis of Luianta Verra, *Behavioural and neural basis of uncertainty*
2020   Katya Yasenska
2019   Verena Sarrazin, Sudeshna Bora
2017   Judith Appel

Teaching
2021   Full-day tutorial on using git and datalad for project management and reproducibility
2021   Guest lecture "The (not so unlikely) relationship between architecture and neuroscience: from grid cells to design", Polytechnic University of Milan
2021   Guest lecture "Neural and Computational basis of Reinforcement Learning", Max Planck Graduate School LIFE Seminar
2018 - 2019   Statistics tutor in Biomedical Sciences, University of Oxford
2018   Participation in the in2science programme, hosted a student over summer

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INVITED TALKS

February 2024 Lifespan Development Colloquium, MPIB, Berlin
Department of Psychology, University of Amsterdam, Kindt lab
August 2023   Reinforcement learning and decision making seminar, Peter Dayan Lab, Tübingen
July 2023   Trinity College Dublin, Department of Psychology, Gillan lab
June 2023   Institute for Systems Neuroscience, UKE Hamburg, Hamburg, Germany,
May 2023   European Meeting for Human Fear Conditioning 2023
Feb 2023   UCL Max Planck Computational Psychiatry Seminar series
June 2022   Reinforcement Learning and Decision-Making (RLDM) 2022 Conference
PAIN Group meeting, University of Oxford, UK
May 2022   European Meeting for Human fear Conditioning 2022, presentation
April 2022   PHI Lab, University of Torun, Poland
Feb 2022   Nassar Lab Meeting, Brown University, US

HONOURS, AWARDS AND SCHOLARSHIPS

2022 Jacobs Foundation Seed Grant, three year grant, 75 000 CHF
2021 DFG (German Research Foundation) three-year grant award to study neural
processing of belief-state uncertainty, with Prof. Nicolas Schuck and Prof. John-Dylan Haynes, €281 786,
https://gepris.dfg.de/gepris/projekt/462197630
2017 Medical Research Council Supplementary Training Award: £3 000
Travel Award for Cognitive Computational Neuroscience 2017: $500
2015 - 2018 Medical Sciences Graduate School Studentship
2014 Prize for Best Undergraduate Joint Honours Dissertation Project, British
Psychological Society
2013 The Kellner Foundation Scholarship for talented Czech students: £3 500
Dilys Edmunds Scholarship: £200
2012 The Kellner Foundation Scholarship for talented Czech students: $20 000
Thomas Charles Edwards Scholarship: £180

CONFERENCE PRESENTATIONS AND POSTERS

2023 European Meeting for Human Fear Conditioning 2023, Salzburg, Talk
Computational Psychiatry 2023, Dublin, Talk/Poster
2022 Reinforcement Learning and Decision Making (RLDM)**,** Providence, Talk
European Meeting for Human Fear Conditioning, online, Talk
Computational Properties of the Prefrontal Cortex, Oxford, Poster
2021 Society for Affective Science Annual Meeting (SAS), Pre-recorded talk
European Meeting for Human Fear Conditioning (EMHFC), Poster
2019 Cognitive Computational Neuroscience (CCN), Poster
Motivation and Cognitive Control (MCC), Poster
Orbito-frontal Cortex Meeting, Paris, Poster
2018 Society for Neuroscience, San Diego, Poster
Bayesian Modelling Course, Amsterdam, Poster
2017 Pain Research Meeting, Antwerp, Poster
Cognitive Computational Neuroscience (CCN), Poster

AD-HOC REVIEWER FOR

Journal of Neuroscience, Nature Human Behaviour, Brain, European Journal of Pain, The Journal of Pain, NeuroImage, Neuropsychologia, Cerebral Cortex, PLOS Computational Biology, Emotion, The International Journal of Psychophysiology, Translational Psychiatry, Behavioural and Neuroscience Reviews.

REFEREES

Prof. Nicolas Schuck, Universität Hamburg, Von-Melle-Park 5, 20146 Hamburg, nicolas.schuck@uni-hamburg.de.

Dr. Katja Wiech, WIN Center, Nuffield Department of Clinical Neurosciences, Oxford University, FMRIB Building, John Radcliffe Hospital, Headington, Oxford, OX3 9DU. katja.wiech@ndcn.ox.ac.uk