Prof. Dr. Mirka Henninger

Assistant Professor for Statistics & Data Science
University of Basel, Faculty of Psychology
4055 Basel, Switzerland

Email: mirka.henninger@unibas.ch

September 28, 2024

EDUCATION & ACADEMIC POSITIONS

since 02/2024 | Assistant Professor with Tenure Track
Head of the Center for Statistics & Data Science
Faculty of Psychology
University of Basel, Switzerland

09/2023—01/2024 | Senior Researcher
University of Zurich, Switzerland
Chair for Psychological Methods, Evaluation and Statistics
Chair: Carolin Strobl

01/2020—08/2023 | Postdoctoral Researcher
University of Zurich, Switzerland
Chair for Psychological Methods, Evaluation and Statistics
Chair: Carolin Strobl

02/2016—12/2019 | Teaching Associate & Doctorate in Psychology
Graduate School of Economic and Social Sciences, University of Mannheim, Germany
Chair for Research Methods and Psychological Assessment
Thesis: Psychometric modeling as a tool to investigate heterogeneous response scale use
Supervisor: Thorsten Meiser

10/2013—12/2015 | Master of Science, Psychology
Ludwig-Maximilians-Universität Munich, Germany

08/2010—07/2013 | Bachelor of Science, Psychology
University of Mannheim, Germany

INTERNATIONAL EXPERIENCE

05/2023–06/2023 | Visiting Scholar
Chair Quantitative Psychology and Interindividual Differences
KU Leuven, Belgium
Host: Eva Ceulemans

01/2019—02/2019 | Visiting Scholar
Chair for Psychological Methods, Evaluation, and Statistics
University of Zurich, Switzerland
Host: Carolin Strobl

09/2015—12/2015 | International Cooperation
Survey conducted for the German Society for International Cooperation (GIZ)
Pristina, Kosovo

09/2012—12/2012 | Semester Abroad
University of Glasgow
Glasgow, United Kingdom

THIRD-PARTY FUNDING

2024 | SNF Project Grant: "Integrating hierarchical data structures in machine learning methods: Challenges, solutions, and opportunities for psychological research"
Swiss National Science Foundation (SNSF)
Amount: CHF 322,205

2022 | Travel Grant for international research stay at KU Leuven, Belgium
Graduate Campus, University of Zurich
Amount: CHF 1,2000

2022 | Cooperation Grant: "Identifying relevant predictors for differential item functioning: A comparison of different machine learning based approaches"
- together with: Dr. Marie-Ann Sengewald, Leibniz Institute for Educational Trajectories, Bamberg, Germany
Section Methodology and Evaluation of the German Psychological Society
Amount: €500

2021 | Grant for carrying out a young researcher network meeting: "Multilevel modeling in method and applied research"
- lead applicant: Dr. Mirka Henninger (University of Zurich)
- co-applicants: Dr. Corina Berli & Dr. André Kretschmar (University of Zurich)
Graduate Campus, University of Zurich
Amount: CHF 6,241

2019 | Scholarship for participation in the International Meeting of the Psychometric Society 2019 in Santiago de Chile
German Academic Exchange Service (DAAD)
Amount: €2,002

2019 | Travel Award for participation in the International Meeting of the Psychometric Society 2019 in Santiago de Chile
Psychometric Society
Amount: USD 1,000

2018 | Grant for international research stay in Zurich, Switzerland
IPID4all Mobility Funding, University of Mannheim
Amount: €2,304

2016—2019 | Grant for doctoral research and conferences (declined)
Graduate School of Economic and Social Sciences (GESS), University of Mannheim
Amount: €14,400

2012—2013 | Scholarship award to talented and high-achieving students
University of Mannheim (Deutschlandstipendium)
Amount: €3,600

ORGANIZATION OF SCIENTIFIC MEETINGS

06/2023 | Co-organizer of Psychoco 2023 at the University of Zurich (together with Yannick Rothacher, Rudolf Debelak, Carolin Strobl, Achim Zeileis, and Florian Wickelmaier)

10/2022 | Main organizer of the Young Scientist Retreat of the Section of Methodology and Evaluation in Kassel (together with Esther Ullitzsch and Florian Scharf)

05/2022—09/2022 | Main initiator and organizer of the network meeting "Multilevel Modelling in Method and Applied Research" at the University of Zurich (together with André Kretzschmar and Corina Berli)

03/2021 | Co-organizer of the Young Scientist Retreat of the Section of Methodology and Evaluation (together with Marie-Ann Sengewald, Christoph Kiefer, Julia Norget, and Nele Stadtbäumer)

02/2021 | Virtual Host of Psychoco 2021 (together with Rudolf Debelak, Carolin Strobl, Achim Zeileis, and Florian Wickelmaier)

ACADEMIC SELF-ADMINISTRATION

02/2024—present | Member of the Faculty Committee of the Faculty of Psychology

09/2021—10/2023 | Main representative for junior researchers at the Section of Methodology and Evaluation of the German Psychological Society

02/2020—09/2021 | Deputy of the representative for junior researchers at the Section of Methodology and Evaluation of the German Psychological Society

01/2020—01/2024 | Scientific director of the Zurich R Courses

01/2020—01/2024 | Statistical consultant at the Department of Psychology, University of Zurich

09/2018—12/2019 | Representative of the academic mid-level faculty at the Social Science faculty council, University of Mannheim

COMMITMENT TO EQUALITY AND DIVERSITY

09/2024 | Panelist at "Is there a shortage of new talented junior researchers in psychology? A critical analysis!"
Panel discussion at the 53^{rd} Conference of the German Psychological Society, Vienna, Austria.

06/2023 | Panelist at "Women, increase your network!"
Panel discussion as part of the Summer School "Statistical Modeling in Psychology" at the University of Mannheim, Germany

03/2023 | Panelist at "Women from the R community"
Panel discussion as part of the International Women's Day (March, 8), Zurich, Switzerland

06/2023, 01/2023 and 09/2022 | Report on the status quo of gender equality and the reconciliation of work and family life for researchers in psychology
Presentations on behalf of the German Psychological Society (e.g., at the 53^{rd} Conference of the German Psychological Society and at the Fakultätentag Psychologie)

09/2021 and 09/2022 | Initiator and moderator of the panel discussions: "Kinder(-wunsch) und Karriere in der Wissenschaft" ("Family (planning) and a scientific career")
Panel discussions at the 15^{th} Meeting of the Section of Methodology and Evaluation of the German Psychological Society and the 52^{nd} Conference of the German Psychological Society

since 09/2019 | Member of the commission to foster gender equality in the Section of Methodology and Evaluation of the German Psychological Society

TEACHING & STUDENT SUPERVISION

Primary Instructor

Fall 2024 | Statistical foundations: Research methods and statistics (propaedeutic lecture, > 300 students)
(Level: B.Sc.), University of Basel

Fall 2024 | Advanced analysis methods: Machine learning in psychological research
(Level: M.Sc. & PhD), University of Basel

Fall 2022, 2023 | Statistical foundations: Statistics 1.1 (propaedeutic lecture, > 800 students)
(Level: B.Sc.), University of Zurich

Spring 2020, 2021, 2022 | Advanced statistical methods: Multilevel modeling in psychology
(Level: M.Sc.), University of Zurich

Fall 2020 | Statistical foundations: supervision of tutors for Statistics 1.1
(Level: B.Sc.), University of Zurich

Spring 2018, 2019 | Advanced statistical methods: Multilevel and structural equation modeling
(Level: M.Sc.), University of Mannheim

Fall 2016, 2017, 2018, 2019 | Statistical foundations: computer-based data analysis
(Level: B.Sc.), University of Mannheim

Spring 2016, 2017 | Psychological Testing and Diagnostics
(Level: B.Sc.), University of Mannheim

M.Sc. Theses

2024 | **Constantin Wiegand:** Bootstrapping or subsampling? A simulation study investigating stability methods for tree-based learners (University of Basel, in cooperation with the University of Kassel)

2023 | **Linus Hany:** Level-1 and Level-2 predictor variables in decision trees and random forests for multilevel data (University of Zurich)

2023 | **Vera Bocklet:** Data characteristics and other prerequisites for applying the Mantel-Haenszel effect size measure for differential item functioning (University of Zurich)

2022 | **Luca Gottardi**: Analyzing the impact of sampling rate change in autoregressive multilevel modeling (University of Zurich)

2021 | **Alain Stocker**: Data with measurement error: A comparison between linear regression and structural equation modeling (University of Zurich)

2020 | **Noah Bossart**: Estimation accuracy of standard errors and their influence on power: A comparison between linear and hierarchical linear models (University of Zurich)

2019 | **Marcel Schreiner**: Personality with style: Exploring the relationships between response styles and personality using self- and peer-reports and an indirect measure of the Big Five personality traits (University of Mannheim)

B.Sc. Theses

2023 | **Lars Pataky**: Missing values in psychological research: A discussion of different methodological approaches (University of Zurich) Fehlende Werte in psychologischer Forschung

2023 | **Nino Elias Vögeli**: Analysis methods for daily diary and daily intervention studies (University of Zurich)

2023 | **Mirjana Perucic**: Interpretation techniques for machine learning methods: A look inside the black-box? (University of Zurich)

2023 | **Elena Rüdt**: Response styles in personality measurement: Negligible or a threat to data quality? (University of Zurich)

2022 | **Hannah Sievers**: Interpretation techniques for machine learning methods (University of Zurich)

2021 | **Vera Bocklet**: Sequential testing in the context of good scientific practice (University of Zurich)

2020 | **Doniyel Sefere**: Sources of and potential solutions to publication bias in psychological research (University of Zurich)

2018 | **Miriam Pfister**: Are extreme and acquiescence response style related to the implicit self-concept of personality? (University of Mannheim)

Research Internships

2024 | **Luana Brunelli**: Reliability in intensive longitudinal data: A systematic review (University of Basel)

2024 | **Jan Radek**: Effect sizes for differential item and differential step functioning in partial credit trees (University of Basel)

2022 | **Vera Bocklet**: Effect vs. dummy-coding: non-essential multicollinearity in 2×2 designs (University of Zurich)

2021 | **Krenar Sherifi**: Bias in random forest variable selection and variable importance (University of Zurich)

2019 | **Alicia Gernand**: Item response models for testlet designs (University of Mannheim)

INVITED TALKS & WORKSHOPS

Invited Talks

upcoming: 04/2025 | New developments integrating machine learning and psychometric models
Invited talk at Mannheim Research Colloquium on Survey Methods (MaRCS), Germany (Florian Keusch)

upcoming: 11/2024 | New advances at the intersection of machine learning and parametric models with applications in psychology
Invited talk at the research seminar of the department of psychology at the University of Bern, Switzerland (Jennifer Inauen)

upcoming: 10/2024 | Machine learning in psychology: Opportunities, challenges, and potential solutions
Invited keynote at the junior scientist retreat on behalf of the Section of Methodology and Evaluation of the German Psychological Society, Kassel, Germany

02/2024 | Detecting heterogeneity between persons using techniques from psychometrics, machine learning, and their intersection
Invited talk at FU Berlin, Chair of Methods and Evaluation, Germany (Steffi Pohl)

11/2023 | Interpretable machine learning: Shape, relevance, and interactions of predictor effects
Invited talk at TU Munich, Chair of Research and Science Management, Germany (Claudia Peus)

05/2023 | Detecting heterogeneity using methods from psychometrics, machine learning, and multilevel modeling
Invited talk at KU Leuven, Quantitative Psychology and Interindividual Differences, Leuven, Belgium (Eva Ceulemans)

05/2023 | Interpretable machine learning: Shape, relevance, and interactions of predictor effects
Invited talk at KU Leuven, Center for Contextual Psychiatry, Leuven, Belgium (Ginette Lafit)

12/2022 | Detecting heterogeneity between persons: Insights using techniques from psychometrics, machine learning methods, and their intersection
Invited speaker at "Advancing quantitative perspectives in education science: A Cambridge-Zurich exchange (CAMZH)"

12/2022 | Comparing machine learning based approaches for differential item functioning through illustrative, simulated examples
Invited talk at the Leibniz Institute for Educational Trajectories, Bamberg (Christian Aßman, Timo Gnambs, & Marie-Ann Sengewald)

06/2022 | A new stopping criterion for Rasch trees based on the Mantel-Haenszel effect size measure for differential item functioning
Invited talk at the Leibniz Institute for Science and Mathematics Education, Kiel (Oliver Lüdtke & Esther Ullitzsch)

01/2022 | Using the Mantel-Haenszel odds ratio as a stopping criterion in a recursive partitioning procedure to detect differential item functioning in large-scale assessments
Invited talk at the Leibniz Institute for Educational Trajectories, Bamberg (Christian Aßman, Timo Gnambs, & Marie-Ann Sengewald)

05/2021 | Guest lecture in "Statistical methods evaluation via advanced simulation techniques"
Invited lecture at the Berlin University Alliance (Benjamin Becker & Martin Hecht)

11/2020 | Interpretable machine learning methods: Opportunities and pitfalls.
Invited talk at the University of Koblenz-Landau (Eunike Wetzel)

03/2019 | Response styles as threshold shifts in divide-by-total IRT model extensions
Invited talk at the Ludwig-Maximilian-University Munich (Markus Bühner)

01/2019 | Response styles IRT models as tools to investigate heterogeneous response scale use
Invited talk at the University of Zurich (Carolin Strobl)

Workshops and Summer Schools

upcoming: 04/2025 | Simulation studies in psychological research using `R`
(together with Esther Ulitzsch and Florian Scharf)
Invited two-day workshop in the DFG Research Training Group "Statistical Modeling in Psychology" (SMiP).

09/2024 | Machine Learning and Interpretable Machine Learning with `R`
(together with Carolin Strobl and Rudolf Debelak)
Full-day Pre-Conference Workshop at the 53^{rd} Conference of the German Psychological Society, Vienna, Austria.

07/2024 | Planning and conducting simulation studies in `R`
(together with Carolin Strobl)
Full-day Pre-Conference Workshop at the International Meeting of the Psychometric Society, Prague, Czech Republic.

02/2024 | Machine Learning and Interpretable Machine Learning with `R`
Invited full-day Workshop at the Research Data Center (FDZ) of the Institute for Educational Quality Development (IQB) in Berlin, Germany.

02/2024 | How does one explore research methods?
(together with Florian Scharf and Esther Ulitzsch)
Workshop for Master and PhD students on behalf of the Section of Methodology and Evaluation of the German Psychological Society.

07/2023 | Machine Learning and Interpretable Machine Learning with `R`
(together with Carolin Strobl and Yannick Rothacher)
Invited full-day Pre-Conference Workshop at the 10^{th} European Congress of Methodology, Ghent, Belgium; invited by Yves Rosseel, Data Analysis and Statistical Science, Ghent University

04/2023 | How does one explore research methods?
(together with Florian Scharf and Esther Ulitzsch)
Workshop for Master and PhD students on behalf of the Section of Methodology and Evaluation of the German Psychological Society.

06/2023 | Modeling heterogeneity of response processes in item response theory
(together with Thorsten Meiser and Esther Ulitzsch)
SMiP IOPS Summer School at the University of Mannheim (26-30 June 2023)
invited by Thorsten Meiser, Professorship for Research Methods and Psychological Assessment

07/2022 | Machine Learning and Interpretable Machine Learning with `R`
(together with Carolin Strobl and Yannick Rothacher)
Full-day Pre-Conference Workshop at the 86^{th} Annual International Meeting of the Psychometric Society, Bologna, Italy.

03/2022 | Multilevel modeling using `R`
Full-day workshop at the Zurich R Courses (Continuing Education Program)

12/2018 | Linear mixed models with crossed-random effects in experimental research
Full-day workshop at the University of Hamburg; invited by Juliane Degner, Social Psychology

AD-HOC REVIEWING

Psychological Methods & Assessment

Applied Psychological Measurement
Behaviometrika
Behavior Research Methods
British Journal of Mathematical and Statistical Psychology
Educational and Psychological Measurement
European Journal of Psychological Assessment
Frontiers in Psychology, section Quantitative Psychology and Measurement
Journal of Educational and Behavioral Statistics
Journal of Educational Measurement
Psychological Methods
Psychometrika
Quality & Quantity

Psychology and Social Sciences

Borderline Personality Disorder and Emotion Dysregulation
Collabra: Psychology
Frontiers in Psychology, section Personality and Social Psychology
Journal of Personality
Nature: npj Mental Health Research
Personality and Individual Differences
Sage Open: Humanities, Social Sciences, and Behavioral Sciences
Social Science Research

CURRENT RESEARCH PROJECTS

Machine Learning & Psychometrics

- "Identifying relevant predictors for differential item-functioning: A comparison of different machine learning based approaches" together with Marie-Ann Sengewald & Timo Gnambs, Leibniz Institute for Educational Trajectories, Bamberg, Germany
- "Modeling response styles and thinking modes in survey responses." together with Ulf Böckenholt, Northwestern Kellog University, Evanston/Chicago, US

Applications of multilevel modeling and machine learning in empirical psychology

- "What makes up the moment in couples' emotional similarity?" lead by Chiara Carlier, Eva Ceulemans, & Peter Kuppens, KU Leuven, Belgium
- "Daily reciprocal symptom trajectories of sleep disturbances and affective symptoms in the daily life of anxiety patients: An ecological momentary assessment study" lead by Dominique Recher & Birgit Kleim, University of Zurich, Switzerland

Tutorials

- "Testing competing multi-group hypotheses using the `R` package `cofad`" together with Simone Malejka, University of Cologne, Markus Burkhardt, University of Chemnitz, & Johannes Titz, University of Chemnitz

Text books

- "Multilevel Modellierung: eine verständliche Einführung" together with Carolin Strobl, University of Zurich, Switzerland

PhD CANDIDATES UNDER MY SUPERVISION

since 09/2024 | Jan Radek

Study and sample size planning for machine learning analyses in psychological research

since 09/2024 | Constantin Wiegand

Stability and uncertainty assessment for machine learning analyses in psychological research

since 09/2024 | Linus Hany

Machine learning analyses for multilevel and longitudinal data

PUBLICATIONS

Under review

Henninger, M., Vanhasbroeck, N., & Tuerlinckx, F. (under review). Affect dynamics or response bias? The relationship between extreme response style and affect dynamics in a controlled experiment. Preprint. OSF.

Henninger, M., Radek, J., Sengewald, M.-A. & Strobl, C. (under review). Partial credit trees meet the partial gamma coefficient for quantifying DIF and DSF in polytomous items. Preprint. OSF.

Rohde, J., Henninger, M., McEneaney, C., Xiyang Xu, A., Wong, J., Mazzaferro, T., Friedman, O., Rahman, N., Kleim, B., & Brown, A. (under review). Digital self-efficacy training and its effects on self-efficacy and mental health outcomes: A randomized controlled trial.

Henninger, M. & Strobl, C. (under review). Local interpretation techniques for machine learning methods: Theoretical background, pitfalls and interpretation of LIME and Shapley values. Preprint. OSF

Recher, D., Rohde, J., Da Poian, J., Henninger, M., Brogli, L., Huber, R., Karlen, W., Lustenberger, C., & Kleim, B. (under review). Targeted memory reactivation during sleep improves emotional memory modulation following imagery rescripting.

Peer-reviewed publications

Dukic, J., Johann, A., Henninger, M., & Ehlert, U. (in press). Estradiol and progesterone from pregnancy to postpartum: A longitudinal latent class analysis. *Frontiers in Global Women's Health, section Maternal Health.*

Strobl, C., Rothacher, Y., Theiler, S., & Henninger, M. (in press). Detecting interactions with random forests: a comment on Gries' words of caution and suggestions for improvement. *Corpus Linguistics and Linguistic Theory.*

Fokkema, M., Henninger, M., & Strobl., C (in press). One model may not fit all: Subgroup detection using model-based recursive partitioning. *Journal of School Psychology.*

Ulitzsch, E., Henninger, M., & Meiser, T. (2024). Differences in response-scale usage are ubiquitous in cross-country comparisons and a potential driver of elusive relationships. *Nature Scientific Reports.* `https://rdcu.be/dHMPi`. OSF

Sengewald, M.-A., Henninger, M., Bechtloff, P, & Kubik, V. (2024) Familiengerechte Chancen für eine wissenschaftliche Karriere in der psychologischen Forschung? Eine Bestandsaufnahme zur Vereinbarkeit beruflicher und familiärer Anforderungen im Fachbereich Psychologie mit zielgerichteten Unterstützungsmaßnahmen. [Family-friendly opportunities for a scientific career in psychological research? An inventory of the compatibility of professional and family requirements in the field of psychology with targeted support measures.] *Psychologische Rundschau.* https://doi.org/10.1026/0033-3042/a000682. OSF

Paersch, C., Recher, D. Schulz, A., Henninger, M., Schlup, B., Künzler, F., Homan, S., Kowatsch, T., Fisher, A., Horn, A., & Kleim, B. (2024). Self-efficacy effects on symptom experiences in daily life and early treatment success in anxiety patients. *Clinical Psychological Science.* doi: 10.1177/21677026231205262. OSF

Rohde, J., Marciniak, M. A., Henninger, M., Homann, S., Ries, A., Paersch, C., Friedman, O., Brown, A., & Kleim, B. (in press). Effects of a digital self-efficacy training in stressed university students: A randomized controlled trial. *Plos One.* Preprint

Brandt, H., Henninger, M., Ulitzsch, E., Kleinke, K., & Schäfer, T. (2024). Responsible research

assessment in the area of methodological or quantitative research: A comment on Gärtner et al. (2022). *Meta-Psychology*. https://open.lnu.se/index.php/metapsychology/article/view/3796. Preprint

Zimmer, F., Henninger, M., & Debelak, R. (2023). Sample size planning for complex study designs: A tutorial for the mlpwr package. *Behavior Research Methods*. doi: 10.3758/s13428-023-02269-0. OSF. Preprint

Rohde, J., Marciniak, M. A., Henninger, M., Homann, S., Ries, A., Paersch, C., Egger, S., Seifritz E., Brown, A., & Kleim, B. (2023). Investigating relationships between self-efficacy, mood, and anxiety using digital technologies: A randomized controlled trial. *Journal of Medical Internet Research Formative Research*. doi: 10.2196/45749.

Henninger, M., Plieninger, H., & Meiser, T. (2023). The effect of response formats on response style strength: An experimental comparison. *European Journal of Psychological Assessment*. doi: 10.1027/1015-5759/a000779. OSF. Preprint

Henninger, M., Debelak, R., Rothacher, Y., & Strobl, C. (2023). Interpretable machine learning for psychological research: Opportunities and pitfalls. *Psychological Methods*. doi: 10.1037/met0000560. OSF. Preprint

Henninger, M., Debelak, R., & Strobl, C. (2023). A new stopping criterion for Rasch trees based on the Mantel-Haenszel effect size measure for differential item functioning. *Educational and Psychological Measurement, 83,* 181-212. doi: 10.1177/00131644221077135. Preprint

Henninger, M. & Meiser, T. (2023). Quality control: Response style modeling. In: Tierney, R.J., Rizvi, F., Erkican, K. (Eds.), International Encyclopedia of Education, Volume 14. Elsevier. doi: 10.1016/B978-0-12-818630-5.10041-7. OSF.

Paz Castro, R., Henninger, M., Schaub, M. P. & Salis Gross, C. (2022). Changes in attitudes towards smoking during smoking cessation courses for Turkish- and Albanian-speaking migrants in Switzerland and its association with smoking behavior: A latent change score approach. Frontiers in Psychology, section Health Psychology. https://doi.org/10.3389/fpsyg.2022.1032091

Henninger, M. (2021). A novel Partial Credit extension using varying thresholds to account for response styles. *Journal of Educational Measurement, 58,* 104-129. doi: 10.1111/jedm.12268 OSF. Preprint

Henninger, M., & Plieninger, H. (2021). Different styles, different times: How response times can inform our knowledge about the response process in rating scale measurement. *Assessment, 28,* 1301-1319. doi: 10.1177/1073191119900003. OSF.

Henninger, M., & Meiser, T. (2020). Different approaches to modeling response styles in divide-by-total item response theory models (Part I): A model integration. *Psychological Methods, 25,* 560-576. doi: 10.1037/met0000249 Preprint

Henninger, M., & Meiser, T. (2020). Different approaches to modeling response styles in divide-by-total item response theory models (Part II): Applications with novel extensions. *Psychological Methods, 25,* 577-595. doi: 10.1037/met0000268 Preprint

Meiser, T., Plieninger H., & Henninger, M. (2019). IRTree models with ordinal and multidimensional decision nodes for response styles and trait-based rating responses. *British Journal of Mathematical and Statistical Psychology, 72,* 501-516. doi: 10.1111/bmsp.12158

Ettlin, F., Bröder, A., & Henninger, M. (2015). A new task format for investigating information search and organization in multi-attribute decisions. *Behavior Research Methods, 47,* 506-518. doi: 10.3758/s13428-014-0482-y

Text Books

Strobl, C., Henninger, M., Rothacher, Y., & Debelak, R. (in press). Simulationsstudien in R: Design und praktische Durchführung. Springer.

Book Chapters

Frey, D., Henninger, M., Lübke, R., & Kluge, A. (2016). Einführung und konzeptionelle Klärung. In D. Frey (Ed.), *Psychologie der Werte: Von Achtsamkeit bis Zivilcourage - Basiswissen aus Psychologie und Philosophie* (pp. 1–12). Berlin, Heidelberg: Springer Berlin Heidelberg. doi: 10.1007/978-3-662-48014-4_1

Henninger, M. (2016). Resilienz. in D. Frey (Ed.), *Psychologie der Werte: Von Achtsamkeit bis Zivilcourage - Basiswissen aus Psychologie und Philosophie* (pp. 157-165). Berlin, Heidelberg: Springer Berlin Heidelberg. doi: 10.1007/978-3-662-48014-4_14

Contributions to software

Henninger, M. & Radek, J. (2024). effecttree: Adding effect size measures for differential item and differential step functioning to Rasch trees and Partial Credit trees. https://github.com/mirka-henninger/effecttree

Henninger, M. (2021). raschtreeMH: Integrating the Mantel-Haenszel odds ratio effect size measure in Rasch trees to evaluate the magnitude of differential item functioning. https://github.com/mirka-henninger/raschtreeMH

Henninger, M. (2021). InterpretableML: repository to facilitate the use of interpretation techniques for black-box machine learning methods. https://github.com/mirka-henninger/InterpretableML

Titz J, & Burkhardt M (2023). cofad: An R package and shiny app for contrast analysis. Journal of Open Source Software, 6. `https://doi.org/10.21105/joss.03822` Github

Molnar, C., Bischl, B., & Casalicchio, G. (2018). iml: An R package for Interpretable Machine Learning. Journal of Open Source Software, 3, 1–2. `https://doi.org/10.21105/joss.00786` Github

Conference talks and posters (selected)

Henninger, M. & Strobl, C. (2024, September). Interpretable machine learning: What can we learn about machine learning predictions for specific persons using local interpretation techniques? Talk presented at the 53^{rd} Conference of the German Psychological Society, Vienna, Austria.

Henninger, M., Radek, J., Sengewald, M.-S., & Strobl, C. (2024, July). Quantifying DIF and DSF effect sizes in partial credit trees. Symposium presentation at the 88^{th} Annual International Meeting of the Psychometric Society, Prague, Czech Republic.

Henninger, M., Hany, L., Carlier, C., Verhees, M., Kuppens, P., & Ceulemans, E. (2024, March). *Tree-based machine learning methods for multilevel data: Opportunities, pitfalls, and potential solutions.* Talk presented at the 14^{th} International Conference on Multilevel Analysis, Utrecht, Netherlands.

Henninger, M., Debelak, R., Rothacher, Y. & Strobl, C. (2023, July). *Detecting and describing interindividual heterogeneity using interpretable machine learning.* Talk presented at the 10^{th} European Congress of Methodology, Ghent University, Belgium.

Sengewald, M.-A., & Henninger, M. (2023, June). *Using regularization approaches for DIF detection in polytomous IRT models.* Talk presentation at the International Meeting on Detecting Differential Item Functioning in Polytomous IRT Models and/or Multiple Groups, University of Zurich, Switzerland.

Henninger, M., Debelak, R., & Strobl, C. (2023, June). *A new stopping criterion for Rasch trees based on the Mantel-Haenszel effect size measure.* Talk presentation at the 15^{th} Psychoco workshop, University of Zurich, Switzerland.

Henninger, M., & Strobl, C. (2023, June). *The level matters: Level-1 and Level-2 predictor variables in machine learning extensions for multilevel data.* Symposium presentation at the Conference of the Society for Ambulatory Assessment, Amsterdam (together with Laura Bringmann, Anna Langener, Marie Stadel, & Miriam Hehlmann)

Henninger, M., Rothacher Y., Debelak, R., & Strobl, C. (2022, September). *Detecting interaction effects using interpretable machine learning.* Talk presented at the 52^{nd} Conference of the German Psychological Society, Hildesheim, Germany.

Henninger, M., Rothacher, Y., Debelak, R. & Strobl, C. (2022, July). *A critical view on interpretation techniques for machine learning methods.* Talk presented at the 86^{th} Annual International Meeting of the Psychometric Society, Bologna, Italy.

Henninger, M., Rothacher, Y., Debelak, R. & Strobl, C. (2021, September). *The impact of correlated predictor variables on interpretation tools for machine learning methods.* Talk given at the 15^{th} Meeting of the Section of Methodology and Evaluation of the German Psychological Society, Mannheim, Germany (online).

Henninger, M., Debelak, R. & Strobl, C. (2021, July). *Mantel-Haenszel effect size as a stopping criterion in Rasch trees.* Talk presented at the 85^{th} Annual International Meeting of the Psychometric Society (online).

Conference talks and posters of students under my supervision

Hany, L. & Henninger, M. (2024, September). Machine learning methods for multilevel data: How does the level of the predictor impact variable selection and importance? Poster presented at the 53^{rd} Conference of the German Psychological Society, Vienna, Austria.

Radek, J., Sengewald, M.-A., Strobl, C., & Henninger, M. (2024, September). Integrating an effect size measure for differential item and differential step functioning in tree-based machine learning methods for polytomous data. Poster presented at the 53^{rd} Conference of the German Psychological Society, Vienna, Austria.

Bocklet, V. & Henninger, M. (2023, September). Required data settings for applying the Mantel-Haenszel effect size measure for differential item functioning. Poster presented at the 16^{th} Meeting of the Section of Methodology and Evaluation of the German Psychological Society, Konstanz, Germany.

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