

PAUL-CHRISTIAN BÜRKNER

GENERAL INFORMATION

<i>Date of Birth</i>	16 June 1991
<i>Place of Birth</i>	Marburg, Germany
<i>Work Address</i>	Vogelpothsweg 78, 44227 Dortmund, Germany
<i>Email</i>	paul.buerkner@gmail.com
<i>Website</i>	https://paul-buerkner.github.io/

KEY SCIENTIFIC METRICS

<i>Publications</i>	88 (peer-reviewed only)
<i>Funding</i>	950,000 € (third-party only)
<i>Citations</i>	12,541 (source: GoogleScholar)
<i>h-index</i>	30 (source: GoogleScholar)

WORK EXPERIENCE

TU Dortmund University	<i>since 2023</i>	Full Professor for Computational Statistics Full Professor for Computational Statistics, Department of Statistics, TU Dortmund University, Germany.
	<i>2020-2023</i>	Independent Junior Research Group Leader Independent Junior Research Group Leader for Bayesian Statistics at the Cluster of Excellence SimTech, University of Stuttgart, Germany.
Aalto University	<i>2019-2020</i>	Postdoctoral Researcher Research Post-Doc at the chair of Computational Probabilistic Modeling (Prof. Dr. Vehtari), Aalto University, Department of Computer Science, Finland.
	<i>2014-2019</i>	Research Associate and Lecturer Research associate at the chair of Statistics and Methods (Prof. Dr. Holling), University of Münster, Department of Psychology, Germany. Lecturer in Statistics I and II for the Bachelor's Degree Program in Psychology.
University of Münster		

HIGHER EDUCATION

PhD in Psychology	<i>2014-2017</i>	University of Münster Grade: Summa Cum Laude · Institute of Psychology Title: <i>Optimal Design and Bayesian Data Analysis</i> . Received multiple awards (see the Awards section).
	<i>2014-2017</i>	University of Hagen Grade: 1.3 · Institute of Mathematics Thesis: <i>On the Statistics of Curie-Weiss-Distributed Random Variables</i> .
Master of Mathematics		
Master of Psychology	<i>2013-2014</i>	University of Münster Grade: 1.1 · Institute of Psychology Thesis: <i>Adaptive Designs for Logistic Models with False Answers</i> .

<i>Bachelor of Mathematics</i>	2011-2014	University of Hagen	Grade: 1.7 · Institute of Mathematics Thesis: <i>A Hull Operator for Complex Matroids.</i>
<i>Bachelor of Psychology</i>	2010-2013	University of Münster	Grade: 1.2 · Institute of Psychology Thesis: <i>Testing for Publication Bias in Diagnostic Meta-Analysis: A Simulation Study.</i>

RESEARCH FUNDING

DFG	Bürkner P. C. (2022). Intuitive Joint Priors for Bayesian Multilevel Models. <i>Funder: German Research Foundation (DFG). 238,000 €.</i>
DFG	Bürkner P. C. (2022). Bayesian Distributional Latent Variable Models. <i>Funder: German Research Foundation (DFG). 238,000 €.</i>
DFG	Bürkner P. C. & Bulling A. (2022). Amortized Bayesian Inference for Multilevel Models. <i>Funder: German Research Foundation (DFG). 232,000 €.</i>
EXC SimTech	Guthke A. & Bürkner P. C. (2022). Data-Integrated Training of Surrogate Models for Uncertainty Quantification and Diagnostics of Complex Biological Systems. <i>Funder: Cluster of Excellence SimTech. 285,000 €.</i>
Cyber Valley	Bürkner P. C. (2021). Meta-Uncertainty in Bayesian Model Comparison. <i>Funder: Cyber Valley Research Fund. 242,000 €.</i>
EXC SimTech	Bürkner P. C. & Sedlmair M. (2021). Machine Learning for Bayesian Model Building. <i>Funder: Cluster of Excellence SimTech. 285,000 €.</i>
EXC SimTech	Bulling A. & Bürkner P. C. (2021). Bayesian Intent Prediction for Human-Machine Collaboration. <i>Funder: Cluster of Excellence SimTech. 175,000 €.</i>
ELLIS	Bulling A. Bürkner P. C., Kuchenbecker J. K., Pradel M., Schulte im Walde S., Staab S., Steinwart I., & Vu T. (2021). Stuttgart ELLIS Unit. <i>Funders: ELLIS Society and University of Stuttgart.</i>

AWARDS

SIPS	2020 · Mission award of the Society for Improving Psychological Science (SIPS) for brms.
SIPS	2020 · Commendation award of the Society for Improving Psychological Science (SIPS) for brms.
University of Münster	2018 · Award for the best dissertation 2017-2018 in Psychology at the University of Münster.
German Society for Psychology	2017 · Gustav A. Lienert Award for the best methodological dissertation in Psychology awarded by the German Society for Psychology (DGPs).
University of Münster	2017 · Award for the best lecture at the Institute of Psychology in Münster.
German National Acad. Foundation	2014 · Scholarship of the German National Academic Foundation (Studienstiftung des deutschen Volkes).

OPEN-SOURCE SOFTWARE

<i>brms</i>	Lead author · An R package for Bayesian regression models using Stan. Received multiple awards (see the Awards section).
<i>posterior</i>	Lead author · An R package for working with posterior distributions.
<i>thurstonianIRT</i>	Lead author · An R Package for fitting Thurstonian IRT models.
<i>BayesFlow</i>	Author · A Python library for simulation-based Bayesian inference.
<i>posteriordb</i>	Author · A Posterior Database for Bayesian Inference.
<i>loo</i>	Author · An R package for approximate leave-one-out cross-validation.
<i>ggsimplex</i>	Author · An R package for simplex visualizations with ggplot2.
<i>bayesim</i>	Author · An R package for simulations with Bayesian models.
<i>bayehear</i>	Author · An R package for metrics to evaluate Bayesian models.
<i>bayesfam</i>	Author · An R package for custom brms families.
<i>bayesian</i>	Author · An R package to interface brms and tidymodels.
<i>rstan</i>	Contributor · An R Interface to Stan.
<i>bayesplot</i>	Contributor · An R package for visualizing Bayesian models.
<i>projpred</i>	Contributor · An R package for projection predictive variable selection.
<i>emmeans</i>	Contributor · An R package for estimating marginal means.

SELECTED PROFESSORSHIP CALLS

<i>Full Professorship</i>	2022 · Call for the Full Professorship (W3) in Computational Statistics, Department of Statistics, TU Dortmund University, Germany. Accepted.
<i>Full Professorship</i>	2022 · Call for the Full Professorship (W3) in Data Analytics and Computational Statistics, Department of Computer Science, University of Konstanz, Germany.

SELECTED SCIENTIFIC INVOLVEMENT

<i>Organizer</i>	2022 · Organizer of the 1st International SimTech Summer School, University of Stuttgart. Co-Organizers: Benjamin Unger and Kristyna Pluhackova.
<i>Reviewer</i>	since 2022 · Reviewer for major funding agencies. <i>Selection:</i> German Research Foundation (DFG).
<i>Faculty Member</i>	since 2021 · Faculty Member of the International Max Planck Research School for Intelligent Systems (IMPRS-IS; https://imprs.is.mpg.de/).
<i>Member</i>	since 2021 · Member of Cyber-Valley (https://cyber-valley.de/en).
<i>Member</i>	since 2021 · Member of the ELLIS Society (https://ellis.eu/).
<i>Founding Member</i>	since 2021 · Founding member of the Stuttgart ELLIS Unit (https://ellis.eu/units/stuttgart).
<i>Member</i>	since 2018 · Member of the Stan Development Team (https://mc-stan.org/).
<i>Consultant</i>	since 2018 · Academic consultant in industry. Selection: Bayer (2018), Novartis (since 2021), Axem (since 2022).
<i>Editor</i>	2018 – 2020 · Associate editor of Biostatistics.
<i>Reviewer</i>	since 2014 · Reviewer for international journals and conferences. <i>Selection:</i> Bayesian Analysis, Behavior Research Methods, Biometrical Journal, Journal of Machine Learning Research, Journal of Probability and Statistics, Journal of Statistical Software, Journal of the Royal Statistical Society, Nature, Nature Ecology & Evolution, Nature Human Behaviour, Philosophical Transactions, Psychological Methods, Psychometrika, Psychonomic Bulletin and Review, Statistics in Medicine.

SELECTED TALKS

Oxford University	2023 · Oxford · Keynote Title: <i>Probabilistic Modeling for Ecology</i> .
Princeton University	2023 · online · Invited Talk Title: <i>An Introduction to Bayesian Statistics</i> .
DagStat Conference	2022 · Hamburg · Contributed Talk Title: <i>The sparse polynomial chaos expansion: a fully Bayesian approach with joint priors on the coefficients and global selection of terms</i> .
Psychoco Conference	2021 · online · Keynote Title: <i>Bayesian Item Response Models</i> .
Oslo UseR Group	2021 · online · Invited Talk Title: <i>Bayesian multilevel modeling with brms</i> .
Oxford University	2020 · online · Invited Talk Title: <i>Bayesian regression modeling</i> .
Turku University	2020 · online · Invited Talk Title: <i>Bayesian multilevel modeling with brms</i> .
TU Dortmund University	2020 · online · Invited Talk Title: <i>Bayesian multilevel modeling with brms</i> .
Bayer	2020 · online · Invited Talk Title: <i>Bayesian multilevel modeling with brms</i> .
Stat. Methods for Linguistics	2019 · Potsdam · Keynote Title: <i>A Principled Bayesian Workflow for Data Analysis</i> .
University of Duisburg-Essen	2019 · Essen · Invited Talk Title: <i>A Principled Bayesian Workflow for Data Analysis</i> .
DGPs Conference	2019 · Kiel · Contributed Talk Title: <i>Improving Convergence Diagnostics for MCMC Sampling Algorithms</i> .
Stan Conference	2019 · Cambridge · Contributed Talk Title: <i>Leave-Future-Out Cross-Validation for Bayesian Time-Series Models</i> .
Multilevel Conference	2019 · Utrecht · Keynote Title: <i>Bayesian Multilevel Modeling with brms and Stan</i> .
DagStat	2019 · Munich · Contributed Talk Title: <i>Leave-Future-Out Cross-Validation for Bayesian Time-Series Models</i> .
Stan Conference	2018 · Helsinki · Contributed Talk Title: <i>Custom Response Distributions in brms</i> .
EAM Conference	2018 · Jena · Contributed Talk Title: <i>Handling Ordinal Predictors in Regression Models via Monotonic Effects</i> .
Bayes@Lund	2018 · Lund · Keynote Title: <i>Why Not to be Afraid of Priors</i> .
DGPs Conference	2017 · Tübingen · Keynote Title: <i>Optimal Design and Bayesian Data Analysis</i> .
eRum Conference	2016 · Poznan · Contributed Talk Title: <i>brms: An R Package for Bayesian Multilevel Models using Stan</i> .
Int. Workshop on Simulation	2015 · Vienna · Contributed Talk Title: <i>Adaptive Designs for Logistic Models with False Answers</i> .
DGPs Conference	2015 · Jena · Contributed Talk Title: <i>Optimal Design of Non-Parametric Two-Sample Tests</i> .

SELECTED LECTURES

Simulation Science	2022 · University of Stuttgart Title: <i>Bayesian Statistics and Probabilistic Machine Learning</i> . No evaluation available.
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<i>Simulation Science</i>	2021 · University of Stuttgart Title: <i>ML Sessions: Bayesian Statistics</i> . No evaluation available.
<i>Computer Science</i>	2019 · Aalto University Title: <i>Bayesian Data Analysis</i> . No evaluation available. Contributed as TA.
<i>Psychology</i>	2014-2019 · University of Münster · 5 times Title: <i>Descriptive Statistics and Probability Theory</i> . Average Evaluation: 12.6 points (15 point <i>abitur</i> scale). Award for the best lecture in the winter semester 2016/2017.
<i>Psychology</i>	2015-2018 · University of Münster · 4 times Title: <i>Inferential Statistics</i> . Average Evaluation: 12.1 points (15 point <i>abitur</i> scale).

SELECTED SEMINARS

<i>Simulation Science</i>	2021-2022 · University of Stuttgart · 2 times Title: <i>Advanced Topics in Simulation Science</i> . No evaluation available.
<i>Psychology</i>	2018 · University of Münster · 2 times Title: <i>Advanced Statistics II: Structural Equation Modeling and Bayesian Statistics</i> . Average Evaluation: 10.9 points (15 point <i>abitur</i> scale).

SELECTED WORKSHOPS

<i>Oxford University</i>	2023 · Department of Biology · 1 day Title: <i>Bayesian modeling for biologists using brms</i> .
<i>University of Tübingen</i>	2023 · Center of Methods · 2 days Title: <i>Bayesian modeling with the brms package</i> .
<i>TU Dortmund University</i>	2022 · Department of Statistics · 2 days Title: <i>Bayesian Statistics</i> .
<i>University of Salzburg</i>	2022 · Department of Psychology · 2 days Title: <i>Introduction to Bayesian Data Analysis</i> .
<i>Oxford University</i>	2021 · Department of Zoology · 4 days Title: <i>Bayesian Regression Modelling for Biologists</i> .
<i>Research Cluster SMiP</i>	2020 · Mannheim · 2 days Title: <i>Introduction to Stan: A Probabilistic Programming Language for Bayesian Inference</i> .
<i>University of Aarhus</i>	2020 · Department of Economics and Business Economics · 1 day Title: <i>Bayesian Model and Variable Selection</i> .
<i>MPI for Human Development</i>	2019 · Göttingen · 1 day Title: <i>Bayesian Multilevel Modeling</i> .
<i>MPI for Emp. Aesthetics</i>	2019 · Frankfurt · 2 days Title: <i>Bayesian Multilevel Modeling</i> .
<i>Multilevel Conference</i>	2019 · Utrecht · 1 day Title: <i>Introduction to Bayesian Data Analysis</i> .
<i>DagStat Conference</i>	2019 · Munich · 1 day Title: <i>Bayesian Data Analysis using Stan</i> .
<i>University of Lausanne</i>	2018 · Department of Psychology · 2 days Title: <i>Introduction to Meta-Analysis</i> .
<i>University of Magdeburg</i>	2018 · Department of Psychology · 4 days Title: <i>Introducing Basic and Advanced Bayesian Modelling</i> .

University of Aarhus	2018 · 4 days Title: <i>Advanced Bayesian Statistical Modeling.</i>
ETH Zurich	2018 · 1 day Title: <i>Classical and Bayesian Multi-Level Models in R.</i>
University of Hamburg	2017 · Department of Psychology · 2 days Title: <i>Fitting Multi-Level Models in R.</i>
DPPD Conference	2017 · Munich · 1 day Title: <i>Bayesian Multi-Level Models in R with brms.</i>
University of Bern	2017 · Department of Psychology · 3 days Title: <i>Bayesian Multi-Level Models in R with brms.</i>
University of Münster	2017 · Department of Psychology · 3 days Title: <i>Introduction to Bayesian Inference.</i>
University Paris Decardes	2017 · 1 day Title: <i>Introduction to Meta-Analysis.</i>
DGPs Conference	2016 · Leipzig · 1 day Title: <i>Bayesian Multilevel Models in R using the Package brms.</i>

CURRENT PHD STUDENTS

TU Dortmund University	since 2022 · Florence Bockting · Statistics Topic: <i>Simulation-Based Prior Distributions for Bayesian models.</i>
TU Dortmund University	since 2022 · Luna Fazio · Statistics Topic: <i>Bayesian Distributional Latent Variable Models.</i>
University of Tübingen	since 2022 · Soham Mukherjee Topic: <i>Probabilistic Models for scRNA Sequencing Data.</i> Co-Advisor: Prof. Manfred Claassen
University of Stuttgart	since 2022 · Philipp Reiser · Computer Science Topic: <i>Data-Integrated Training of Surrogate Models for Uncertainty Quantification and Diagnostics of Complex Biological Systems Models.</i> Co-Advisor: Dr. Anneli Guthke
University of Stuttgart	since 2021 · Maximilian Scholz · Computer Science Topic: <i>Machine Learning for Bayesian Model Building.</i>
University of Stuttgart	since 2021 · Javier Aguilar · Computer Science Topic: <i>Intuitive Joint Priors for Bayesian Multilevel Models.</i>
University of Stuttgart	since 2021 · Marvin Schmitt · Computer Science Topic: <i>Meta-Uncertainty in Bayesian Model Comparison.</i>
Aalto University	since 2021 · Noa Kallioinen · Computer Science Topic: <i>Sensitivity Diagnostics in a Bayesian Workflow.</i> Primary Advisor: Prof. Aki Vehtari
Aalto University	since 2020 · Teemu Säilynoja · Computer Science Topic: <i>Convergence and Goodness-of-Fit Diagnostics in a Bayesian Workflow.</i> Primary Advisor: Prof. Aki Vehtari
Aalto University	since 2019 · Alejandro Catalonia · Computer Science Topic: <i>Robust Bayesian Methods for Model and Variable Selection.</i> Primary Advisor: Prof. Aki Vehtari

GRADUATED PHD STUDENTS

University of
Münster

2018 – 2021 · Niklas Schulte · Psychology
Topic: *Statistical Properties of Forced-Choice Questionnaires in Applicant Personality Measurements.*
Primary Advisor: Prof. Heinz Holling

CURRENT POSTDOCTORAL RESEARCHERS

TU Dortmund
University

since 2023 · Daniel Habermann
Topic: *Amortized Bayesian Inference for Multilevel Models.*

University of
Stuttgart

since 2022 · Lei Shi
Topic: *Bayesian Intent Prediction for Human-Machine Collaboration.*
Co-Advisor: Prof. Andreas Bulling

University of
Heidelberg

since 2021 · Stefan Radev
Topic: *Amortized Bayesian Inference.*
Co-Advisor: Prof. Ullrich Köthe

ALL PUBLICATIONS

In Review

109) **Bürkner P. C.**, Scholz M., & Radev S. T. (in review). Some models are useful, but how do we know which ones? Towards a unified Bayesian model taxonomy. *ArXiv preprint*.

108) Scholz M., & **Bürkner P. C.** (in review). Prediction can be safely used as a proxy for explanation in causally consistent Bayesian generalized linear models. *ArXiv preprint*.

107) Schmitt, M., **Bürkner P. C.**, Köthe U., & Radev S. T. (in review). Detecting Model Misspecification in Amortized Bayesian Inference with Neural Networks. *ArXiv preprint*.

106) Modrák M., Moon A. H., Kim S., **Bürkner P. C.**, Huurre N., Faltejsková K., Gelman A., & Vehtari A. (in review). Simulation-Based Calibration Checking for Bayesian Computation: The Choice of Test Quantities Shapes Sensitivity. *ArXiv preprint*.

105) Catalina A., **Bürkner P. C.**, & Vehtari A. (in review). Latent space projection predictive inference. *ArXiv preprint*.

104) Kallioinen N., Paananen T., **Bürkner P. C.**, & Vehtari A. (in review). Detecting and diagnosing prior and likelihood sensitivity with power-scaling. *ArXiv preprint*.

103) Elsemüller L., Schnuerch M., **Bürkner P. C.**, & Radev S. T. (in review). A Deep Learning Method for Comparing Bayesian Hierarchical Models. *ArXiv preprint*.

102) Schumacher L., **Bürkner P. C.**, Voss A., Köthe U., & Radev S. T. (in review). Neural Superstatistics: A Bayesian Method for Estimating Dynamic Models of Cognition. *ArXiv preprint*.

101) Lingel, H., **Bürkner P. C.**, Melchers, K. G., & Schulte, N. (in review). Measuring Personality When Stakes Are High: Are Graded Paired Comparisons a More Reliable Alternative to Traditional Forced-Choice Methods? *PsyArXiv preprint*.

100) Schulte, N., Kaup, L., Bürkner, P. C., & Holling, H. (in review). The Fakeability of Personality Measurement with Graded Paired Comparisons. *PsyArXiv preprint*.

- 99) Kolczyńska M., **Bürkner P. C.**, Kennedy L., & Vehtari A. (in review). Trust in state institutions in Europe, 1989-2019. *SocArXiv preprint*.
- 98) Bolzenkötter, T., **Bürkner P. C.**, Zetsche, U., & Schulze, L. (in review). Assessing the short-term effects of detached mindfulness on repetitive negative thinking and affect: A randomized controlled trial in daily life. *PsyArXiv preprint*.
- 2023 97) **Bürkner P. C.**, Kröker I., Oladyshkin S., & Nowak W. (2023). A fully Bayesian sparse polynomial chaos expansion approach with joint priors on the coefficients and global selection of terms. *Journal of Computational Physics*.
- 96) Aguilar J. E. & **Bürkner P. C.** (2023). Intuitive Joint Priors for Bayesian Linear Multilevel Models: The R2D2M2 prior. *Electronic Journal of Statistics*.
- 95) Schmitt, M., Radev, S. T., & **Bürkner P. C.** (2023). Meta-Uncertainty in Bayesian Model Comparison. *Artificial Intelligence and Statistics (AISTATS) Conference Proceedings*.
- 94) Radev S. T., Schmitt M., Pratz V., Picchini U., Köthe U., & **Bürkner P. C.** (2023). JANA: Jointly Amortized Neural Approximation of Complex Bayesian Models. *Uncertainty in Artificial Intelligence (UAI) Conference Proceedings*.
- 93) Riutort-Mayol G., **Bürkner P. C.**, Andersen M. R., Solin A., & Vehtari A. (2023). Practical Hilbert space approximate Bayesian Gaussian processes for probabilistic programming. *Statistics and Computing*. doi:10.1007/s11222-022-10167-2
- 92) Mikkola P., Martin O., Chandramouli S., ..., **Bürkner P. C.**, & Klami A. (2023). Prior knowledge elicitation: The past, present, and future. *Bayesian Analysis*.
- 91) Perini L., **Bürkner P. C.**, & Klami A. (2023). Estimating the Contamination Factor's Distribution in Unsupervised Anomaly Detection. *Proceedings of the International Conference on Machine Learning (ICML)*.
- 90) Rodriguez, J. E., Williams, D. R., & **Bürkner P. C.** (2023). Heterogeneous Heterogeneity by Default: Testing Categorical Moderators in Random-effects Meta-Analysis. *British Journal of Mathematical and Statistical Psychology*. doi:10.1111/bmsp.12299
- 89) Kolczyńska M. & **Bürkner P. C.** (2023). Modeling public opinion over time: A simulation study of latent trend models. *Journal of Survey Statistics and Methodology*.
- 88) Arslan, R. C., Blake, K., Botzet, L., **Bürkner, P. C.**, DeBruine, L. M., Fiers, T., ..., & Stern, J. (2023). Not within spitting distance: salivary immunoassays of estradiol have subpar validity for cycle phase. *Psychoneuroendocrinology*. doi:10.1016/j.psyneuen.2022.105994
- 87) Zhang, J., **Bürkner, P. C.**, Kiesel A., & Dignath D. (2023). How Emotional Stimuli Modulate Cognitive Control: A Meta-Analytic Review of Studies With Conflict Tasks. *Psychological Bulletin*.
- 86) Zetsche, U., **Bürkner P. C.**, Bohländer, J., Renneberg, B., Röpke, S., & Schulze, L. (2023). Daily affect regulation in borderline personality disorder and major depression. *Clinical Psychological Science*.
- 85) Danböck, S. K., Franke, L. K., Miedl, S. F., Liedlgruber, M., **Bürkner P. C.**, & Wilhelm, F. H. (2023). Aversive-Audiovisual and Painful-Electrical Stimulation Cause Peritraumatic Dissociation: A Functional Magnetic Resonance Imaging Study. *Behaviour Research and Therapy*. doi:10.1016/j.brat.2023.104289

2022

- 84) Ewendt, F., Schmitt, M., Kluttig, A., Kühn, J., ..., **Bürkner P. C.**, Föller, M., & Stangl, G. I. (2023). Association between vitamin D status and eryptosis – results from the German National Cohort Study. *Annals of Hematology*. doi:10.1007/s00277-023-05239-w
- 83) **Bürkner P. C.** (2022). On the information obtainable from comparative judgments. *Psychometrika*. doi:10.1007/s11336-022-09843-z
- 82) Säilynoja, T., **Bürkner P. C.**, & Vehtari A. (2022). Graphical Test for Discrete Uniformity and its Applications in Goodness of Fit Evaluation and Multiple Sample Comparison. *Statistics and Computing*.
- 81) Catalina A., **Bürkner P. C.**, & Vehtari A. (2022). Projection Predictive Inference for Generalized Linear and Additive Multilevel Models. *Artificial Intelligence and Statistics (AISTATS) Conference Proceedings*.
- 80) Pavone, F., Piironen, J., **Bürkner P. C.**, & Vehtari A. (2022). Using reference models in variable selection. *Computational Statistics*.
- 79) Schad D. J., Nicenboim B., **Bürkner P. C.**, Betancourt M., & Vasishth S. (2022). Workflow Techniques for the Robust Use of Bayes Factors. *Psychological Methods*.
- 78) Heck, D., Boehm, U., Böing-Messing, F., **Bürkner P. C.**, ..., Hoijtink, H. (2022). A Review of Applications of the Bayes Factor in Psychological Research. *Psychological Methods*.
- 77) Malén T., Karjalainen T., Isojärvi J., Vehtari A., **Bürkner P. C.**, ..., & Nummenmaa L. (2022). Age and sex dependent variability of type 2 dopamine receptors in the human brain: A large-scale PET cohort. *NeuroImage*.
- 76) Franke, L. K., Miedl, S. F., Danböck, S. K., Lohse, J., Liedlgruber, M., **Bürkner P. C.**, Pletzer B., & Wilhelm, F. H. (2022). Estradiol during (analogue-)trauma: risk- or protective factor for intrusive re-experiencing? *Psychoneuroendocrinology*. doi:10.1016/j.psyneuen.2022.105819
- 75) Pluhackova K., Schittny V., **Bürkner P. C.**, Siligan C., & Horner A. (2022). Multiple Pore Lining Residues modulate Water Permeability of GlpF. *Protein Science*.
- 74) George J. P., **Bürkner P. C.**, Sanders T., Neumann M., Cammalleri C., Vogt J., & Lang M. (2022). Long-term forest monitoring unravels constant mortality rise in European forests. *Plant Biology*.
- 73) Seaton F. M., Robinson D. A., Monteith D., Lebron I., **Bürkner P. C.**, Tomlinson S., Emmett B. A., & Smart S. M. (2022). Fifty years of reduction in sulphur deposition drives recovery in soil pH and plant communities. *Journal of Ecology*.
- 72) Jordon M., Smith P., Long P., **Bürkner P. C.**, Petrokofsky G. & Willis K. (2022). Can Regenerative Agriculture increase national soil carbon stocks? Simulated country-scale adoption of reduced tillage, cover cropping, and ley-arable integration using RothC-26.3. *Science of the Total Environment*. doi:10.1016/j.scitotenv.2022.153955
- 71) Jordon M., Willis K., **Bürkner P. C.**, & Petrokofsky G. (2022). Rotational grazing and multispecies herbal leys increase productivity in temperate pastoral systems – a meta-analysis. *Agriculture, Ecosystems & Environment*. doi:doi:10.1016/j.agee.2022.108075
- 70) Jordon M., Willis K., **Bürkner P. C.**, Haddaway N., Smith P., & Petrokofsky G. (2022). Temperate Regenerative Agriculture; a win-win for soil carbon and crop yield? *Environmental Research Letters*. doi:10.1088/1748-9326/ac8609

69) Nohe C., Hüffmeier J., **Bürkner P. C.**, Mazei J., Sondern D., Runte A., Sieber F., & Hertel G. (2022). Unethical Choice in Negotiations: A Meta-Analysis on Gender Differences and Their Moderators. *Organizational Behavior and Human Decision Processes*.

68) Teetzen, F., **Bürkner P. C.**, Gregersen, S., & Vincent-Höper, S. (2022). The Mediating Effects of Work Characteristics on the Relationship between Transformational Leadership and Employee Well-Being: A Meta-Analytic Investigation. *Journal of Environmental Research and Public Health*. doi:10.3390/ijerph19053133

67) Kołczyńska M. & **Bürkner P. C.** (2022). Political trust as a cause and consequence of democracy: Longitudinal analysis of European data. *SocArXiv preprint*.

2021

66) **Bürkner P. C.** (2021). Bayesian Item Response Modelling in R with brms and Stan. *Journal of Statistical Software*. 100(5). 1–54. doi:10.18637/jss.v100.i05

65) Vehtari A., Gelman A., Simpson D., Carpenter B., & **Bürkner P. C.** (2021). Rank-normalization, folding, and localization: An improved Rhat for assessing convergence of MCMC (with discussion). *Bayesian Analysis*. 16(2), 667–718. doi:10.1214/20-BA1221

64) Radev S., D'Alessandro M., Mertens U. K., Voss A., Köthe U., & **Bürkner P. C.** (2021). Amortized Bayesian Model Comparison with Evidential Deep Learning. *IEEE Transactions on Neural Networks and Learning Systems*. doi:10.1109/TNNLS.2021.3124052

63) Paananen T., Piironen, J., **Bürkner P. C.**, & Vehtari A. (2021). Implicitly Adaptive Importance Sampling. *Statistics and Computing*. 31(2), 1–19. doi:10.1007/s11222-020-09982-2

62) Williams, D. R., Rodriguez, J. E., & **Bürkner P. C.** (2021). Putting Variation into Variance: Modeling Between-Study Heterogeneity in Meta-Analysis. *PsyArXiv preprint*.

61) Driebe, J. C., Sidari, M., Dufner, M., von der Heiden, J. M., **Bürkner P. C.**, Penke, L., Zietsch B. P., & Arslan, R. C. (2021). Intelligence can be detected but is not found attractive in videos and live interactions. *Evolution and Human Behavior*.

60) Kołczyńska M. & **Bürkner P. C.** (2021). Marketplace of indicators: Inconsistencies between country trends of measures of governance. *Political Research Exchange*.

59) Modrák M., **Bürkner P. C.**, Sieger T., ..., Leos-Barajas V., Fiser K., & Hyánek T. (2021). Detailed disease progression of 213 patients hospitalized with Covid-19 in the Czech Republic: An exploratory analysis. *PLOS ONE*.

58) Franke, L. K., Rattel, J. A., Miedl, S. F., Danböck, S. K., Bürkner, P. C., & Wilhelm, F. H. (2021). Intrusive memories as conditioned responses to trauma cues: an empirically supported concept? *Behavior Research and Therapy*.

57) Dietel F., Möllmann A., **Bürkner P. C.**, Wilhelm S., & Buhlmann U. (2021) Interpretation bias across body dysmorphic, social anxiety and generalized anxiety disorder – a multilevel, diffusion model account. *Cognitive Therapy and Research*.

56) Stecker, J., **Bürkner P. C.**, Hellmann, J., Nestler, S., & Back, M. (2021). Prejudice at First Sight? First Impressions of Refugees are More Strongly Influenced by Targets' and Perceivers' Individual Characteristics Than by Sheer Group Affiliation. *Collabora: Psychology*.

55) Reynolds, J. & **Bürkner P. C.** (2021). Examining the Relationship Between Weapon Type and Relationship Type in American Homicides: A Bayesian Approach. *Homicide Studies*.

54) Kuck, N., Cafitz, L., Bürkner, P. C., Nosthoff-Horstmann, L., Wilhelm, S., & Buhlmann, U. (2021). Body dysmorphic disorder and self-esteem: A meta-analysis. *BMC Psychiatry*.

53) Hoppen L. M., Kuck N., **Bürkner P. C.**, Karin E., Wootton B. M., & Buhlmann, U. (2021). Low intensity technology-delivered cognitive behavioral therapy for obsessive-compulsive disorder: A meta-analysis. *BMC Psychiatry*.

52) Winter, B. & **Bürkner P. C.** (2021). Poisson regression for linguists: A tutorial introduction to modeling count data with brms. *Language and Linguistics Compass*. doi:10.1111/lnc3.12439

51) Nohr, L., **Bürkner P. C.**, Ruiz, A. L., Ferrer, J. E. S., Capponi, D., & Buhlmann, U. (2021). Social and cultural determinants of help-seeking in Cuba and Germany – A structural equation model approach. *PsyArXiv preprint*.

2020

50) **Bürkner P. C.**, Gabry J., & Vehtari A. (2020). Approximate leave-future-out cross-validation for time series models. *Journal of Statistical Computation and Simulation*. 90(14), 2499–2523. doi:10.1080/00949655.2020.1783262

49) Bürkner P. C., Gabry J., & Vehtari A. (2020). Efficient leave-one-out cross-validation for Bayesian non-factorized normal and Student-t models. *Computational Statistics*.

48) **Bürkner P. C.**, & Charpentier, E. (2020). Modeling Monotonic Effects of Ordinal Predictors in Regression Models. *British Journal of Mathematical and Statistical Psychology*. 73(3), 420–451. doi:10.1111/bmsp.12195

47) **Bürkner P. C.** (2020). Analysing Standard Progressive Matrices (SPM-LS) with Bayesian Item Response Models. *Journal of Intelligence*. 8(1), 1–18. doi:10.3390/jintelligence8010005

46) Hartmann M., Agiashvili G., **Bürkner P. C.**, & Klami A. (2020). Flexible Prior Elicitation via the Prior Predictive Distribution. *Uncertainty in Artificial Intelligence (UAI) Conference Proceedings*.

45) Radev S. T., Wieschen E. M., Voss A., & **Bürkner P. C.**, (2020). Amortized Bayesian Inference for Models of Cognition. *International Conference on Cognitive Modelling (ICCM) Conference Proceedings*.

44) Schulte N., Holling H., & **Bürkner P. C.** (2020). Can High-Dimensional Questionnaires Resolve the Ipsativity Issue of Forced-Choice Response Formats? *Educational and Psychological Measurement*.

43) Gelman A., Vehtari A., Simpson D., Margossian, C. C., Carpenter, B., Yao, Y., Kennedy L., Gabry J., **Bürkner P. C.**, & Modrák M. (2020). Bayesian Workflow. *ArXiv preprint*.

42) Paananen T., Catalina A., **Bürkner P. C.**, & Vehtari A. (2020). Group Heterogeneity Assessment for Multilevel Models. *ArXiv preprint*.

41) Trempler, I., **Bürkner P. C.**, El-Sourani N., Binder E., Reker P., Fink G. R., & Schubotz R. (2020). Impaired context-sensitive adjustment of behaviour in Parkinson's disease patients tested on and off medication: an fMRI study. *NeuroImage*. 212. 1–11. doi:10.1016/j.neuroimage.2020.116674

40) Landmeyer N. C., **Bürkner P. C.**, Wiendl H., Ruck T., Hartung H. P., Holling H., Meuth S. G., & Johnen A. (2020). Disease-modifying treatments and cognition in relapsing-remitting multiple sclerosis: A meta-analysis. *Neurology*. doi:10.1212/WNL.0000000000009522

39) Dietel F., Zache C., **Bürkner P. C.**, Schulte J., Möbius M., Bischof A., Wilhelm S., & Buhlmann U. (2020). Internet-based Interpretation Bias Modification for body dissatisfaction: A three-armed randomized controlled trial. *International Journal of Eating Disorders*. doi:10.1002/eat.23280

Deres T., **Bürkner P. C.**, Klauke B., & Buhlmann U. (2020). The Role of Stigma during the Course of Inpatient Psychotherapeutic Treatment in a German Sample. *Clinical Psychology and Psychotherapy*. doi:doi:10.1002/cpp.2423

38) Busch, L., Utesch, T., **Bürkner P. C.**, & Strauss, B. (2020). A Daily Diary of the Quantified Self – The Influence of Fitness App Usage on Psychological Well-Being, Body Listening and Body Trusting. *Journal of Sport & Exercise Psychology*. doi:10.1123/jsep.2019-0315

37) Williams D. R. & **Bürkner P. C.** (2020). Coding errors lead to unsupported conclusions: A critique of Hofmann et al. (2015). *Meta-Psychology*.

36) Hossiep R., Harnack, K., & **Bürkner P. C.** (2020). Goal setting in distributive and integrative negotiations: a meta-analysis. *PsyArXiv preprint*.

2019

35) **Bürkner P. C.**, Schulte N., & Holling H. (2019). On the Statistical and Practical Limitations of Thurstonian IRT Models. *Educational and Psychological Measurement*. 79(5), 827–854. doi:10.1177/0013164419832063

34) **Bürkner P. C.**, & Vuorre, M. (2019). Ordinal Regression Models in Psychology: A Tutorial. *Advances in Methods and Practices in Psychological Science*. 2(1), 77–101. doi:10.1177/2515245918823199

33) **Bürkner P. C.** (2019). thurstonianIRT: Thurstonian IRT Models in R. *Journal of Open Source Software*. doi:10.21105/joss.01662

32) Chen G., **Bürkner P. C.**, Taylor P. A., Li Z., Yin L., Glen D. R., Kinnison J. K., Cox R. W., & Pessoa L. (2019). One Model to Rule Them All: An Integrative Approach to Matrix-Based Analyses in Neuroimaging Connectomics. *Human Brain Mapping*. 1–19. doi:10.1002/hbm.24686.

31) Nalborczyk L., Batailler C., Loevenbruck H., Vilain A., & **Bürkner P. C.** (2019). An Introduction to Bayesian Multilevel Models using brms: A case study of gender effects on vowel variability in Standard Indonesian. *Journal of Speech, Language, and Hearing Research*. doi:10.1044/2018.JSLHR-S-18-0006

30) Zetsche, U., **Bürkner P. C.**, & Renneberg, B. (2019). Future expectations in clinical depression: biased or realistic? *Journal of Abnormal Psychology*. 128(7), 678–688. doi:10.1037/abn0000452

29) Nalborczyk, L., **Bürkner P. C.**, & Williams D. (2019). Pragmatism should not be a substitute for statistical literacy, a commentary on Albers, Kiers, and van Ravenzwaaij (2019). *Collabora: Psychology*. 5(1), 1–5. doi:10.1525/collabra.197

28) Beisemann M., Forthmann B., **Bürkner P. C.**, & Holling H. (2019). Validation of an Alternate Scoring for the Remote Associates Test. *The Journal of Creative Behavior*. 1–16. doi:10.1002/jocb.394

27) Forthmann, B., **Bürkner P. C.**, Benedek, M., Szardenings, C., & Holling, H. (2019). A New Perspective on the Multidimensionality of Divergent Thinking Tasks. *Frontiers in Psychology: Cognition*. 10, 1–9. doi:10.3389/fpsyg.2019.00985

26) Schuler, B. A., Binnewies, C., & **Bürkner P. C.** (2019). The Relationship Between Job Crafting, Work Engagement, and Performance: A Meta-Analysis. *PsyArXiv preprint*.

2018

25) **Bürkner P. C.** (2018). Advanced Bayesian Multilevel Modeling with the R Package brms. *The R Journal*. 10(1), 395–411. doi:10.32614/RJ-2018-017

- 24) **Bürkner P. C.**, Schwabe R., & Holling H. (2018). Optimal Designs for the Generalized Partial Credit Model. *British Journal of Mathematical and Statistical Psychology*. 72(2), 1–23. doi:10.1111/bmsp.12148
- 23) Johnen A., **Bürkner P. C.**, Landmeyer N. C., ..., Salmen A. (2018). Can we predict cognitive decline after initial diagnosis of multiple sclerosis? – Results from the German National early MS cohort (KKNMS). *Journal of Neurology*. 1–12. doi:10.1007/s00415-018-9142-y
- 22) Quante L., Kluger S., **Bürkner P. C.**, Ekman M., & Schubotz R. (2018). Graph measures in task-based fMRI: functional integration during read-out of visual and auditory information. *PLOS ONE*. 13(11), 1–18. doi:10.1371/journal.pone.0207119
- 21) Zetsche U., **Bürkner P. C.**, & Schulze L. (2018). Repetitive negative thinking and cognitive control: A meta-analysis. *Clinical Psychology Review*. 64, 56–65. doi:10.1016/j.cpr.2018.06.001
- 20) Rathgeber M., **Bürkner P. C.**, Schiller E. M., & Holling H. (2018). The Efficacy of Emotionally Focused Therapy and Behavioral Couples Therapy: A Meta-Analysis. *Journal of Marital and Family Therapy*. 1–17. doi:10.1111/jmft.12336
- 19) Schneider I., Kugel H., Redlich R., Grotegerd D., Bürger C., **Bürkner P. C.**, Opel N., Dohm K., Zaremba D., Meinert S., Schröder N., Straßburg A. M., Schwarte K., Schettler C., Ambree O., Rust S., Domschke K., Arolt V., Heindel W., Baune B., Zhang W., Dannlowski U., and Hohoff C. (2018). Association of serotonin transporter gene AluB methylation with major depression, amygdala responsiveness, 5-HTTLPR/rs25531 polymorphism, and stress. *Neuropsychopharmacology*. 1–9. doi:10.1038/npp.2017.273
- 18) Reinhold M., **Bürkner P. C.**, Holling H. (2018). Effects of Expressive Writing on Depressive Symptoms – A Meta-Analysis. *Clinical Psychology: Science and Practice*. 25(1), 1–13. doi:10.1111/cpsp.12224
- 17) Zhoua T., Popescu S. C., Lawing A. M., Eriksson M., Strambu B., **Bürkner P. C.** (2018). Bayesian and classical machine learning methods: A comparison for tree species classification with LiDAR waveform signatures. *Remote Sensing*. 10(1), 1–27. doi:10.3390/rs10010039
- 16) Schulze L., **Bürkner P. C.**, Bohländer J., & Zetsche U. (2018). Cognitive control and daily affect regulation in major depression and borderline personality disorder: protocol for an experimental ambulatory assessment study in Berlin, Germany. *BMJ Open*. doi:10.1136/bmjopen-2018-022694
- 15) Arslan R. C., Willführ K. P., Frans E. M., Verweij K. J. H., **Bürkner P. C.**, Myrskylä M., Volland E., Almqvist C., Brendan P., Zietsch B. P., & Penke L. (2018). Relaxed selection and mutation accumulation are best studied empirically: Reply to a comment by Woodley et al. *Proceedings of the Royal Society B*. 285(1873). 1–3. doi:10.1098/rspb.2018.0092
- 14) Williams D. R., Philippe R., & **Bürkner P. C.** (2018). Bayesian Meta-Analysis with Weakly Informative Prior Distributions. *PsyArXiv preprint*.
- 13) Fleischer C., Doeblér P., **Bürkner P. C.** & Holling H. (2018). Adventure therapy effects on self-concept – A meta-analysis. *PsyArXiv preprint*.
- 2017 12) **Bürkner P. C.** (2017). brms: An R Package for Bayesian Multilevel Models using Stan. *Journal of Statistical Software*. 80(1), 1–28. doi:10.18637/jss.v080.i01
- 11) **Bürkner P. C.**, Williams D. R., Simmons T. C., & Woolley J. D. (2017). Intranasal oxytocin may improve high-level social cognition in schizophrenia, but not social cognition or neurocognition in general: a multi-level Bayesian meta-analysis. *Schizophrenia Bulletin*. 43(6), 1291–1303. doi:10.1093/schbul/sbx053

- 10) Bürkner P. C., Bittner N., Holling H., & Buhlmann U. (2017). D-Cycloserine Augmentation of Behavior Therapy for Anxiety and Obsessive-Compulsive Disorders: A Meta-Analysis. *PLOS ONE*. 12(3), 1–19. doi:10.1371/journal.pone.0173660
- 9) Carlsson R., Schimmack U., Williams D. R., & **Bürkner P. C.** (2017). Bayes factors from pooled data are no substitute for (Bayesian) meta-analysis. *Psychological Science*. 28(11), 1694–1697. doi:10.1177/0956797616684682
- 8) Arslan R. C., Willführ K. P., Frans E. M., Verweij K. J. H., **Bürkner P. C.**, Myrskylä M., Volland E., Almqvist C., Brendan P., Zietsch B. P., & Penke L. (2017). Older fathers' children have lower evolutionary fitness across four centuries and in four populations. *Proceedings of the Royal Society B*. 284(1862), 1–9. doi:10.1098/rspb.2017.1562
- 7) Johnen A., Landmeyer N. C., **Bürkner P. C.**, Wiendl H., Meutha S. G., & Holling H. (2017). Distinct cognitive impairments in different disease courses of multiple sclerosis - A systematic review and meta-analysis. *Neuroscience & Biobehavioral Reviews*. 83, 568–578. doi:10.1016/j.neubiorev.2017.09.005
- 6) Williams D. R. & **Bürkner P. C.** (2017). Effects of intranasal oxytocin on symptoms of schizophrenia: A multivariate Bayesian meta-analysis. *Psychoneuroendocrinology*. 75, 141–151. doi:10.1016/j.psyneuen.2016.10.013
- 5) Williams D. R. & **Bürkner P. C.** (2017). Data extraction and statistical errors: A quantitative critique of Gumley et al. (2014). *British Journal of Clinical Psychology*. 56(2), 208–211. doi:10.1111/bjc.12130
- 4) Williams D. R., Carlsson R., & **Bürkner P. C.** (2017). Between-litter variation in developmental studies of hormones and behavior: inflated false positives and diminished power. *Frontiers in Neuroendocrinology*. 47, 154–166. doi:10.1016/j.yfrne.2017.08.003
- 2016
- 3) **Bürkner P. C.**, Doeblen P., & Holling H. (2016). Optimal design of the Wilcoxon-Mann-Whitney-test. *Biometrical Journal*. 59(1), 25–40. doi:10.1002/bimj.201600022
- 2) Benda N., **Bürkner P. C.**, Freise F., Holling H., & Schwabe R. (2016). Adaptive Designs for Quantal Dose-Response Experiments with False Answers. *Journal of Statistical Theory and Practice*. 11(3), 361–374. doi:10.1080/15598608.2016.1213209
- 2014
- 1) **Bürkner P. C.** & Doeblen P. (2014). Testing for Publication Bias in Diagnostic Meta-Analysis: A Simulation Study. *Statistics in Medicine*. 33(18), 3061–3077. doi:10.1002/sim.6177

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