Veith Weilnhammer

CV

Max Planck UCL Centre
Computational Psychiatry and Ageing Research
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Personal Statement

I am a neuroscientist, psychiatrist, and psychotherapist. I work on digital technologies to better understand, predict, and improve mental health.

Education and Degrees

2023 **Habilitation degree in Experimental Psychiatry**, Charité, Berlin, Germany.
The construction of unambiguous conscious experiences from ambiguous sensory information.

2023 **Board certificate in Psychiatry & Psychotherapy**.

2015 **Doctoral degree (MD)**, Charité, Berlin, Germany.
Frontoparietal cortex mediates perceptual transitions in bistable perception (summa cum laude).

2015 **Medical degree**, Charité, Berlin, Germany.

2007-2015 **Medical school**, Charité, Berlin, Germany, and Universidade Nova, Lisbon, Portugal.

2006-2007 **Studium Generale**, Leibniz Kolleg, Eberhard Karls Universität, Tübingen, Germany.

Professional Experience

2025–present **Max Planck Fellow**, Max Planck UCL Centre for Computational Psychiatry & Ageing Research.

2025–present **Clinical Affiliate**, Lyra Health.

2023–2025 **Leopoldina Fellow**, Helen Wills Neuroscience Institute, University of California, Berkeley.

2015–2023 **Clinician scientist**, Department of Psychiatry, Charité, Berlin.

2016–2023 **Psychotherapist in training**, Center for Psychotherapy, Humboldt Universität, Berlin.

2015–2023 **Psychiatrist in training**, Advisor: Andreas Heinz, Department of Psychiatry, Charité, Berlin.

2012–2013 **Minerva fellow**, Advisor: Rafi Malach, Weizmann Institute, Rehovot.

Fellowships and Awards

2025–present **NARSAD Young Investigator Award**, Brain & Behavior Research Foundation

2023–2025 **Leopoldina Postdoctoral Fellowship**, German National Academy of Sciences

2023 **Walter Benjamin Fellowship**, DFG

2019–2022 **Clinician Scientist Fellowship**, Berlin Institute of Health

2017–2018 **Junior Clinician Scientist Fellowship**, Berlin Institute of Health

2013 **Minerva Short Term Fellowship**, Minerva Foundation, Max-Planck Society

2007–2015 **University Scholarship**, German Academic Scholarship Foundation

Skills

Clinical Ketamine-and TMS-assisted treatments, cognitive behavioral therapy, systemic psychotherapy, Open Dialogue, deep brain stimulation

Experimental Computational modeling, machine learning, psychophysics, fMRI, TMS, M/EEG, Neuropixels.

Code Python, R, JavaScript, Matlab; full-stack with React, Node.js, Tailwind, and Vite

Key Publications

2025 **Veith Weilnhammer**, Marcus Rothkirch, Deniz Yilmaz, Merve Fritsch, Lena Esther Ptasczynski, Katrin Reichenbach, Lukas Rödiger, Philip Corlett, and Philipp Sterzer. N-methyl-d-aspartate receptor hypofunction causes recurrent and transient failures of perceptual inference. *Brain*, page awaf011, January 2025.

2025 **Veith Weilnhammer**, Jefferson Ortega, and David Whitney. Human-computer interactions predict mental health. *arXiv*, page 2511.20179, November 2025.

2024 **Veith Weilnhammer**, Yuki Murai, and David Whitney. Dynamic predictive templates in perception. *Current Biology*, volume 34, pages 4301 – 4306.e2, August 2024.

2023 **Veith Weilnhammer**, Heiner Stuke, Kai Standvoss, and Philipp Sterzer. Sensory processing in humans and mice fluctuates between external and internal modes. *PLOS Biology*, volume 21, page e3002410, August 2023.

2021 **Veith Weilnhammer**, Merve Fritsch, Meera Chikermane, Anna-Lena Eckert, Katharina Kanthak, Heiner Stuke, Jakob Kaminski, and Philipp Sterzer. An active role of inferior frontal cortex in conscious experience. *Current Biology*, volume 31, pages 2868–2880.e8, July 2021.

Peer-reviewed publications

2025 **Veith Weilnhammer**, Marcus Rothkirch, Deniz Yilmaz, Merve Fritsch, Lena Esther Ptasczynski, Katrin Reichenbach, Lukas Rödiger, Philip Corlett, and Philipp Sterzer. N-methyl-d-aspartate receptor hypofunction causes recurrent and transient failures of perceptual inference. *Brain*, page awaf011, January 2025.

2025 Anna-Chiara Schaub, Anna-Lena Eckert, Stijn A. Nuiten, **Veith Weilnhammer**, and Philipp Sterzer. Reduced weighting of short-term perceptual priors during auditory perceptual decision-making in psychosis-prone individuals. *BMC biology*, volume 23, page 310, October 2025.

2025 Katrin Reichenbach, Marcus Rothkirch, Lucca Jaeckel, Philipp Sterzer, and **Veith Weilnhammer**. Anterior insular activity signals perceptual conflicts induced by temporal and spatial context. *Neuroscience of Consciousness*, volume 2025, page niaf030, 2025. Publisher: Oxford University Press.

2024 **Veith Weilnhammer**, Yuki Murai, and David Whitney. Dynamic predictive templates in perception. *Current Biology*, volume 34, pages 4301 – 4306.e2, August 2024.

2024 **Veith Weilnhammer**. Where is the ghost in the shell? *Neuroscience of Consciousness*, volume 2024, page niae015, January 2024.

2023 **Veith Weilnhammer**, Heiner Stuke, Kai Standvoss, and Philipp Sterzer. Sensory processing in humans and mice fluctuates between external and internal modes. *PLOS Biology*, volume 21, page e3002410, August 2023.

2023 Heiner Stuke, Kathlen Priebe, **Veith Weilnhammer**, Hannes Stuke, and Nikola Schoofs. Sparse models for predicting psychosocial impairments in patients with PTSD: An empirical Bayes approach. *Psychological Trauma: Theory, Research, Practice and Policy*, volume 15, pages 80–87, January 2023.

2023 Laurie-Anne Sapey-Triomphe, Lauren Pattyn, **Veith Weilnhammer**, Philipp Sterzer, and Johan Wagemans. Neural correlates of hierarchical predictive processes in autistic adults. *Nature Communications*, volume 14, page 3640, June 2023.

2023 Merve Fritsch, **Veith Weilnhammer**, Paul Thiele, Andreas Heinz, and Philipp Sterzer. Sensory and environmental uncertainty in perceptual decision-making. *iScience*, volume 26, page 106412, April 2023.

2022 Laurie-Anne Sapey-Triomphe, **Veith Weilnhammer**, and Johan Wagemans. Associative learning under uncertainty in adults with autism: Intact learning of the cue-outcome contingency, but slower updating of priors. *Autism: The International Journal of Research and Practice*, volume 26, pages 1216–1228, July 2022.

2022 Stephan Köhler, **Veith Weilnhammer**, Henrik Walter, Susanne Erk, Philipp Sterzer, and Anne Guhn. Autobiographical Script-Driven Imagery Has No Detectable Effect on Emotion Regulation in Healthy Individuals. *Neuropsychobiology*, volume 81, pages 141–148, August 2022.

2021 **Veith Weilnhammer**, Merve Fritsch, Meera Chikermane, Anna-Lena Eckert, Katharina Kanthak, Heiner Stuke, Jakob Kaminski, and Philipp Sterzer. An active role of inferior frontal cortex in conscious experience. *Current Biology*, volume 31, pages 2868–2880.e8, July 2021.

2021 **Veith Weilnhammer**, Meera Chikermane, and Philipp Sterzer. Bistable perception alternates between internal and external modes of sensory processing. *iScience*, volume 24, page 102234, March 2021.

2021 Heiner Stuke, Elisabeth Kress, **Veith Weilnhammer**, Philipp Sterzer, and Katharina Schmack. Overly strong priors for socially meaningful visual signals are linked to psychosis proneness in healthy individuals. *Frontiers in psychology*, volume 12, page 583637, May 2021.

2020 **Veith Weilnhammer**, Lukas Röd, Anna-Lena Eckert, Heiner Stuke, Andreas Heinz, and Philipp Sterzer. Psychotic Experiences in Schizophrenia and Sensitivity to Sensory Evidence. *Schizophrenia bulletin*, volume 46, pages 927–936, February 2020.

2018 **Veith Weilnhammer**, Heiner Stuke, Philipp Sterzer, and Katharina Schmack. The Neural Correlates of Hierarchical Predictions for Perceptual Decisions. *The Journal of Neuroscience*, volume 38, pages 5008–5021, May 2018.

2018 Heiner Stuke, **Veith Weilnhammer**, Philipp Sterzer, and Katharina Schmack. Delusion Proneness is Linked to a Reduced Usage of Prior Beliefs in Perceptual Decisions. *Schizophrenia Bulletin*, volume 45, pages 80–86, January 2018.

2017 **Veith Weilnhammer**, Heiner Stuke, Guido Hesselmann, Philipp Sterzer, and Katharina Schmack. A predictive coding account of bistable perception - a model-based fMRI study. *PLOS Computational Biology*, volume 13, page e1005536, May 2017.

2017 Heiner Stuke, Hannes Stuke, **Veith Weilnhammer**, and Katharina Schmack. Psychotic Experiences and Overhasty Inferences Are Related to Maladaptive Learning. *PLOS Computational Biology*, volume 13, page e1005328, January 2017.

2016 **Veith Weilnhammer**, Philipp Sterzer, and Guido Hesselmann. Perceptual Stability of the Lissajous Figure Is Modulated by the Speed of Illusory Rotation. *PloS one*, volume 11, page e0160772, May 2016.

2016 Katharina Schmack, **Veith Weilnhammer**, Jakob Heinzle, Klaas E Stephan, and Philipp Sterzer. Learning What to See in a Changing World. *Frontiers in human neuroscience*, volume 10, page 263, 2016.

2014 **Veith Weilnhammer**, Karin Ludwig, Philipp Sterzer, and G Hesselmann. Revisiting the Lissajous figure as a tool to study bistable perception. *Vision research*, volume 98, pages 107–12, May 2014.

2013 **Veith Weilnhammer**, Karin Ludwig, Guido Hesselmann, and Philipp Sterzer. Frontoparietal cortex mediates perceptual transitions in bistable perception. *The Journal of Neuroscience*, volume 33, pages 16009–15, October 2013.

Preprints

2025 **Veith Weilnhammer**, Jefferson Ortega, and David Whitney. Human-computer interactions predict mental health. *arXiv*, page 2511.20179, November 2025.

2025 Isabella Goodwin, Kelly Diederen, **Weilnhammer, Veith**, Emiliy Hird, Marta Garrido, and Franziska Knolle. Predictive processing accounts of psychosis: Bottom-up or top-down disruptions, where do we stand? *OSF*, March 2025.

2024 Merve Fritsch, Jochen Michely, Lucca Jaeckel, Ida Rangus, Christoph Riegler, Jan Scheitz, Christian H. Nolte, Philipp Sterzer, and **Veith Weilnhammer**. Ischemic lesions to inferior frontal cortex alter the dynamics of conscious visual perception. *bioRxiv*, August 2024.

Invited Presentations

2025 New ways to measure mental health. Keynote, 2025. MESEC Workshop, Lago di Bolsena, Tuscany, Italy.

2025 The geometry of mental health. Talk, 2025. UCL-DRCMR Symposium, Copenhagen, Denmark.

2023 Are psychotic symptoms linked to an overweighting of prior knowledge or of sensory information: Is there a consensus? Symposium, 2023. SIRS, Toronto, Canada.

2022 Computational modeling and non-invasive brain stimulation reveal an active role of inferior frontal cortex in resolving sensory ambiguity. Symposium, 2022. European Conference on Visual Perception, Nijmegen, Netherlands.

2021 Using visual illusions to understand the role of prefrontal cortex in conscious experience. Talk, 2021. NeuroSpin Conference.

2021 Inferior frontal cortex as a potential target for non-invasive brain stimulation in the treatment of hallucinations. Symposium, 2021. DGPPN Annual Congress, Berlin, Germany.

2019 A predictive-coding account of altered perceptual inference in schizophrenia. Symposium, 2019. European Conference on Schizophrenia Research, Berlin, Germany.

2016 Hierarchical predictions for perceptual decisions. Invited Talk, 2016. International Workshop on Schizophrenia and Predictive Coding, Marstrand, Sweden.

2015 Perceptual decisions in volatile environments. Invited Talk, 2015. Highlands Meeting on Schizophrenia and Predictive Coding, Glencoe, Scotland.

Software

2025 **Veith Weilnhammer**. P2P Human Authenticator. https://pixelblot.ai, May 2025.

Individual Research Support

Ongoing

2025–present **Adversarial attacks on the human visual system**, Principle Investigator, Brain & Behavior Research Foundation, €38,000.

Completed

2023–present **Hallucinations in biological and artificial neural networks.**, Fellow, Leopoldina - National Academy of Sciences, €100,800.

2019–2022 **The effect of prefrontal lesions on conscious experience**, Clinician Scientist Program, Berlin Institute of Health, 0.5 FTE.

2017–2018 **The influence of prior knowledge on perception in schizophrenia**, Junior Clinician Scientist Program, Berlin Institute of Health, 0.2 FTE.

2013 **Dynamic causal modeling of intracranial EEG**, Investigator, Minerva Foundation, Max Planck Society, €5,200.

Teaching

2021 - 2022 **Seminar**: Cognitive Functions of the Frontal Cortex

2018 - 2022 **Lecture**: Computational Models of Schizophrenia

2018 - 2022 **Online lecture**: Schizophrenia as a Model Disorder

2016 - 2020 **Seminar**: Problem-Based Learning

2015 - 2022 **Bedside Teaching**: Biopsychosocial History and Psychopathology, mood disorders, adjustment disorders, psychotic disorders, cognitive disorders, liaison psychiatry

2015 - 2017 **Seminar**: Mental Representations

Higher Education Teaching Certifications

2022 Online teaching

2015 Problem-based learning

Mentorship

2023–present **Supervision of undergraduate research project**, Jasmine Lopez, University of California, Berkeley.

2020–present **Co-supervision of MD thesis**, Katrin Reichenbach, Charité, Berlin.

2019 **Co-supervision of Master thesis**, Deniz Yilmaz, Berlin School of Mind and Brain, Berlin.

2019 **Supervision of Master thesis**, Meera Chikermane, NeuroCure, Berlin.

2018–2022 **Co-supervision of PhD thesis**, Anna-Lena Eckert, Berlin School of Mind and Brain.

2018–2019 **Co-supervision of Master thesis**, Drew Cooper, NeuroCure, Berlin.

2018–2019 **Co-supervision of Master thesis**, Lukas Röd, Berlin School of Mind and Brain.

2017–present **Co-supervision of postdoctoral research project**, Merve Fritsch, Charité, Berlin.

Memberships

2024–present **Association for the Scientific Study of Consciousness**.

2015–present **Medical Association**, Berlin, Germany.

Academic Services

Reviews PLOS Computational Biology, Journal of Neuroscience, Neuroscience of Consciousness, Schizophrenia Bulletin, Journal of Vision, Trends in Cognitive Sciences, Communications Psychology