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Biological Psychology and Neuroergonomics
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Martin Riemer

Education

02/2013	Ph.D. in Psychology, University of Mannheim (summa cum laude)
02/2009	Diploma in Psychology, University of Mannheim
2003-2009	Courses in Psychology, University of Mannheim
2002-2003	Courses in Physics, University of Heidelberg

Employments and Work Experiences

since 2021	Principal Investigator (Research Project: Time-space interference) at the Department of Biological Psychology and Neuroergonomics, Technical University Berlin
	Ethical Review Board member at the Insitute of Psychology and Ergonomics
2022-2023	Interim Professor at the Department of Cognitive Psychology and Ergonomics, Technical University Berlin
2018-2021	Postdoctoral Researcher at the Department of Experimental Psychology, University of Groningen, Netherlands
2014-2018	Postdoctoral Researcher at the German Center for Neurodegenerative Diseases (DZNE), Magdeburg
2008-2013	Research Assistant at the Otto-Selz-Institute (Laboratory for Clinical Psychophysiology), University of Mannheim
2006-2007	Internship at the Brain Research Laboratory, University of Vienna, Austria. *Project: Subliminal release of the feedback-related negativity (FRN)*

Funding ID and Awards

2021-2025	Research Grant for project '*Age-related changes in time-space interferences and their relation to dysfunctions of the medial temporal lobe*'. Funding body: German Research Foundation (DFG)
2019-2021	Research Grant for project '*Time perception in real-life scenarios and its value for clinical diagnostics of early-stage dementia*'. Funding body: German Research Foundation (DFG)
2017-2020	Research Grant for project '*Resolving complex decisions via planning and associative value generalisation*' (with PD Dr. Gerhard Jocham). Funding body: Center for Behavioral Brain Sciences (CBBS)
2016-2018	Research Grant for project '*AGETIME*'. Funding body: Europäische Sozialfonds (ESF)
2014	Travel Grant for the International Conference on Timing & Time Perception in Korfu, Greece. Funding body: GlaxoSmithKline Stiftung (GSK)
2011-2013	Doctoral scholarship (LGFG) from the University of Mannheim
2012	Baden-Württemberg-Certificate for University Didactics
2009	Otto-Selz-Award of the Faculty of Social Sciences (University of Mannheim)

Teaching and Supervisions

2022-2023 Representation of the department of Cognitive Psychology and Ergonomics at the TU Berlin (9 SWS, including courses on "*Kognitive Ergonomie und Usability Testing*", "*Methoden des Usability Engineering und Testing*", "*Special Topics in Cognitive Psychology*")

since 2014 Supervision of 9 PhD, 14 MSc and 8 BSc theses at the Universities of Magdeburg and Groningen, and at the TU Berlin

2010-2021 Various MSc and BSc courses at the Universities of Mannheim, Magdeburg and Groningen, including courses on "*Somatoforme und stressbedingte Störungen*", "*Körperwahrnehmung und Stress*", "*Klinische Diagnostik*", "*Affektive Störungen*", "*Klinische Psychologie*", "*Methods in Experimental Psychology and Psychophysics*", "*Spatial Cognition*"

Organisation of Conferences, Workshops and Symposia

2025 Space-time interference in behavior and neuronal processing. *Symposium at the 4th Conference of the Timing Research Forum (TRF4) in Tokyo, Japan*

2024 Virtual Reality and the Perception of Time. *Symposium at the TeaP in Regensburg, Germany*

2023 Temporal and Multisensory Processing in Virtual Reality. *Symposium at the 3rd Conference of the Timing Research Forum (TRF3) in Lisboa, Portugal*

Time and Timing in Human-Computer Interaction. *Workshop at the Mensch und Computer (MuC) conference in Rapperswil, Switzerland* (DOI: 10.18420/muc2023-mci-ws05-106)

2018 2nd Interdisciplinary Symposium on Spatial Cognition in Aging and Neurodegeneration (iSCAN). *Research conference held at the DZNE Magdeburg, Germany*

2017 Interrelations between the Representation of Time and Space. *Symposium at the 1st Conference of the Timing Research Forum (TRF) in Strasbourg, France*

2015 The Body in Space. *Symposium at the IV International Conference on Spatial Cognition (ICSC) in Rome, Italy*

Invited Talks

2026 Between time and space: What we can learn from cross-dimensional interference. *Keynote at 2nd TRF Summer School "Sensing Time", University of Padova, Italy*

2025 Über die räumliche Repräsentation der Zeit. *Tagung der AG Philosophie & Psychologie, University of Cologne, Germany*

Temporal processing in healthy and pathological aging. *Indo-German Workshop "Aging, Workplace and Mental Health", Central Institute of Mental Health, Mannheim, Germany*

2023 Underlying premises for using virtual reality in time perception research. *Annual Student Symposium "Keeping Track: Time perception and numerosity in brains and machines", Sainsbury Wellcome Centre, London, UK*

2022 Time-space interferences in virtual reality. *Vernetzungs-Workshop "Zeitforschung und Mensch-Maschine-Interaktion", University of Regensburg, Germany*

2019 Age-related changes in the memory for temporal intervals. *Symposium "Time and the Brain" in Bochum, Germany*

2018 Neural representations of time and space. *University of Tübingen, Germany*

2015 A 'view from nowhen' on negative errors in time reproduction. *Research Centre for Computational Neuroscience and Cognitive Robotics (CNCR), University of Birmingham, UK*

Memberships

Deutscher Hochschulverband (**DHV**); Timing Research Forum (**TRF**); Society for Neuroscience (**SfN**); German Society for Psychologists (**DGPs**); International Society for Psychophysics (**ISP**); Center for Behavioral Brain Sciences (**CBBS**); Bernstein Center for Computational Neuroscience (**BCCN**)

Review Activities

Adv Cogn Psychol, Atten Percept Psychophys, Behav Brain Res, Behav Res Methods, Cognition, Cogn Res, Conscious Cogn, Curr Biol, Exp Brain Res, Front Psychol, In Mind, J Cogn, J Cogn Neurosci, J Exp Psychol, J Neurosci, J Vis, NeuroImage, PLOS ONE, Psychol Neurosci, Psychol Res, Q J Exp Psychol, Scand J Psychol, Sci Rep, Timing Time Percept, Trends Cogn Sci, a.o.

Publications

Peer-reviewed journal articles

Riemer, M., Bratzke, D., & Michael, L. (2026). Using speed to think about space and time. *Cogn Psychol, 164:* 101797. https://doi.org/10.1016/j.cogpsych.2026.101797

Riemer, M., Valletta, E., Halbhuber, D., & Bogon, J. (2026). Anticipating physical processes in VR: Environment type and scale alter temporal expectations. *Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems*: 1-14. https://doi.org/10.1145/3772318.3791767

Riemer, M., & Michael, L. (2026). Attraction versus repulsion: Are central tendency effects and duration adaptation effects based on an altered perception of time? *Acta Psychol, 264:* 106585. https://doi.org/10.1016/j.actpsy.2026.106585

Jagorska, C., Steinecker, I., & **Riemer, M.** (2026). Interferences between time and space in advanced age. *Mem Cogn, 54*(2): 689-699. https://doi.org/10.3758/s13421-025-01775-0

Bublatzky, F., & **Riemer, M.** (2025). Transient inhibition of the posterior parietal cortex affects action-related but not action-unrelated visual processing during path integration. *J Cogn Neurosci, 37*(12): 2371-2382. https://doi.org/10.1162/jocn.a.63

Bogon, J., Jagorska, C., Heinz, E. M., & **Riemer, M.** (2025). Presentation time shapes perceived room size in visual and auditory modalities. *Cogn Research, 10*: 31. https://doi.org/10.1186/s41235-025-00644-3

Riemer, M., & Cai, G. Z. (2024). Space-time interference: The asymmetry we get out is the asymmetry we put in. *Neurosci Biobehav Rev, 167:* 105941. https://doi.org/10.1016/j.neubiorev.2024.105941

Bogon, J., Jagorska, C., Steinecker, I., & **Riemer, M.** (2024). Age-related changes in time perception: Effects of immersive virtual reality and spatial location of stimuli. *Acta Psychol, 249*: 104460. https://doi.org/10.1016/j.actpsy.2024.104460

Riemer, M., Wolbers, T., & van Rijn, H. (2024). Memory traces of duration and location in the right intraparietal sulcus. *NeuroImage, 297*: 120706. https://doi.org/10.1016/j.neuroimage.2024.120706

Jagorska, C., & **Riemer, M.** (2024). The influence of travel time on perceived traveled distance varies by spatiotemporal scale. *Exp Brain Res, 242*: 2023-2031. https://doi.org/10.1007/s00221-024-06880-1

Mioni, G., Wolbers, T., & **Riemer, M.** (2024). Differences between sub-second and supra-second durations for the assessment of timing deficits in amnestic mild cognitive impairment. *Aging Brain, 6*: 100120. https://doi.org/10.1016/j.nbas.2024.100120

Rhodes, D., Bridgewater, T., Ayache, J., & **Riemer, M.** (2024). Rapid calibration to dynamic temporal contexts. *Q J Exp Psychol,* 77(9): 1923-1935. https://doi.org/10.1177/17470218231219507

Bogon, J., Högerl, J., Kocur, M., Wolff, C., Henze, N., & **Riemer, M.** (2024). Validating virtual reality for time perception research: Virtual reality changes expectations about the duration of physical processes, but not the sense of time. *Behav Res Methods, 56*: 4553-4562. https://doi.org/10.3758/s13428-023-02201-6

Riemer, M. (2023). Interval timing in virtual reality: Merits, goals, and premises. *Mensch und Computer 2023 - Workshopband. DOI: 10.18420/muc2023-mci-ws05-433. GI. MCI-WS05: Time and Timing in Human-Computer Interaction. Rapperswil. 3.-6. September 2023*

Bublatzky, F., Allen, P., & **Riemer, M.** (2023). Spatial navigation under threat: Aversive apprehensions improve route retracing in higher versus lower trait anxious individuals. *Front Psychol*, 14: 1166594. https://doi.org/10.3389/fpsyg.2023.1166594

Riemer, M., Achtzehn, J., Kuehn, E., & Wolbers, T. (2022). Cross-dimensional interference between time and distance during spatial navigation is mediated by speed representations in intraparietal sulcus and area hMT+. *NeuroImage, 257*: 119336. https://doi.org/10.1016/j.neuroimage.2022.119336

Riemer, M., Vieweg, P., van Rijn, H., & Wolbers, T. (2022). Reducing the tendency for chronometric counting in duration discrimination tasks. *Atten Percept Psychophys, 84*: 2641-2654. https://doi.org/10.3758/s13414-022-02523-1

Maaß, S. C., Wolbers, T., van Rijn, H., & **Riemer, M.** (2022). Temporal context effects are associated with cognitive status in advanced age. *Psychol Res, 86*: 512-521. https://doi.org/10.1007/s00426-021-01502-9

Riemer, M., Wolbers, T., & van Rijn, H. (2021). Age-related changes in time perception: The impact of naturalistic environments and retrospective judgements on timing performance. *Q J Exp Psychol, 74*(11): 2002-2012. https://doi.org/10.1177/17470218211023362

Riemer, M., & Wolbers, T. (2020). Negative errors in time reproduction tasks. *Psychol Res, 84*: 168-176. https://doi.org/10.1007/s00426-018-0994-7

Stangl, M., Kanitscheider, I., **Riemer, M.**, Fiete, I., & Wolbers, T. (2020). Sources of path integration error in young and aging humans. *Nat Commun, 11*: 2626. https://doi.org/10.1038/s41467-020-15805-9

Stahn, A. C., **Riemer, M.**, Wolbers, T., Werner, A., Brauns, K., Besnard, S., Denise, P., Kühn, S., & Gunga, H.-C. (2020). Spatial updating depends on gravity. *Front Neural Circuits, 14*: 20. https://doi.org/10.3389/fncir.2020.00020

Dordevic, M., Taubert, M., Müller, P., **Riemer, M.**, Kaufmann, J., Hökelmann, A., & Müller, N. G. (2020). Which effects on neuroanatomy and path-integration survive? Results of a randomized controlled study on intensive balance training. *Brain Sci, 10*: 210. https://doi.org/10.3390/brainsci10040210

Riemer, M., Trojan, J., Beauchamp, M., & Fuchs, X. (2019). The rubber hand universe: On the impact of methodological differences in the rubber hand illusion. *Neurosci Biobehav Rev, 104*: 268-280. https://doi.org/10.1016/j.neubiorev.2019.07.008

Riemer, M., Wolbers, T., & Kuehn, E. (2019). Preserved multisensory body representations in advanced age. *Sci Rep, 9*: 2663. https://doi.org/10.1038/s41598-019-39270-7

Bublatzky, F., **Riemer, M.**, & Guerra, P. (2019). Reversing threat to safety: Incongruence of facial emotions and instructed threat modulates conscious perception but not physiological responding. *Front Psychol, 10*: 2091. https://doi.org/10.3389/fpsyg.2019.02091

Maaß, S. C., **Riemer, M.**, Wolbers, T., & van Rijn, H. (2019). Timing deficiencies in amnestic mild cognitive impairment: Disentangling clock and memory processes. *Behav Brain Res, 373*: 112110. https://doi.org/10.1016/j.bbr.2019.112110

Riemer, M., Kubik, V., & Wolbers, T. (2019). The effect of feedback on temporal error monitoring and timing behavior. *Behav Brain Res, 369*: 111929. https://doi.org/10.1016/j.bbr.2019.111929

Merhav, M., **Riemer, M.**, & Wolbers, T. (2019). Spatial updating deficits in human aging are associated with traces of former memory representations. *Neurobiol Aging, 76*: 53-61. https://doi.org/10.1016/j.neurobiolaging.2018.12.010

Vieweg, P., **Riemer, M.**, Berron, D., & Wolbers, T. (2019). Memory Image Completion: Establishing a task to behaviorally assess pattern completion in humans. *Hippocampus, 29*: 340-351. https://doi.org/10.1002/hipo.23030

Riemer, M., Shine, J.P., & Wolbers, T. (2018). On the (a)symmetry between the perception of time and space in large-scale environments. *Hippocampus, 28*: 539-548. https://doi.org/10.1002/hipo.22954

Müller, N. G., **Riemer, M.**, Brandt, L., & Wolbers, T. (2018). Repetitive transcranial magnetic stimulation reveals a causal role of the human precuneus in spatial updating. *Sci Rep, 8*(1): 10171. https://doi.org/10.1038/s41598-018-28487-7

Kuehn, E., Perez-Lopez, M. B., Diersch, N., Döhler, J., Wolbers, T., & **Riemer, M.** (2018). Embodiment in the aging mind. *Neurosci Biobehav Rev, 86*: 207-225. https://doi.org/10.1016/j.neubiorev.2017.11.016

Riemer, M. (2018). Delusions of control in schizophrenia: Resistant to the mind's best trick? *Schizophr Res, 197*: 98-103. https://doi.org/10.1016/j.schres.2017.11.032

Fuchs, X., **Riemer, M.**, Diers, M., Flor, H., & Trojan, J. (2016). Perceptual drifts of real and artificial limbs in the rubber hand illusion. *Sci Rep, 6*: 24362. https://doi.org/10.1038/srep24362

Riemer, M., Diersch, N., Bublatzky, F., & Wolbers, T. (2016). Space, time, and numbers in the right posterior parietal cortex: Differences between response code associations and congruency effects. *NeuroImage, 129*: 72-79. http://dx.doi.org/10.1016/j.neuroimage.2016.01.030

Riemer, M., Rhodes, D., & Wolbers, T. (2016). Systematic underreproduction of time is independent of judgment certainty. *Neural Plast*: 6890674. https://doi.org/10.1155/2016/6890674

Riemer, M. (2015). Psychophysics and the anisotropy of time. *Conscious Cogn, 38*: 191-197. http://dx.doi.org/10.1016/j.concog.2015.06.007

Riemer, M., Bublatzky, F., Trojan, J., & Alpers, G. W. (2015). Defensive activation during the rubber hand illusion: Ownership versus proprioceptive drift. *Biol Psychol, 109*: 86-92. http://dx.doi.org/10.1016/j.biopsycho.2015.04.011

Riemer, M., Fuchs, X., Bublatzky, F., Kleinböhl, D., Hölzl, R., & Trojan, J. (2014). The rubber hand illusion depends on a congruent mapping between real and artificial fingers. *Acta Psychol, 152*: 34-41. http://dx.doi.org/10.1016/j.actpsy.2014.07.012

Bublatzky, F., Gerdes, A. B. M., White, A. J., **Riemer, M.**, & Alpers, G. W. (2014). Social and emotional relevance in face processing: Happy faces of future interaction partners enhance the LPP. *Front Hum Neurosci, 8*: 493. https://doi.org/10.3389/fnhum.2014.00493

Riemer, M., Hölzl, R., & Kleinböhl, D. (2014). Interrelations between the perception of time and space in large-scale environments. *Exp Brain Res, 232*: 1317-1325. https://doi.org/10.1007/s00221-014-3848-6

Riemer, M., Kleinböhl, D., Hölzl, R., & Trojan, J. (2013). Action and perception in the rubber hand illusion. *Exp Brain Res, 229*: 383-393. https://doi.org/10.1007/s00221-012-3374-3

Riemer, M., Trojan, J., Kleinböhl, D., & Hölzl, R. (2012). A 'view from nowhen' on time perception experiments. *J Exp Psychol Hum Percept Perform, 38*(5): 1118-1124. https://doi.org/10.1037/a0027073

Riemer, M., Trojan, J., Kleinböhl, D., & Hölzl, R. (2010). Body posture affects tactile discrimination and identification of fingers and hands. *Exp Brain Res, 206*(1): 47-57. https://doi.org/10.1007/s00221-010-2396-y

Peer-reviewed book chapters

Riemer, M. (2024). Time perception deficits in Alzheimer's disease and mild cognitive impairment. In: Neural Bases of Timing and Time Perception (Ed. Mioni, G., & Grondin, S.) Routledge: New York: 214-239. https://doi.org/10.4324/9781003449546

Seizova-Cajić, T., Zopf, R., **Riemer, M.**, & Fuchs, X. (2023). Somatosensory illusions. In: Somatosensory Research Methods (Ed. Holmes, N. P.) Springer: New York: 267-285.

Monographs

Riemer, M. (2013). Dynamic representations of the body in space. PhD Thesis, Otto Selz Institute for Applied Psychology, University of Mannheim.

Riemer, M. (2009). Postural influences on tactile discrimination and identification of fingers and hands. Diploma Thesis, Otto Selz Institute for Applied Psychology, University of Mannheim.

Articles for newspapers and magazines (not peer-reviewed)

Riemer, M. (2020). Physical time, perceived time, and their interrelation. *De Physicus, 31*(3): 5-7.