

Florian Scharf

Curriculum Vitae

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📍 Kassel University
Institute for Psychology
Psychological Research Methods
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Education

2016 – 2019	Dr. rer. nat. in Psychology Thesis: <i>Advances in the analysis of event-related potential data with factor analytic methods</i>	University of Leipzig
2014 – 2016	M.Sc. Psychology	University of Leipzig
2011 – 2014	B.Sc. Psychology	University of Leipzig
2009 – 2010	B.Sc. Chemistry (studies not completed)	University of Leipzig
2009	Abitur [higher education entrance qualification]	Gymnasium Brandis

Academic and Work Experience

04/2022 – present	W1-Professor for Psychological Research Methods (with tenure track), University of Kassel
04/2019 – 03/2022	Postdoctoral research associate , University of Münster, Statistics and Methods
10/2016 – 03/2019	Research and teaching fellow, Doctoral Student , University of Leipzig, Chair for Psychological Methods
01/2017 – 03/2019	Guest researcher , Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig
01/2018 – 02/2018	DAAD research stay hosted by Dr. Urte Roeber and Prof. Robert O'Shea as part of a DAAD joint research cooperation granted to Prof. Erich Schröger and Prof. Robert O'Shea, Murdoch University
03/2017 – 12/2017	Research fellow , University of Leipzig, Chair for Cognitive & Biological Psychology, in partial replacement of Assistant Professor Dr. Sabine Grimm
09/2012 – 09/2016	Student teaching assistant , University of Leipzig, Chair for Experimental Psychology & Methods and Chair for Psychological Methods (from 04/2016)
03/2015 – 07/2016	Student research & teaching assistant , University of Leipzig, Chair for Cognitive & Biological Psychology
09/2014	Research stay , Hungarian Academy of Sciences, Research Centre for Natural Sciences, Institute of Cognitive Neuroscience and Psychology
01/2014 – 03/2015	Student research assistant , Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Otto-Hahn-Group "Neural Bases of Intonation in Speech and Music"
08/2013 – 10/2013	Internship , Max-Planck-Institute for Human Cognitive and Brain Sciences, Leipzig, Otto-Hahn-Group "Neural Bases of Intonation in Speech and Music"
07/2012 – 12/2013	Student research assistant , Leipzig University of Applied Sciences, Project TOPINUS

Awards and Funding

- 2022 **3rd-best lecture** at the Institute for Psychology for the lecture *Statistik I*
- 2020 **3rd-best lecture** at the Institute for Psychology for the lecture *Statistik II*
- 2018 **Presentation award** for best junior scientist presentation
for the talk "Orthogonal versus Oblique Rotation in Temporal EFA for Event-related Potentials"
presented at the 8th European Congress of Methodology in Jena
- 2016 **Poster award** for the best poster prepared in the context of the "Projektmodul"
[Student research project]
- 04/2015 – 09/2016 **Deutschlandstipendium**, German national scholarship for high-achieving and committed students
- 2015 **Wilhelm-Wundt Teaching Award** granted by the Fachschaftsrat Psychologie [student representatives]
of the University of Leipzig

Chair offers

- 09/2021 University of Kassel (accepted), Psychological Research Methods

Academic self-government

- 10/2022 – present **Representative for the faculty of humanities in the council of the graduate academy**
- 10/2022 – present **Member of the examination board at the Institute for Psychology**
- 09/2020 – 03/2022 **Member of the committee for research and young scientist matters**
- 07/2020 – 11/2020 **Alternate member of the appointment committee for professorship
for psychology of entrepreneurship**
- 10/2019 – 06/2020 **Alternate member of the committee for teaching evaluations**

Professional Memberships

German Society for Psychology (DGPs): Section Quantitative Methods and Evaluation

Journal Reviewer (Ad-hoc)

Brain Research, Brain Topography, Child Development, Current Opinion in Behavioral Sciences, European Journal of Psychological Assessment, Frontiers in Psychology Perception Science, International Journal of Statistics and Probability, Journal of Computational and Graphical Statistics, Journal of Neuroscience Methods, Opinions on Behavioral Sciences, Psych, Psychological Methods, Psychophysiology, Scientific Reports, Structural Equation Modeling: A Multidisciplinary Journal

Publications

Under Review

Bonmassar, C., Scharf, F., Widmann, A., & Wetzel, N. (under review). On the relationship of behavioral distraction and pupil dilation caused by emotional novel sounds. <https://doi.org/10.31234/osf.io/vyqw8>

Peer-reviewed articles

- Schroeders, U., Scharf, F., & Olaru, U. (2023). Model specification searches in structural equation modeling using Bee Swarm Optimization. *Educational and Psychological Measurement*. Advance online publication. <https://doi.org/10.1177/00131644231160552>
- Volkmer, S., Wetzel, N., Widmann, A., & Scharf, F. (2022). Attentional control in middle childhood is highly dynamic - Strong initial distraction is followed by advanced attention control. *Developmental Science*. <https://doi.org/doi/10.1111/desc.13275>
- Höltermann, A., Scharf, F., Romer, G. & Möller-Kallista, B. (2022). Psychische Belastung bei unbegleiteten und begleiteten Flüchtlingen im Kindes- und Jugendalter in Deutschland. *Zeitschrift für Kinder- und Jugendpsychiatrie und Psychotherapie*. <https://doi.org/10.1024/1422-4917/a000855>
- Scharf, F., Widmann, A., Bonmassar, C., & Wetzel, N. (2022). A tutorial on the use of temporal principal component analysis in developmental ERP research – opportunities and challenges. *Developmental Cognitive Neuroscience*, 54, 101072. <https://doi.org/10.1016/j.dcn.2022.101072>

- Dercksen, T. T., Widmann, A., Scharf, F., & Wetzel, N. (2022). Sound omission related brain responses in children. *Developmental Cognitive Neuroscience*, 53, 101045. <https://doi.org/10.1016/j.dcn.2021.101045>
- Scharf, F., Pförtner, J., & Nestler, S. (2021). Can ridge and Elastic net structural equation modeling be used to stabilize parameter estimates when latent factors are correlated? *Structural Equation Modeling: A Multidisciplinary Journal*. <https://doi.org/10.1080/10705511.2021.1927736>
- Wetzel, N., Widmann, A., & Scharf, F. (2021). Distraction of attention by novel sounds in children declines fast. *Scientific Reports*, 11(1), 5308. <https://doi.org/10.1038/s41598-021-83528-y>
- Scharf, F., & Nestler, S. (2019). A Comparison of Simple Structure Rotation Criteria in Temporal Exploratory Factor Analysis for Event-Related Potential Data. *Methodology*, 15(Supplement 1), 43 – 60. <https://doi.org/10.1027/1614-2241/a000175>
- Scharf, F., & Nestler, S. (2019). Should regularization replace simple structure rotation in Exploratory Factor Analysis? *Structural Equation Modeling: A Multidisciplinary Journal*. <https://doi.org/10.1080/10705511.2018.1558060>
- Scharf, F., & Nestler, S. (2019). Exploratory structural equation modeling for event-related potential data – an all-in-one approach? *Psychophysiology*. <https://doi.org/10.1111/psyp.13303>.
- Wetzel, N., Scharf, F. & Widmann, A. (2018). Can't ignore –distraction by task-irrelevant sounds in early and middle childhood. *Child Development*. <https://doi.org/10.1111/cdev.13109>
- Scharf, F., & Nestler, S. (2018). Principles behind variance misallocation in temporal exploratory factor analysis for ERP data: Insights from an inter-factor covariance decomposition. *International Journal of Psychophysiology*, 128, 119-136. <https://doi.org/10.1016/j.ijpsycho.2018.03.019>.
- Bianco, R., Novembre, G., Keller, P. E., Kim, S.-G., Scharf, F., Friederici, A. D., et al. (2016). Neural networks for harmonic structure in music perception and action. *NeuroImage*, 142, 454-464. <https://doi.org/10.1016/j.neuroimage.2016.08.025>.
- Bianco, R., Novembre, G., Keller, P. E., Scharf, F., Friederici, A. D., Villringer, A., et al. (2016). Syntax in action has priority over movement selection in piano playing: An ERP study. *Journal of Cognitive Neuroscience*, 28(1), 41-54. https://doi.org/10.1162/jocn_a_00873

Conference Posters

- Pförtner, J., Jacobucci, R., Nestler, S., & Scharf, F. (2021). *A comparison of exploratory and regularized structural equation models*. Poster presented at the 9th European Congress of Methodology in Valencia, Spain. [This poster was awarded with the best poster award.]
- Menn, K., Scharf, F., Männel, C., & Meyer, L. (2021). *Speech tracking and linguistic knowledge in early childhood: A naturalistic approach*. Poster presented at 10th IMPRS NeuroCom Summer School, London, United Kingdom.
- Pförtner, J., Jacobucci, R., Nestler, S., & Scharf, F. (2019). *A comparison of exploratory and regularized structural equation models*. Poster presented at the 14th meeting of the methods and evaluation section of the German Psychological Society in Kiel, Germany.
- Scholz, L., Nestler, S., & Scharf, F. (2019). *Comparing robust tests for mean differences between two independent samples*. Poster presented at the 14th meeting of the methods and evaluation section of the German Psychological Society in Kiel, Germany.
- Scharf, F., & Nestler, S. (2019). *Exploratory structural equation modeling for event-related potential data*. Poster presented at 45th annual meeting of the biological psychology and neuropsychology section of the German Psychological Society (DGPs), Dresden, Germany.
- Scharf, F., & Nestler, S. (2018). *Temporal EFA for ERP data generally results in correlated factors*. Poster presented at 51st meeting of the German Psychological Society (DGPs), Frankfurt, Germany.
- Scharf, F., & Nestler, S. (2018). *Can regularization replace simple structure rotation in Exploratory Factor Analysis?* Poster presented at ZIB [Centre for International Student Assessment] Summer Academy 2018, Kiel, Germany.
- Scharf, F., & Nestler, S. (2018). *Temporal EFA for ERP data generally results in correlated factors*. Poster presented at 8th IMPRS NeuroCom Summer School, Leipzig, Germany.
- Scharf, F., Pförtner, J., & Nestler, S. (2017). *Loading recovery in Maximum Likelihood and Bayesian Exploratory Factor Analysis*. Poster presented at 13th Conference of the Expert Group of Methods and Evaluation of the German Psychological Society, Tübingen, Germany.
- Scharf, F., Müller, D., Marzecová, A., Schröger, E., & Grimm, S. (2017). *Can repetition priming explain sequential effects in temporal preparation*. Poster presented at 59th Conference of Experimental Psychologists (TEAP), Dresden, Germany.
- Bianco, R., Novembre, G., Keller, P. E., Scharf, F., Friederici, A. D., Villringer, A., et al. (2015). *Musical syntax in perception and action: An fMRI study*. Poster presented at 21st Annual Meeting of the Organization for Human Brain Mapping (OHBM), Honolulu, HI, USA.

Conference Talks

- Speck, K., & Scharf, F. (2022). *Konsequenzen von Latenzverschiebungen für faktoranalytische Auswertungen von Ereignis-korrelierten Potentialdaten*. Talk presented at the junior scientist meeting of the methods and evaluation section of the German Psychological Society in Kassel, Germany.
- Speck, K., & Scharf, F. (2022). *Konsequenzen von Latenzverschiebungen für faktoranalytische Auswertungen von Ereignis-korrelierten Potentialdaten*. Talk presented at 52nd meeting of the German Psychological Society (DGPs), Hildesheim, Germany.
- Scharf, F., & Nestler, S. (2022). *A unified structural equation model perspective on the analysis of event-related potential data*. Talk presented at 52nd meeting of the German Psychological Society (DGPs), Hildesheim, Germany.
- Scharf, F., & Nestler, S. (2021). *Analyseansätze für Ereignis-korrelierte Potenziale als Spezialfälle von Strukturgleichungsmodellen*. Talk presented at the 15th meeting of the methods and evaluation section of the German Psychological Society in Mannheim, Germany.
- Scharf, F., & Nestler, S. (2021). *A unified structural equation model perspective on the analysis of event-related potential data*. Talk presented at the 9th European Congress of Methodology in Valencia, Spain.
- Pförtner, J., Jacobucci, R., Nestler, S., & Scharf, F. (2021). *Dealing with cross-loadings in the structural equation modelling framework - a comparison of exploratory and regularized structural equation models*. Talk presented at the junior scientist meeting of the methods and evaluation section of the German Psychological Society (online event), Germany.
- Scharf, F., & Nestler, S. (2021). *A unified structural equation model perspective on the analysis of event-related potential data*. Talk presented at the junior scientist meeting of the methods and evaluation section of the German Psychological Society (online event), Germany.
- Scharf, F., & Nestler, S. (2019). *Should regularization replace simple structure rotation in exploratory factor analysis?* Talk presented at the 14th meeting of the methods and evaluation section of the German Psychological Society in Kiel, Germany.
- Scharf, F., & Nestler, S. (2018). *Orthogonal versus Oblique Rotation in Temporal EFA for Event-related Potentials Analysis*. Talk presented at the 8th European Congress of Methodology in Jena, Germany.

Software Development

- Contributor to *lavaan* [R-package for structural equation modeling]
- Contributor to *regsem* [R-package for regularized structural equation modeling]

Teaching & Supervision

Lectures, Seminars, Tutorials & Workshops

2023	Introduction to Linear Mixed Models (with Salomé Li Keintzel) 3-day workshop about linear mixed models
2023	Introduction to R (with Kim-Laura Speck) 3-day workshop for beginners
2022	Introduction to Big Data 2-day workshop about Big Data analyses for early-career methodological researchers
since 2022	Lecture & Seminar: Quantitative Methods I & II 1st year bachelor introductory statistics courses
since 2022	Lecture & Seminar: Advanced Research Methods and Statistical computing Master course on advanced statistical methods
2022	Seminar: Qualitative research methods Introductory course on interview- and observation-based research methods
2019 – 2022	Lecture: Statistik I + II [Introduction to statistics] Lecture for 1st year bachelor students
2016 – 2019	Seminar: Computer gestützte Datenanalyse in R I & II [Statistical analyses using R] Statistics exercise for 1st year bachelor students
2019	Introduction to Linear Mixed Models (with Richard Rau) 3-day workshop about linear mixed models
2018	Seminar: Evaluation und Forschungsmethodik [Statistical analyses using R (Advanced course)] Statistics exercise for master students
2018	Steuerung psychologischer Experimente [Programming psychological experiments] MATLAB and Psychophysics Toolbox course for master students
2018	Seminar: Perzeptive Prozesse [Perception] Master course about the state of psycho-physiological research on perception
2017 & 2018	Introduction to Big Data (with Steffen Nestler) 2-day workshop about Big Data analyses
2017 – 2018	Auswertung und Interpretation von Daten aus Hirnstrommessungen [Analysis and interpretation of EEG data] Introduction to the event-related potential technique for master students
2016	Introduction to R 2-day workshop for beginners
2016	Tutorial: Statistik für Fortgeschrittene [Advanced Statistics] Accompanying tutorial for master students
2016	Steuerung psychologischer Experimente [Programming psychological experiments] Tutor assistant during practical sessions for master students
2015	Auswertung und Interpretation von Daten aus Hirnstrommessungen [Analysis and interpretation of EEG data] Tutor assistant during practical sessions for master students
2015	Empiriepraktikum: Station EEG-Ableitung [Experimental practicals: EEG recording] Teaching assistant during laboratory sessions for bachelor students
2013 – 2015	Tutorial: Multivariate Statistik [Multivariate Statistics] Accompanying tutorial for master students
2013 – 2015	Tutorial: Multivariate Statistik [Multivariate Statistics] Accompanying tutorial for bachelor students
2012 – 2016	Tutorial: Deskriptive & Inferenzstatistik [Descriptive & Inferential Statistics] Accompanying tutorial for bachelor students

Dissertation projects

2023 – ongoing	Salomé Li Keintzel
2022 – ongoing	Kim-Laura Speck

Master theses

- 2023 **Salomé Li Keintzel, M.Sc. Psychology, University of Kassel**
[Can Mixed Effect Trees Be Used to Recover Temporal Dynamics of Experimental Effects?]
- 2022 **Sebastian Kueppers, M.Sc. Psychology, University of Münster**
[Estimating Crossed Random Effects in Binomial GLMMs With Planned Missingness:
How Many Players Need to Play the Guessing Game App WhoKnows?]
- 2022 **Louisa Reinhard, M.Sc. Psychology, University of Münster**
[Investigating Intra-Experimental Dynamics of Responses to Stimuli following a Distracting Event]
- 2022 **Lena Scholz, M.Sc. Psychology, University of Leipzig**
[Measuring the Predictability of School Connectedness in Adolescents]
- 2022 **Kim-Laura Speck, M.Sc. Psychology, University of Leipzig**
[Consequences of latency shifts on exploratory factor analysis for event-related potential data]
- 2021 **Sindram Volkmer, M.Sc. Psychology, University of Leipzig**
[The Distraction Effect in Children: Analysis of Developmental Processes and Experimental Moderators]
- 2020 **Jana Pförtner, M.Sc. Psychology, University of Leipzig**
[Dealing with cross-loadings in the structural equation modelling
framework - a comparison of exploratory and regularized structural equation models]
- 2020 **Christine Telle, M.Sc. Psychology, University of Leipzig**
[Proportion- versus pattern-based processing: The auditory MMN in the context of competing predictions]

Bachelor theses

- 2022 **Helena Hoschek, B.Sc. Psychology, University of Münster**
[Measuring the motivation of volunteers in German rescue services – a questionnaire development]
- 2021 **Johanna Paping, B.Sc. Psychology, University of Münster**
[Comparing ordinary least squares and ridge regularized regression
under multicollinearity – a replication]
- 2021 **Dominik Strutz, B.Sc. Psychology, University of Münster**
[Multicollinearity in the Context of Congruence Hypotheses
Does Regularization Help?]
- 2021 **Anna Nikolei, B.Sc. Psychology, University of Münster**
[A comparison of ordinal regression methods]
- 2020 **Timo Gloe, B.Sc. Psychology, University of Münster**
[A performance comparison of post-selection inference methods
in the context of a multiple lasso regression]
- 2019 **Lena Scholz, B.Sc. Psychology, University of Leipzig**
[Comparing tests for mean differences between two independent samples
under conditions of non-normality and heteroscedasticity]
- 2019 **Marie-Louise Barth, B.Sc. Psychology, University of Leipzig**
[Relationship between musical ability and the mismatch negativity]
- 2018 **Katja Moldt, B.Sc. Psychology, University of Leipzig**
[The auditory MMN to predictable pitch deviants –a replication study]
- 2018 **Juliane Feiler, B.Sc. Psychology, University of Leipzig**
[Reliability and stability of the auditory MMN elicited by pitch deviants across different SOAs]
- 2017 **Jana Pförtner, B.Sc. Psychology, University of Leipzig**
[Comparing loading and correlation estimates of EFA and PCA – a replication study]

Interns

- 2022/2023 **Constantin Wiegand**
- 2022 **Anna Nikolei**
- 2021 **Carolin Albrecht**
- 2021 **Timo Gloe**
- 2020 **Rebecca Seggewiß**
- 2020 **Anna Nikolei**
- 2020 **Maximilian Neises**
- 2019 **Dominik Strutz**
- 2018 **Marie Salditt**
- 2018 **Lena Scholz**