DR. LAURA-ISABELLE KLATT

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CONTACT

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RESEARCH

My research focuses on auditory selective (spatial) attention, working memory, and multisensory processing. In addition to classical ERP analysis, I apply time-frequency analysis, multivariate pattern analysis and diffusion modeling to understand the neural dynamics underlying selective attention, working memory and their interaction. I am particularly interested in the functional role of alpha-band oscillations.

EDUCATION

2016 - 2020	*PhD in Neuroscience, summa cum laude* International Graduate School of Neuroscience (IGSN) Ruhr Universität Bochum Dissertation: Attentional Orienting in Perceptual And Mnemonic Space: Investigating Electrophysiological Correlates of Selective Auditory Attention (Supervisors: Prof. Dr. Edmund Wascher, Prof. Dr. Martin Tegenthoff; External referee: Dr. Clayton Hickey)
2014 - 2016	*Master of Science in Clinical Psychology, Rehabilitation- and Neuroscience (GPA: 1.1)* Albert-Ludwigs-Universität Freiburg Thesis: „Does psychological flexibility mediate the effectiveness of an internet-based Acceptance and Commitment Therapy for chronic pain? An investigation of change processes." (Supervisors: Prof. Dr. Dr. Bengel, Dr. Jiaxi Lin)
2011 - 2014	*Bachelor of Science in Psychology (GPA 1.2)* Major in Cognitive Neuroscience Ruhr Universität Bochum

Thesis: „Crossmodale Plastizität: Der Einfluss eines visuellen Trainings auf die taktile Orientierungsdiskrimination." (Supervisors: PD Dr. Hubert Dinse, Prof. Dr. Boris Suchan)

EMPLOYMENT

Since 2020	Postdoctoral researcher at Leibniz Research Centre for Working Environment and Human Factors, Department of Ergonomics (Head: Prof. Dr. Edmund Wascher)
2016 – 2020	PhD candidate at Leibniz Research Centre for Working Environment and Human Factors, Department of Ergonomics (Head: Prof. Dr. Edmund Wascher)
2015 – 2016	Student research assistant at the Department for Rehabilitation Psychology and Psychotherapy, Albert-Ludwigs-Universität, Freiburg (Research Group "Internet-based Interventions", Head: Prof. Dr. Bengel)

PEER-REVIEWED PUBLICATIONS

Klatt L I, Getzmann S, Begau A, & Schneider D (2020). A dual mechanism underlying retroactive shifts of auditory spatial attention: dissociating target-and distractor-related modulations of alpha lateralization. *Scientific Reports*, 10, 13860.

Getzmann S, **Klatt L I**, Schneider, D, Begau A, & Wascher E (2020). EEG correlates of spatial shifts of attention in a dynamic multi-talker speech perception scenario in younger and older adults. *Hearing Research*, 398, 108077.

Klatt L I, Schneider D, Schubert A, Hanenberg C, Lewald J, Wascher E, & Getzmann S. (2020). Unraveling the relation between EEG-correlates of attentional orienting and sound localization performance: a diffusion model approach. *Journal of Cognitive Neuroscience*, 32, 5, 945-962.

Klatt L I, Getzmann S, Wascher E, Schneider D (2018). The contribution of selective spatial attention to sound detection and sound localization: Evidence from event-related potentials and lateralized alpha oscillations. *Biological Psychology*, 138, 133-145.

Klatt L I, Getzmann S, Wascher E, Schneider D (2018). Searching for auditory targets in external space and in working memory: Electrophysiological mechanisms underlying perceptual and retroactive spatial attention. *Behavioral Brain Research*, 353, 98-107.

Göddertz, A, **Klatt L I**, Mertes C, Schneider D (2018). Retroactive Attentional Shifts Predict Performance in a Working Memory Task: Evidence by Lateralized EEG Patterns. *Frontiers in Human Neuroscience*, 12, 428.

Lin J, **Klatt L I**, McCracken L, Baumeister H (2018). Psychological flexibility mediates the effect of an online-based acceptance and commitment therapy for chronic pain: An investigation of change processes. *Pain*, 159, 663-672.

PREPRINTS AND ARTICLES IN PREPARATION

Schneider D, Herbst S, **Klatt L I**, Wöstmann M. (under review). Target Enhancement or Distractor Suppression? Functionally Distinct Alpha Oscillators form the Basis of Attention (under review). Preprint doi: 10.31234/osf.io/df23g

Begau A, **Klatt L I**, Wascher E, Schneider D, Getzmann S. (under review). Congruent lip movements facilitate speech processing in a dynamic audiovisual multi-talker scenario: An ERP study with older and younger adults (under review). Preprint doi: https://doi.org/10.1101/2020.11.06.370841

Klatt L I, Getzmann S, Schneider D. (under review). Attentional Modulations of Alpha Power Are Sensitive to the Task-relevance of Auditory Spatial Information. Preprint doi: https://doi.org/10.1101/2021.02.12.430942

CONFERENCES: POSTER PRESENTATIONS (FIRST AUTHOR ONLY)

Klatt L I, Getzmann S, Schneider D (2020). Attentional Modulations of Posterior Alpha Power in Sound Localization: The Role of Spatial Information. Presented at Expectation, Perception & Cognition, Virtual Workshop, 01.10 - 02.10.2020.

Klatt L I, Getzmann S, Schneider D (2020). The Timing of Attentional Alpha Power Modulations Predicts Sound Localization Performance in Complex Auditory Scenes. Presented at Cognitive Neuroscience Society 2020 Virtual Meeting, 02.05. - 05.05.2020.

Klatt L I, Getzmann S, Wascher E, Schneider D (2018). Selective processing of auditory spatial information: EEG correlates of spatial attention in perception and working memory. Presented at EPOS/Helmholtz Winter School: Symposium on Inhibition, Amsterdam, Netherlands, 05.12. – 07.12.2018.

Klatt L I, Getzmann S, Wascher E, Schneider D (2018). Neural correlates of perceptual and retroactive spatial attention in feature-based and spatially specific auditory search: insights from lateralized alpha band oscillations. Presented at 44. Tagung Psychologie und Gehirn, Gießen, Germany, 31.05. - 02.06.2018.

Klatt L I, Getzmann S, Schneider D (2018). Shifting auditory attention in perceptual and mnemonic space: an investigation of event-related EEG parameters in a sound localization and sound detection paradigm. Presented at 25th Annual Meeting Cognitive Neuroscience Society (CNS), Boston, Massachusetts, 24.03. - 27.03.2018.

Klatt, L I, Getzmann S, Schneider D (2017). Sound localization versus detection within auditory working memory and perception: evidence from lateralized alpha oscillations. Presented at First Munich Symposium on Visual Working Memory, Munich, Germany, 27. - 29.07.2017.

Klatt L I, Getzmann S, Schneider D, Wascher E (2017). Electrophysiological correlates of attentional selection within auditory working memory and perception. Presented at 43. Tagung Psychologie und Gehirn, Trier, Germany, 15.06. - 17.06.2017.

CONFERENCES: TALKS (FIRST AUTHOR ONLY)

Klatt L I, Getzmann S, Schneider D (2021). Attentional Modulations of Alpha Power Are Sensitive to the Task-relevance of Auditory Spatial Information. Presented at Tagung experimentell arbeitender Psychologen (TeaP) Virtual Conference,14.03.-17.03.2021.

Klatt L I, Getzmann S, Begau A, Schneider D (2020). Distractor Inhibition or target prioritization? Unraveling the mechanisms underlying the orienting of attention within working memory. Presented at Virtual Working Memory Symposium (VWMS), Hosts: Edward Ester (Florida Atlantic University) & Jarrod Lewis-Peacock (University of Texas at Austin), 01.06. - 04.06.2020.

Klatt L I, Getzmann S, Begau A, Schneider D (2019). Attending to Auditory Working Memory Representations: Target Facilitation or Distractor Suppression? Presented at the 59th Society for Psychophysiological Research (SPR) Annual Meeting, Washington DC., USA, 25.09. – 29.09.2019.

Klatt L I, Getzmann S, Begau A, Schneider D (2019). Attentional orienting within auditory working memory: Target enhancement or distractor inhibition? Presented at 45. Jahrestagung Psychologie und Gehirn (PuG), Dresden, Germany, 20.06.-22.06.2019.

ATTENDED WORKSHOPS

Experiment design with OpenSesame and EEG/MEG data analysis with Python, taught by Dr. Jona Sassenhagen & dr. S. Sebastiaan Mathot (14.06. - 15.06.2018, Universiteit van Amsterdam)

Theory and Practice: Multivariate pattern analyses (MVPA) in EEG/MEG: Basics and Applicaton using the ADAM toolbox, taught by Johannes Fahrenfort, Ph.D. (15.10. – 16.10.2018, Universiteit van Amsterdam)

SPM 2018: 21. Introduction to functional MR imaging: SPM programming, Batchmode, VBM, resting state analysis, DTI (04.09. – 07.09.2018, Universitätsklinikum Hamburg Eppendorf)

Analyzing Neural Time Series Data: Extensive course on the underlying basics of neural time series analysis, including time-frequency and synchronization analyses), taught by Dr. Mike X Cohen (05.08. – 09.08.2019, Radboud Summer School, Nijmegen)

AD-HOC REVIEWER

In alphabetic order

Frontiers Human Neuroscience
International Journal of Psychophysiology
Memory & Cognition
Neuropsychologia
Psychophysiology
Scientific Reports

SCIENTIFIC OUTREACH

08/2020	Book a Scientist, Leibniz Gemeinschaft
04/2019	Student Field Trip to Leibniz Research Centre for Working Environment and Human Factors as part of their psychology class
06/2018	Student Field Trip to Leibniz Research Centre for Working Environment and Human Factors as part of their psychology class

TEACHING EXPERIENCE

Summer Term 2020, EEG practical and seminar (Introductory EEG class for Cognitive Science Master students)

Summer Term 2019, EEG practical and seminar (Introductory EEG class for Cognitive Science Master students)

RESEARCH MENTORSHIP

Students under my direct supervision

Kimberly Freytag	08/2018 – 08/2019	internship and bachelor thesis
Arslan Gabdulkhakov	01/2021 – current	master thesis

OTHER INTERESTS

What I do besides science

Voluntary work for Experiment eV.

Since I was an exchange student in the United States of America (2008/2009), I have been volunteering for my former exchange organization. This includes conducting individual interviews with applicants for their exchange programs, organizing and conducting group interviews for scholarships such as the Congress-Bundestag Youth Exchange as well as the recruitment and the support of local host families. This has taught me strong organizational and leadership skills.

Voluntary work for Malteser Hospice Services

Since 2016 I serve as a voluntary member of the ambulatory Malteser Hospice Service. Our goal is to provide psychological and practical support to both people suffering from a terminally-ill disease as well as to their families. This continues to be a humbling experience that reminds me of what really matters in life.