

# SONJA D. WINTER

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## EXPERIENCE

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<b>Educational, School &amp; Counseling Psychology, University of Missouri</b> <i>Assistant Professor</i>	August 2023 - current <i>Columbia, Missouri</i>
<b>Missouri Prevention Science Institute, University of Missouri</b> <i>Postdoctoral Fellow</i>	August 2021- July 2023 <i>Columbia, Missouri</i>
<b>Winter Statistics</b> <i>Consultant</i>	January 2014 - June 2016 <i>Amsterdam, the Netherlands</i>
<b>Methodology and Statistics, Utrecht University</b> <i>Researcher</i>	January 2014 - June 2016 <i>Utrecht, the Netherlands</i>

## EDUCATION

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<b>University of California, Merced</b> Ph.D., Psychological Sciences Area of Study: Quantitative Methods, Measurement, and Statistics Advisor: <a href="#">Associate Professor Sarah Depaoli</a> Dissertation: <i>Advanced Methods for Detecting Specification Issues in Bayesian Structural Equation Modeling.</i>	2016-2021
<b>Utrecht University, the Netherlands</b> M.Sc. (Cum Laude), Psychology	2011-2013
<b>Utrecht University, the Netherlands</b> B.Sc. (with honours), Psychology	2008-2011

## FELLOWSHIPS & AWARDS

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<b>Society of Multivariate Experimental Psychology (SMEP)</b> Dissertation Research Award	2021
<b>University of California, Merced</b> Will Shadish Graduate Student Fellowship (for research and teaching excellence) Psychological Sciences Outstanding Graduate Student Psychological Sciences Research Support Award Psychological Sciences William R. Shadish Award for Leadership and Service Psychological Sciences Research Dissemination Award Psychological Sciences Jennifer Mendiola Travel Award Psychological Sciences Summer Support Fellowship Psychological Sciences Graduate Group Recruitment Fellowship Graduate Student Association Travel Award	2020 2020-2021 2020 2019-2020 2018-2021 2018 2017-2021 2016 2018

## Journals

Article of the Year Award: *Communication Methods and Measures Journal*, for: 2015  
*Possible solution to publication bias through bayesian statistics, including proper null hypothesis testing.*

## PUBLICATIONS

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### Peer-Reviewed Articles

1. **Winter, S. D.**, & Depaoli, S. (2023). Illustrating the Value of Prior Predictive Checking for Bayesian Structural Equation Modeling. *Structural Equation Modeling: A Multidisciplinary Journal*. doi:10.1080/10705511.2022.2164286s
2. **Winter, S. D.**, & Depaoli, S. (2022). Detecting Prior-Data Disagreement in Bayesian Structural Equation Modeling. *Structural Equation Modeling: A Multidisciplinary Journal*. doi:10.1080/10705511.2022.2039066
3. **Winter, S. D.**, & Depaoli, S. (2022). Sensitivity of Bayesian Model Fit Indices to the Prior Specification of Latent Growth Models. *Structural Equation Modeling: A Multidisciplinary Journal* 29(5), 667-686. doi:10.1080/10705511.2022.2032078
4. **Winter, S. D.**, & Depaoli, S. (2022). Performance of Model Fit and Selection Indices for Bayesian Structural Equation Modeling with Missing Data. *Structural Equation Modeling: A Multidisciplinary Journal*, 29(4), 531-549. doi:10.1080/10705511.2021.2018656
5. van de Schoot, R., **Winter, S. D.**, Griffioen, E., Grimmelikhuijsen, S., Arts, I., Veen, D., Grandfield, E. M., & Tummers, L. G. (2021). The Use of Questionable Research Practices to Survive in Academia: Expert Elicitation, Prior-Data Conflicts, Bayes Factors for Replication Effects, and the Bayes Truth Serum. *Frontiers in Psychology: Quantitative Psychology & Measurement*, 12, 621547 doi:10.3389/fpsyg.2021.621547
6. Arroyo, A. C., **Winter, S. D.**, Depaoli, S., & Zawadzki, M. J. (2021). Illuminating Differences in The Psychological Predictors of Academic Performance for First- And Continuing-Generation Students. *Journal of Educational and Psychological Research*, 3(2), 234-246.
7. Depaoli, S., **Winter, S. D.**, & Visser, M. (2020). The Importance of Prior Sensitivity Analysis in Bayesian Statistics: Demonstrations using an Interactive Shiny App. *Frontiers in Psychology: Quantitative Psychology & Measurement*, 11, 3271. doi:10.3389/fpsyg.2020.608045
8. Smid, S. C., & **Winter, S. D.** (2020). Dangers of the Defaults: A Tutorial on the Impact of Default Priors when using Bayesian SEM with Small Samples. *Frontiers in Psychology: Quantitative Psychology & Measurement*, 11, 611963. doi:10.3389/fpsyg.2020.611963
9. **Winter, S. D.**, & Depaoli, S. (2020). An Illustration of Bayesian Approximate Measurement Invariance with Longitudinal Data and a Small Sample Size. *International Journal of Behavioral Development*, 44(4), 371-382. doi:10.1177/0165025419880610
10. Depaoli, S., **Winter, S. D.**, Lai, K., & Guerra-Peña, K. (2019). Implementing continuous non-normal skewed distributions in latent growth mixture modeling: An assessment of specification errors and class enumeration. *Multivariate Behavioral Research*, 54(6), 795-821. doi:10.1080/00273171.2019.1593813
11. Hoorn, J. F., & **Winter, S. D.** (2018). Here comes the bad news: Doctor robot taking over. *International Journal of Social Robotics*, 10, 519-535. doi:10.1007/s12369-017-0455-2
12. Tiemensma, J., Depaoli, S., **Winter, S. D.**, Felt, J. M., Rus, H., & Arroyo, A. C. (2018). The Performance of the IES-R for Latinos and non-Latinos: Assessing Measurement Invariance. *PLoS ONE*, 13(4), e0195229. doi:10.1371/journal.pone.0195229

13. van de Schoot, R., Sijbrandij, M., Depaoli, S., **Winter, S. D.**, & van Loey, N. (2018). Bayesian PTSD-Trajectory Analysis with Informed Priors Based on a Systematic Literature Search and Expert Elicitation. *Multivariate Behavioral Research*, 53(2), 267-291. doi:[10.1080/00273171.2017.1412293](https://doi.org/10.1080/00273171.2017.1412293)
14. **Winter, S. D.**, Depaoli, S., & Tiemensma, J. (2018). Assessing differences in how the CushingQoL is interpreted across countries: Comparing patients from the U.S. and the Netherlands. *Frontiers in Endocrinology*, 9, 368. doi:[10.3389/fendo.2018.00368](https://doi.org/10.3389/fendo.2018.00368)
15. van de Schoot, R., Sijbrandij, M., **Winter, S. D.**, Depaoli, S., & Vermunt, J. K. (2017). The GRoLTS-Checklist: Guidelines for reporting on latent trajectory studies. *Structural Equation Modeling: A Multidisciplinary Journal*, 24(3), 451-467. doi:[10.1080/10705511.2016.1247646](https://doi.org/10.1080/10705511.2016.1247646)
16. van de Schoot, R., **Winter, S. D.**, Ryan, O., Zondervan-Zwijnenburg, M. & Depaoli, S. (2017). A systematic review of Bayesian articles in psychology: The last 25 years. *Psychological Methods*, 22(2), 217-239. doi:[10.1037/met0000100](https://doi.org/10.1037/met0000100)
17. Konijn, E. A., van der Schoot, R., **Winter, S. D.**, & Ferguson, C. J. (2015). Possible solution to publication bias through Bayesian statistics, including proper null hypothesis testing. *Communication Methods and Measures*, 9(4), 280-302. doi:[10.1080/19312458.2015.1096332](https://doi.org/10.1080/19312458.2015.1096332)

### Book Chapters

1. Depaoli, S., Kaplan, D., & **Winter, S. D.** (2023). Foundations and extensions in Bayesian structural equation modeling. In Hoyle, R. (2nd Ed.) *Handbook of structural equation modeling*. New York, NY: The Guilford Press. [final manuscript accepted September 1, 2021]
2. van de Schoot, R., Griffioen, E., & **Winter, S. D.** (2021). Dealing with imperfect elicitation results. In Hanea, A.M., Nane, G.F., Bedford, T., French, S. (Eds.), *Expert Judgment in Risk and Decision Analysis*. Basel: Springer International Publishing.
3. van de Schoot, R., Veen, D., Smeets, L., **Winter, S. D.**, & Depaoli, S. (2020). A Tutorial on Using The Wambs Checklist to Avoid The Misuse of Bayesian Statistics. In R. van de Schoot & M. Miočević (Eds.), *Small Sample Size Solutions: A guide for applied researchers and practitioners* (pp. 30–49). London: Routledge. doi:[10.4324/9780429273872-4](https://doi.org/10.4324/9780429273872-4)

### Software

1. Depaoli, S., **Winter, S. D.**, & Visser, M. (2020). The Importance of Prior Sensitivity Analysis in Bayesian Statistics: Demonstrations using an Interactive Shiny App. [ucmquantpsych.shinyapps.io/sensitivityanalysis](https://ucmquantpsych.shinyapps.io/sensitivityanalysis).
2. Smid, S.C., & **Winter, S. D.** (2020). Shiny App: The Impact of Prior Distributions in a Bayesian Latent Growth Model. [utrecht-university.shinyapps.io/impact\\_of\\_prior\\_distributions](https://utrecht-university.shinyapps.io/impact_of_prior_distributions).
3. Behrens, L., **Winter, S. D.**, & van de Schoot, R. (2018). Shiny App: FBI: First Bayesian Inference. [utrecht-university.shinyapps.io/bayesian\\_estimation](https://utrecht-university.shinyapps.io/bayesian_estimation).

### PAPERS UNDER REVIEW

1. Bonifay W., **Winter, S. D.**, Skoblow, H., & Watts, A. (revise & resubmit). Good fit is not a Sufficient Indicator of Replication Success. [Invited contribution to special issue of *Assessment* on “Assessment, Measurement, and Registered Replication.”]
2. Depaoli, S., **Winter, S. D.**, & Liu, H. (revise & resubmit). Under-Fitting and Over-Fitting: The Performance of Bayesian Model Selection and Fit Indices in SEM. *Structural Equation Modeling: A Multidisciplinary Journal*.

3. Merkle, E., Ariyo, O., Garnier-Villareal, M., & **Winter, S. D.** (revise & resubmit). Opaque Prior Distributions in Bayesian SEM. *Methodology*.
4. Parmenter, J. G. & **Winter, S. D.** (accepted for publication). Inequity within the LGBTQ+ Community as a Distal Stressor: An Extension of Minority Stress Theory. *Psychology of Sexual Orientation and Gender Diversity*.

## PRESENTATIONS

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\* denotes presenter

### Conference Presentations

1. **Winter, S. D.\*** (2023, August). *Goodness-of-fit and Theory Corroboration Through Informative Prior Specifications*. In W. Bonifay (chair) *High Risk, High Reward: Methods for Rigorous Testing of Psychological Theories*. Talk presented at the American Psychological Association (APA) Convention, Washington, DC.
2. **Winter, S. D.\*** & Bonifay, W. (2023, April). *Prior Specification in Bayesian Estimation Affects a Model's Fitting Propensity*. Talk presented at the National Council on Measurement and Education (NCME) Conference, Chicago, IL.
3. **Winter, S. D.\***, Sinval, J., & Merkle, E. (2023, April). *Comparing Priors for Estimating Sparse Ordinal Indicators in Bayesian Factor Analyses*. Talk presented at the National Council on Measurement and Education (NCME) Conference, Chicago, IL.
4. Bonifay W.\*, **Winter, S. D.**, & Watts, A. (2023, January). *Better than good fit: Methods for more insightful measurement model evaluations*. Talk presented at the Hawaii International Conference on Education (HICE), Honolulu, Hawaii.
5. **Winter, S. D.\***, Bonifay, W., & Watts, A. (2022, July). *Bayesian prior specification and model fitting propensity*. Talk presented at the International Meeting of the Psychometric Society (IMPS), Bologna, Italy.
6. McCall, C\* & **Winter, S. D.\*** (2022, July). *Using intersectional research methods to examine intervention efficacy*. Roundtable Discussion presented at the Annual Conference of the International School Psychology Association (ISPA), Leuven, Belgium.
7. **Winter, S. D.\*** & Depaoli, S. (2022, April). *Detecting Misspecification in Latent Growth Models with Bayesian Fit Indices*. E-board presented at the National Council on Measurement and Education (NCME) Conference, San Diego, CA.
8. **Winter, S. D.\*** & Depaoli, S. (2021, July). *Detecting Misspecification in Latent Growth Models with Bayesian Fit Indices*. Talk presented at the International Meeting of the Psychometric Society (IMPS).
9. **Winter, S. D.\*** & Depaoli, S. (2021, May). *Classification and Estimation Accuracy of Growth Mixture Models with Class-Predicting Covariates: Frequentist and Bayesian Approaches*. Poster presented at the APS Virtual Convention.
10. Arroyo, A. C.\*, **Winter, S. D.**, Depaoli S., & Zawadski, M. (2019, May). *Psychosocial Traits and Academic Performance: First- and Continuing-generation College Students*. Poster presented at the 31st APS Annual Convention, Washington, DC.
11. Smid, S. D.\* & **Winter, S. D.** (2019, May). *The Impact of Default Priors in Bayesian SEM with Small Samples*. In R. van de Schoot (chair) *Risks of Default Priors in Bayesian Structural Equation Models with Small Samples and Two Approaches on How to Avoid Those Risks*. Talk presented at the 31st APS Annual Convention, Washington, DC.

12. **Winter, S. D.\*** & Smid, S. (2019, May). Demonstration of an Online Educational Application on Bayesian Default Priors. In R. van de Schoot (chair) *Risks of Default Priors in Bayesian Structural Equation Models with Small Samples and Two Approaches on How to Avoid Those Risks*. Talk presented at the 31st APS Annual Convention, Washington, DC.
13. **Winter, S. D.\*** & Lek, K. M. (2018, July). *Bayesian Approximate Measurement Invariance: For Those Times When You Have Too Little or Too Much Data*. Talk presented at VIII European Congress of Methodology, Jena, Germany.
14. **Winter, S. D.\*** & Depaoli S. (2018, May). *Measurement Invariance for Second-Order Latent Growth Models: Frequentist and Bayesian Approaches*. Poster presented at the 30th APS Annual Convention, San Francisco, CA.
15. **Winter, S. D.\*** & Depaoli S. (2017, March). *Bayesian Approximate Measurement Invariance As A Viable Alternative to Frequentist Methods*. Poster presented at The University of California, Merced Psychology Symposium, Merced, CA.

### Invited Presentations

1. **Winter, S. D.\*** (2022, October). *Returning meaning to 'good fit': Constraining the bifactor model via Bayesian prior specification*. Invited talk presented at the Quantitative Psychology Speaker Series at the University of California, Davis.
2. **Winter, S. D.\***, Bonifay, W., & Watts, A. (2022, September). *Prior Specification in Bayesian Estimation Affects a Model's Fitting Propensity*. Invited talk presented at the Quantitative Psychology seminar at the University of Missouri, Columbia, MO.
3. McCall, C\* & **Winter, S. D.\*** (2022, September). *Using intersectional research methods to examine intervention efficacy*. Invited roundtable Discussion presented at the Missouri Prevention Science Institute (MPSI) seminar.
4. **Winter, S. D.\*** (2022, April). *Assessing prior-data disagreement in Bayesian SEM*. Invited webinar presented at Young Statisticians Europe (YSE). A recorded version of this webinar can be found here: <https://www.youtube.com/watch?v=Cuwhzd-8z4k>
5. **Winter, S. D.\*** (2022, March). *Introduction to Bayesian Analysis*. Invited talk presented at the College of Education and Human Development Lunch Hour, University of Missouri, MO.
6. **Winter, S. D.\*** (2021, November). *Basic Bayes*. Invited talk presented at the Missouri Prevention Science Institute (MPSI) seminar.
7. **Winter, S. D.\*** (2021, October). *Exploring Three Methods for Detecting Prior-Data Disagreement in Bayesian SEM*. Invited talk presented at the Quantitative Psychology seminar at the University of Missouri, Columbia, MO.
8. **Winter, S. D.\*** (2017, April). *Bayesian Approximate Measurement Invariance for Second-Order Latent Growth Models*. Invited talk presented at The University of California, Merced, CA.
9. Depaoli, S.\* & **Winter, S. D.\*** (2016, November). *A Systematic Review of Bayesian Papers in Psychology: The Last 25 Years*. Invited talk presented at The University of California, Merced Quantitative Psychology Colloquium, Merced, CA.

### Invited Workshops

1. **Winter, S. D.\*** (2022, March). *Creating Dynamic Reports from your Shiny App*. Invited talk presented at R-Ladies St. Louis. A recorded version of this webinar can be found here: <https://www.youtube.com/watch?v=MvGastDzLJk>

2. **Winter, S. D.\***, and Smid, S. C.\* (2020, July). *Dangers of Default Priors*. Invited post-conference workshop presented at S4, Utrecht, the Netherlands. (Conference canceled)
3. **Winter S. D.\*** & Coburn, K.\* (2019, April). *Creating an Interactive Shiny App to Share Your Research Findings*. One-day workshop presented at The University of California, Merced, CA.  
doi:[10.17605/OSF.IO/69J37](https://doi.org/10.17605/OSF.IO/69J37).
4. **Winter S. D.\*** (2015, June). *Statistics 101*. Workshop presented at DevOps Days Amsterdam, the Netherlands.

## TEACHING EXPERIENCE

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### Instructor of Record

ESC PS 8082: Foundations of Educational & Psychological Measurement	<i>Fall 2023</i>
ESC PS 9710: Structural Equation Modeling	<i>Spring 2023</i>

### Guest Lectures

ESC PS 8850: Quantitative Foundations in Educational Research - Logistic Regression	<i>Fall 2023</i>
ESC PS 8655: Item Response Theory - Estimating Person Parameters	<i>Spring 2022</i>

PSY 202B: Advanced Psychological Statistics II - Introduction to <i>Mplus</i>	<i>Spring 2021</i>
PSY 202B: Advanced Psychological Statistics II - Multilevel modeling with <i>Mplus</i>	<i>Spring 2021</i>
PSY 010: Analysis of Psychological Data - One-Sample <i>t</i> -test	<i>Spring 2019</i>
PSY 010: Analysis of Psychological Data - One-way ANOVA	<i>Spring 2019</i>
PSY 010: Analysis of Psychological Data - Independent Samples <i>z</i> -test	<i>Fall 2017</i>

### Graduate Teaching Assistant

PSY 202B: Advanced Psychological Statistics II, graduate level Psychology course	<i>Spring 2021</i>
PSY 202A: Advanced Psychological Statistics I, graduate level Psychology course	<i>Fall 2019, 2020</i>
PSY 105: Advanced Research Methods in Psychology	<i>Spring 2017</i>
PSY 010: Analysis of Psychological Data	<i>Fall 2017, 2018, Spring 2019</i>
PSY 015: Research Methods in Psychology	<i>Fall 2016, Spring 2018, 2020</i>

### Laboratory Instructor

PSY 010L: Analysis of Psychological Data	<i>Fall 2017, 2018, Spring 2019</i>
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## SERVICE

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### International & National

Organizer, Symposium: Estimating PTSD Trajectories, Utrecht, The Netherlands	<i>2015</i>
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### University & Department

Statistical Consultant, Missouri Prevention Science Institute	<i>2021-2022</i>
Moderator, program Twitter account: <a href="https://twitter.com/UCM_QuantPsych">@UCM_QuantPsych</a> (300+ followers)	<i>2018-2021</i>
Mentor, GradEXCEL Peer Mentor Program, Graduate Division	<i>2019-2020</i>
Member, Graduate Student Survey Committee for Graduate Program Review	<i>2018</i>
Student Representative, Quantitative Psychology Open-Rank Job Search Committee	<i>2018</i>

**Ad Hoc Reviewer**

Journals *Psychological Methods, Structural Equation Modeling: A Multidisciplinary Journal, Behavior Research Methods, British Journal of Mathematical and Statistical Psychology, Educational and Psychological Measurement, European Journal of Psychological Assessment, Communications in Statistics - Simulation and Computation, AERA Open, The European Journal of Psychotraumatology* (special issue on Bayesian Statistics), *Journal of Media Psychology, Prevention Science, Frontiers in Psychology.*

**PROFESSIONAL DEVELOPMENT**


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Missouri Prevention Science Institute (Dr. Chynna McCall), Equitable Endeavor for Everyone	2021-2022
A Meeting of Methodologies: Advancing Methods Development, Application, and Teaching in Psychology, the Behavioural, and Social Sciences	2020
The Center for Engaged Teaching and Learning, UC Merced, three-part seminar on remote instruction	2020
Professional Seminar on Teaching, UC Merced, a semester-long course on evidence-based teaching strategies, developing a syllabus, and effective communication	2018
The Center for Engaged Teaching and Learning, UC Merced, Fundamentals for TAs in Higher Education Certificate	2018
Women in Analytics Conference, Facebook HQ, one of 300 attendees out of 1500 applicants	2018

**PROFESSIONAL AFFILIATIONS**


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American Psychological Association (APA)  
National Council on Measurement in Education (NCME)  
Psychometric Society  
Society for the Improvement of Psychological Sciences (SIPS)

**SKILLS**


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<b>Languages</b>	Dutch, English
<b>Software</b>	R, Mplus, BUGS/JAGS, Stan, HLM, SPSS, Git, Qualtrics
<b>Coding</b>	R, Python, HTML, css, $\LaTeX$ , Markdown
<b>Select Statistics</b>	Bayesian methods, Structural Equation Modeling, Item Response Theory, Multi-level Modeling, Measurement and Measurement Invariance, Finite Mixture Modeling, Longitudinal Data Analysis