

## Leon Kroczek, Dr. rer. nat., Dipl.-Psych.

Universitätsstraße 31, 93053 Regensburg

Tel: + 49 (0)941/943-6044

Mail: leon.kroczek@ur.de

Date of Birth: 22.03.1988

Place of Birth: Nürnberg, Germany

1 daughter (\*2017), 2 sons (\*2021)



### Current Position

**Since 2021** Akademischer Rat, Department of Clinical Psychology and Psychotherapy, University of Regensburg, Germany; Prof. Dr. Mühlberger

### Academic Education

**2019** PhD in Psychology, Max Planck Institute for Human Cognitive and Brain Sciences/Leipzig University, „The impact of speaker information on language processing“ (*summa cum laude*)

**2008 – 2013** Diploma (MSc equivalent), Psychology, University of Regensburg, Germany

**2007** Abitur (A-Level equivalent)

### Awards

**2022** XR Research Awards – 1<sup>st</sup> Prize

**2020** Otto Hahn medal by the Max Planck Society for outstanding scientific achievements in connection with the doctorate

## **Academic Experience**

- 2018 – 2020** PostDoc, Department of Clinical Psychology and Psychotherapy, University of Regensburg, Germany, Prof. Dr. Mühlberger
- 2013 – 2018** PhD, Department of Neuropsychology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, Supervisors: Prof. Dr. Friederici and Dr. Thomas Gunter
- 2012 – 2013** Undergraduate research assistant, Department of Neuropsychology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany
- 2012** Intern, fMRI group Bergen, Bergen, Norway, Supervisors: Prof. Dr. Hugdahl. Dr. Westerhausen
- 2011 – 2012** Undergraduate research assistant, Department of Cognitive Psychology, University of Regensburg, Prof. Dr. Bäuml
- 2011** Intern, Department of Neuropsychology, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany, Prof. Dr. Friederici

## **Acquired Funding**

- 2023** DFG project (Sachbeihilfe) "Influence of audio rendering in virtual environments on realism, presence and socio-cognitive processing (2<sup>nd</sup> funding period)" together with Prof. Dr. Matthias Blau, Prof. Dr. Andreas Mühlberger, Prof. Dr. Steven van de Par (Nr. 444832396; Amount 284.304 €)
- 2022** XR Research Award for my project "The impact of social reciprocity on attitudes and behavior in virtual social interactions" (Amount: 20.000€ comprising financial and technical support)
- 2019** UR Fellows program to foster interdisciplinary research projects (Amount: 10.000 €; With Prof. Dr. Angelika Lingnau, Prof. Dr. Christian Wolff and Prof. Dr. Andreas Mühlberger)

## **Academic Self-Government**

- Since 2022** Member of the ethics committee at Regensburg University
- 2022 - 2023** PostDoc Representative at the Center for Graduate & Postgraduate Researchers at Regensburg University
- Since 2018** Member of the committee regarding applicant selection of the MSc Psychology program at Regensburg University

## **Reviewing**

- Since 2023** Review Editor at *Frontiers in Psychology Emotion Science*  
Review Editor at *Frontiers in Behavioral Neuroscience*
- Ad-hoc** *Psychophysiology, Cerebral Cortex, Biological Psychology, Behavior Research and Therapy, British Journal of Psychology, Collabra: Psychology, Computers in Human Behavior, International Journal of Human-Computer Interaction, F1000, Sensors, Klinische Psychologie und Psychotherapie, Journal of Environmental Psychology, Frontiers in Human Neuroscience, Frontiers in Psychology, PLOS One, Language, Cognition & Neuroscience, Brain Research*

## **Memberships**

Society of Affective Neuroscience (SANS), German Psychological Society (DGPS), DGPS section "Biological Psychology and Neuropsychology", Interest Group Open and Reproducible Research (IGOR)

## Publications

### Peer-reviewed

- Schröder, B., KroczeK, A., **KroczeK, L.O.H.**, EhliS, A. C., Batra, A., & Mühlberger, A. (2024). Cigarette craving in virtual reality cue exposure in abstainers and relapsed smokers. *Scientific Reports*, 14(1), 7538. <https://doi.org/10.1038/s41598-024-58168-7>
- Schroen, J., Gunter, T.C., Nummsen, O., **KroczeK, L. O. H.**, Hartwigsen, G., & Friederici, A.D. (2023). Causal Evidence for a Coordinated Temporal Interplay within the Language Network. *Proceedings of the National Academy of Sciences*. 120 (47), e2306279120. <https://doi.org/10.1073/pnas.2306279120>
- KroczeK, L. O. H.**, & Mühlberger, A. (2023). Public speaking training in front of a supportive audience in Virtual Reality improves performance in real-life. *Scientific Reports*, 13, 13968. <https://doi.org/10.1038/s41598-023-41155-9>
- KroczeK, L. O. H.**, & Mühlberger, A. (2023). Time to Smile: How Onset Asynchronies Between Reciprocal Facial Expressions Influence the Experience of Responsiveness of a Virtual Agent. *Journal of Nonverbal Behavior*, 1-16. <https://doi.org/10.1007/s10919-023-00430-z>
- KroczeK, L. O. H.**, & Mühlberger, A. (2022). Returning a smile: Initiating a social interaction with a facial emotional expression influences the evaluation of the expression received in return. *Biological Psychology*, <https://doi.org/10.1016/j.biopsycho.2022.108453>
- KroczeK, L.O.H.**, Böhme, S. & Mühlberger, A. (2022). Face masks reduce interpersonal distance in virtual reality. *Scientific Reports*, 12, 2213. <https://doi.org/10.1038/s41598-022-06086-x>
- Pfaller M., **KroczeK L.O.H.**, Lange B., Fülöp R., Müller M. and Mühlberger A. (2021) Social Presence as a Moderator of the Effect of Agent Behavior on Emotional Experience in Social Interactions in Virtual Reality. *Front. Virtual Real.* 2:741138. <https://doi.org/10.3389/frvir.2021.741138>
- KroczeK, L.O.H.**, Lingnau, A., Schwind, V., Wolff, C. & Mühlberger, A. (2021). Angry facial expressions bias towards aversive actions. *PLOS One*. 16 (9): e0256912. <https://doi.org/10.1371/journal.pone.0256912>
- KroczeK, L.O.H.**, & Gunter, T.C. (2021). The time course of speaker-specific language processing. *Cortex*, 141, 311-321. <https://doi.org/10.1016/j.cortex.2021.04.017>
- Biehl, S.C., Schmidmeier, M., Wechsler, T. F., **KroczeK, L.O.H.**, Mühlberger, A. (2021). Widespread recommendations can change our habits of hand-washing and

physical distance during the Covid-19 pandemic. *Clinical Psychology in Europe*, 3, 1, e3061. <https://doi.org/10.32872/cpe.3061>

**Kroczek, L.O.H.**, Pfaller, M., Lange, B., Müller, M. & Mühlberger, A. (2020). Interpersonal distance during real-time social interaction: Insights from subjective experience, behavior, and physiology. *Frontiers in psychiatry*, 11, 561. <https://doi.org/10.3389/fpsy.2020.00561>

**Kroczek, L.O.H.**, & Gunter, T.C. (2020). Distinct neural networks relate to common and speaker-specific language priors. *Cerebral Cortex Communications*, 1, 1-11. <https://doi.org/10.1093/texcom/tgaa021>

**Kroczek, L.O.H.**, Gunter, T.C., Rysop, A.U., Friederici, A.D., & Hartwigsen, G. (2019). Contributions of left frontal and temporal cortex to sentence comprehension: Evidence from simultaneous TMS-EEG. *Cortex*, 115, 86-98. <https://doi.org/10.1016/j.cortex.2019.01.010>

**Kroczek, L.O.H.** & Gunter, T.C. (2017). Communicative predictions can overrule linguistic priors. *Scientific Reports*, 7, 17581. <https://doi.org/10.1038/s41598-017-17907-9>

### *Preprints*

**Kroczek, L. O. H.**, Roßkopf, S., Stärz, F., Blau, M., Van de Par, S., & Mühlberger, A. (2023). The influence of affective voice on sound distance perception. *PsyArXiv*, <https://doi.org/10.31234/osf.io/qdw9p>

**Kroczek, L. O. H.**, Roßkopf, S., Stärz, F., Ruider, A., Blau, M., Van de Par, S., & Mühlberger, A. (2023). A room of one's own: A high-accuracy calibration procedure to align spatial dimensions between a virtual and a real room. *PsyArXiv*, <https://doi.org/10.31234/osf.io/erb49>

Paul, K., Angus, D. J., Bublatzky, F., Dieterich, R., Endrass, T., Greenwood, L., ..., **Kroczek, L. O. H.**, ... Pourtois, G. (2022). Revisiting the electrophysiological correlates of valence and expectancy in reward processing – A Multi-lab replication. *PsyArXiv*, <https://doi.org/10.31234/osf.io/4uy2c>

**Kroczek, L. O. H.**, Lingnau, A., Schwind, V., Wolff, C., & Mühlberger, A. (2022). Observers predict actions from facial emotional expressions during real-time social interactions. *PsyArXiv*, <https://doi.org/10.31234/osf.io/fzcau>

## *Conference Proceedings*

- Roßkopf, S., **Kroczek, L. O. H.**, Stärz, F., Blau, M., Van de Par, S., & Mühlberger, A. (2023). Comparable Sound Source Localization Of Plausible Auralizations And Real Sound Sources Evaluated In A Naturalistic Eye-Tracking Task In Virtual Reality. Forum Acusticum 2023, Turin,
- Stärz, F., **Kroczek, L. O. H.**, Roßkopf, S., Mühlberger, A., Van de Par, S., & Blau, M. (2023). Comparing Room Acoustical Ratings In An Interactive Virtual Environment To Those In The Real Room. Forum Acusticum 2023, Turin,
- Roßkopf, S., **Kroczek, L.O.H.**, Stärz, F., Blau, M., van de Par, S., & Mühlberger, A. (2023). The Effect of Audio-Visual Room Divergence on the Localization of Real Sound Sources in Virtual Reality. Fortschritte der Akustik - DAGA 2023, Hamburg, 1431–1434.
- Stärz, F., **Kroczek, L.O.H.**, Roßkopf, S., Mühlberger, A., van de Par, S., & Blau, M. (2023). Mounting extra-aural headphones to a head-mounted display using a 3D-printed support. Fortschritte der Akustik - DAGA 2023, Hamburg, 1636–1639.
- Stärz, F., **Kroczek, L.O.H.**, Roszkopf, S., Mühlberger, A., van de Par, S., & Blau, M. (2022). Perceptual comparison between the real and the auralized room when being presented with congruent visual stimuli via a head-mounted display. Proc. 24th Int. Congr. on Acoustics, Gyeongju (Korea).
- Kroczek, L. O. H.**, Roszkopf, S., Stärz, F., Blau, M., van de Par, S., & Mühlberger, A. (2022). The influence of affective voice on sound distance perception. Proceedings of the 48th Annual Conference on Acoustics DAGA 2022, Stuttgart, Germany.

## *Theses*

- Kroczek, L. O. H. (2019). *The impact of speaker information on language processing*. Dissertation, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig.
- Kroczek, L. O. H. (2013): *May I get a beat with that? Neural correlates of gesture-syntax interaction*. Diploma thesis, Regensburg university, Regensburg.

## *Invited Talks*

- Kroczek, L.O.H. (2023). *When a Smile Deceives: Conflict Adaptation in Social Interactions*. Research Colloquium at the Chair for General and Applied Psychology at Regensburg University, Regensburg, Germany.

Kroczek, L.O.H. (2023). *From reality into the lab (and back again): Mechanisms of social interaction in Virtual Reality*. Institute Colloquium of the psychological institute at Kiel University, Kiel, Germany.

Kroczek, L.O.H. (2021). *Interpersonal Distance in Virtual Reality, Online Workshop*. Psychosoziales Lagebild der Bevölkerung während der Corona-Pandemie (LaBeCo), Berlin, Germany.

Kroczek, L.O.H. (2021). *Virtuelle Realität bei sozialer Angst*. Klinik Sonnenhalde AG, Psychiatrie und Psychotherapie, Riehen, Swiss Confederation.

### *Talks*

Kroczek, L.O.H. (2024). *When facial expressions and actions do not fit: Conflict adaptation in social interactions*. Conference of Experimental Psychologists, Regensburg, Germany.

Kroczek, L.O.H. (2023). *Investigating Reciprocity in Face-to-Face Dyadic Interaction in Virtual Reality*. XR-Meeting Würzburg, Würzburg, Germany.

Kroczek, L.O.H. (2022). *How reciprocity shapes social interactions: Insights from Virtual Reality*. Tagung Psychologie und Gehirn, Freiburg, Germany.

Kroczek, L.O.H. (2022). *Social Context Conditioning in Virtual Reality*. European Meeting of Human Fear Conditioning, Nijmegen (Virtual), Netherlands.

Kroczek, L.O.H. (2021). *How facial emotions affect action understanding during social interactions: Insights from action recognition and experience in Virtual Reality*. Tagung Psychologie und Gehirn, Tübingen (Virtual), Germany.

Kroczek, L.O.H. (2019). *Returning a smile: The impact of social interaction on the processing of facial emotions*. Hengstenberg Symposium on Social Interaction, Heidelberg, Germany.

Kroczek, L.O.H. (2014): *Neural correlates of gesture-syntax interaction*. 12th Biannual Conference of the German Cognitive Science Society, Tübingen, Germany.

### *Poster (selected)*

Kroczek, L.O.H., & Mühlberger, A. (2023). *Social interaction modulates neural responses to facial emotional expressions*. Tagung Psychologie und Gehirn, Tübingen, Germany.

Kroczek, L. O. H., Lingnau, A., Schwind, V., Wolff, C., & Mühlberger, A. (2022). *Observers predict actions from facial emotional expressions during real-time social interactions*.

Minerva-Gentner Symposium 'Perception, Recognition and Control of Goal-Directed Actions', Regensburg, Germany.

Kroczek, L. O. H., Rosskopf, S., Stärz, F., Blau, M., van de Par, S., & Mühlberger, A. (2022). The influence of affective voice on sound distance perception. 48th Annual Conference on Acoustics DAGA 2022, Stuttgart, Germany.

Kroczek, L.O.H., & Mühlberger, A. (2019). *Returning a smile: The impact of social interaction on the processing of facial emotions*. 59<sup>th</sup> Annual Meeting of the Society for Psychophysiological Research, Washington D.C., USA.

Kroczek, L.O.H., & Mühlberger, A. (2019). *Returning a smile: The impact of social interaction on the processing of facial emotions*. Tagung Psychologie und Gehirn, Dresden, Deutschland.

Kroczek, L.O.H., Friederici, A.D., & Gunter, T.C. (2017). *Investigating the neural mechanisms of syntactic expectations*. 9<sup>th</sup> Annual Meeting for the Neurobiology of Language, Baltimore, USA.

Kroczek, L.O.H., & Gunter, T.C. (2017). *Dynamic formation of syntactic predictions based on speaker identity*. Tagung experimentell arbeitender Psychologen (TeaP), Dresden, Deutschland.

Kroczek, L.O.H., Friederici, A. D., & Gunter, T.C. (2016). *Expectation effects on the processing of syntactic structure*. 8<sup>th</sup> Annual Meeting for the Neurobiology of Language, London, GB.

Kroczek, L.O.H., & Gunter, T.C. (2015). *Expectation effects in syntactic processing – Evidence from ambiguous sentence structures*. 45<sup>th</sup> Annual Meeting of the Society for Neuroscience, Chicago, IL, USA.

Kroczek, L.O.H., & Gunter, T.C. (2014). *Is syntactic processing modulated by expectation effects?*. 4<sup>th</sup> IMPRS NeuroCom Summer School, London, GB.



## Teaching

- 2023** Project seminar experimental psychology (B.Sc., Regensburg University)  
Mental disorders (B.Sc., Regensburg University)
- 2022/23** Mental disorders: Biomarkers (B.Sc., Regensburg University)  
Mental disorders: Experimental paradigms (B.Sc., Regensburg University)
- 2022** Affective disorders (B.Sc., Regensburg University)  
Autism spectrum disorders (M.Sc, Regensburg University)
- 2021/22** Anxiety disorders (B.Sc., Regensburg University)  
Psychosis (B.Sc., Regensburg University)
- 2020/21** Emotion regulation and mental health (M.Sc, Regensburg University)  
New technologies in psychotherapy (B.Sc., Regensburg University)
- 2020** Autism spectrum disorders (M.Sc, Regensburg University)  
Research colloquium (B.Sc., M.Sc., Regensburg University)
- 2019** Practical research seminar (M.Sc, Regensburg University)
- 2018/19** Psychological, neural and therapeutic aspects of anxiety disorders (B.Sc., Regensburg University)  
Project seminar experimental psychology (B.Sc., Regensburg University)
- 2016/17** Psychological experiments: A practical course (B.Sc., Leipzig University)