Han Du, Ph.D.

Department of Psychology

University of California, Los Angeles

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RESEARCH INTERESTS

Bayesian methods and statistical computing

longitudinal data analysis and time series analysis

Study design and sample size planning

Meta-analysis

EDUCATION

Ph.D. in Quantitative Psychology   2018

University of Notre Dame

M.S. in Applied and Computational Mathematics and Statistics   2016

University of Notre Dame

B.A. in Psychology   2012

Beijing Normal University

ACADEMIC APPOINTMENTS

Assistant Professor   7/2017–Now

Department of Psychology

University of California, Los Angeles

EDITORIAL SERVICES

2019-	Consulting Editor, Behavior Research Methods
2020-	Consulting Editor, Cultural Diversity and Ethnic Minority Psychology
2020-	Guest Editor, Journal of Behavioral Data Science
2022-	Editorial board, Psychological Methods

PROFESSIONAL AFFILIATIONS

Society of Multivariate Experimental Psychology

American Educational Research Association

Association for Psychological Science

Psychometric Society

HONORS and AWARDS

Elected as a member of Society of Multivariate Experimental Psychology	2022
Association for Psychological Science (APS) Rising Star	
Association for Psychological Science	2022
Best Paper Award (*Handling Non-Normality in SEM*)	
International Society for Data Science and Analytics	2022
Psychology Department's Distinguished Faculty Teaching Awards	
University of California, Los Angeles	2021
Faculty Career Development Award	
University of California, Los Angeles	2020
Society of Multivariate Experimental Psychology (SMEP) Travel Award	
14th Annual SMEP Graduate Student Conference	2016
Notebaert Professional Development Award for top students	
University of Notre Dame	2016
Graduate Student Union Conference Presentation Grant	
University of Notre Dame	2015 – 2016

GRANT ACTIVITIES

UCLA Faculty Career Development Award (2020-2021)

Title: Facilitating Effective Educational, Social, and Behavioral Science Research in Real-World Settings: Developing Bayesian Methods for Handling Non-Random Missing Data

Role: PI

Amount: $5,000

Institute of Education Sciences from the U.S. Department of Education (PI: Craig Enders; 2019-2022)

Title: Model-based Multiple Imputation for Multilevel Data: Methodological Extensions and Software Enhancements

Role: Co-PI

Amount: $868,046

National Institute on Alcohol Abuse and Alcoholism (PI: Lara Ray; 2022-2023)

Title: Integrating findings across stages of medication development for AUD

Role: Co-I

Amount: $ 455,666

National Institute of Mental Health (PI: Anna Lau; 2022-2026)

Title: Project STRIVE (STudents RIsing above) - Offsetting the health and mental health costs of resilience

Role: Co-I

Amount: $ 3,516,748

William K. and Katherine W. Estes Fund from the Association for Psychological Science (PIs: Han Du and Xin Tong; 2022)

Title: Bayesian Longitudinal Data Modeling

Role: PI

Amount: $ 10,000

GRANTS TO MENTORED STUDENTS

2020 National Science Foundation (NSF) Graduate Research Fellowship (Awardee: Stefany Mena; three years within a five-year fellowship period)

Title: A Novel Permutation Method for Testing Changes in Multilevel Models

Role: Mentor

Graduate Summer Research Mentorship award, University of California, Los Angeles (Awardee: Stefany Mena; 06/18/2020-09/14/2020)

Title: A Permutation Method for Testing Changes in Multilevel Models

Role: Mentor

Graduate Summer Research Mentorship award, University of California, Los Angeles (Awardee: Sijia Huang; 06/18/2018-09/14/2018)

Title: Detecting Change in Growth Curve Models with Non-normal Data: Methods and Comparisons

Role: Mentor

PUBLICATIONS

* indicates student authors and postdoctoral researchers

*Haggerty, B. B., **Du, H.,** Kennedy, D. P., Karney, B. R., & Bradbury, T. N. (accepted). Stability and Change in Newlyweds' Social Networks Over the First Years of Marriage. *Journal of Family Psychology*.

Du, H., & Bentler, P.M. (accepted). 40-Year old unbiased distribution free estimator reliably improves SEM statistics for nonnormal data. *Structural Equation Modeling*.

*Grodin, E., *Donato S., **Du, H.,** *Green, R., Bujarski, S., & Ray, L. A. (2022). A meta-regression of trial features predicting the effects of alcohol use disorder pharmacotherapies on drinking outcomes in randomized clinical trials: A secondary data analysis. *Alcohol and Alcoholism*. Advance online publication.

Du, H., *Alacam, E., *Mena, S., & Keller, B. T. (2022). Compatibility in imputation specification. *Behavior Research Methods*, 1-19. Advance online publication

Du, H., Jiang, G., & Ke, Z. (2022). Bootstrap-based between-study heterogeneity tests in meta-analysis. *Multivariate Behavioral Research*, 1–20. Advance online publication.

Du, H., Bentler, P.M., & Rosseel, Y. (2022). Distributionally-weighted least squares in growth curve modeling. *Structural Equation Modeling, 29*(1), 1-22.

Du, H., & Enders, C. K., Keller, B. T., Bradbury, T. N., & Karney, B. R. (2022). A Bayesian latent variable selection model for nonignorable missingness. *Multivariate Behavioral Research, 57*(2-3), 478-512.

Greenfield, P.M., Brown, G., & **Du, H**. (2021). Shifts in ecology, behavior, values, and relationships during the coronavirus pandemic: Survival threat, subsistence activities, conservation of resources, and interdependent families. *Current Research in Ecological and Social Psychology, 2, 100017,* 1-13.

*Green, R., **Du, H.,** Grodin, E. N., Nieto, S. J., Bujarski, S., Roche, D. J., & Ray, L. A. (2021). A meta-regression of methodological features predicting the effects of pharmacotherapies on subjective response to alcohol. *Alcoholism: Clinical and Experimental Research, 45*(7), 1336–1347.

Reise, S.P., **Du, H**., *Wong, E., *Hubbard, A., & Haviland, M. (2021). The Log Logistic item response theory model and the measurement of non-cognitive constructs. *Psychometrika, 86*(3), 800–824.

Du, H., & Bentler, P. M. (2021). Distributionally weighted least squares in structural equation modeling. *Psychological Methods*, 1-22. Advance online publication.

Ray, L. A., **Du, H.,** *Green, R., Roche, D. J. O, & Bujarski, S. (2021) Do behavioral pharmacology findings predict clinical trials outcomes? A proof-of-concept in medication development for alcohol use disorder. *Neuropsychopharmacology, 46,* 519-527.

Ray, L. A., **Du, H.,** Grodin, E., Bujarski, S., Meredith, L., Ho, D., Nieto, S., & Wassum, K. (2020). Capturing habitualness of drinking and smoking behavior in humans. *Drug and Alcohol Dependence, 207*, 107738, 1-14.

Park, I. J. K., **Du, H.,** Wang, L., Williams, D. R., & Alegría, M. (2020). The role of parents' ethnic-racial socialization practices in the discrimination—depression link among Mexican-origin adolescents. *Journal of Clinical Child and Adolescent Psychology, 49*(3), 391-404.

Du, H., Bradbury, T.N., Lavner, J.A., Meltzer, A.L., McNulty, J.K., Neff, L.A., & Karney, B.R. (2020). A comparison of Bayesian synthesis approaches for comparing two group means. *Research Synthesis Methods, 11*, 36-65.

Du, H., & Wang, L. (2020). Testing variance components in linear mixed modeling using permutation. *Multivariate Behavioral Research, 55*(1), 120-136.

Enders, C. K., **Du, H.,** & Keller, B. T. (2020). A model-based imputation procedure for multilevel regression models with random coefficients, interaction effects, and nonlinear terms. *Psychological Methods, 25*(1), 88–112.

Du, H., Edwards, M. C., & Zhang, Z. (2019). Bayes factor in one-sample tests of means with a sensitivity analysis: A discussion of separate prior distributions. *Behavior Research Methods, 51*(5), 1998-2021.

*Gao, M., **Du, H.,** Davies, P. T., & Cummings, E. M. (2019). Marital conflict behaviors and parenting: Dyadic links over time. *Family Relations, 68*(1), 135-149.

Cummings, E. M., Taylor, L. K., **Du, H.,** Merrilees, C. E., Goeke-Morey, M., & Shirlow, P. (2019). Examining bidirectional pathways between exposure to political violence and adolescent adjustment in Northern Ireland. *Journal of Clinical Child & Adolescent Psychology, 48*(2), 296-305.

*Keller, B. T., & **Du, H.** (2019). A fully conditional specification approach to multilevel multiple imputation with latent cluster means. *Multivariate Behavioral Research, 54*(1), 149-150.

Du, H., & Wang, L. (2018). Investigating reliabilities of intraindividual variability indicators with autocorrelated longitudinal data. *Multivariate Behavioral Research, 53*(4), 502-520.

Enders, C. K., Hayes, T., & **Du, H.** (2018). A comparison of multilevel imputation schemes for random coefficient models: Fully conditional specification and joint model imputation with random covariance matrices. *Multivariate Behavioral Research, 53*(5), 695-713.

Park, I. J. K., **Du, H.,** Wang, L., Williams, D. R., & Alegría, M. (2018). Racial/ethnic discrimination and mental health in Mexican-origin youths and their parents: Testing the "linked lives" hypothesis. *Journal of Adolescent Health, 62*(4), 480-487.

Du, H., Liu, F., & Wang, L. (2017). A Bayesian" fill-in" method for correcting for publication bias in meta-analysis. *Psychological Methods, 22*(4), 799-817.

Du, H., & Wang, L. (2017). Investigating reliabilities of intraindividual variability indicators with autocorrelated longitudinal data (abstract). *Multivariate Behavioral Research, 52*(1), 120-121.

*Planalp, E.M., **Du, H.,** Braungart-Rieker, J.M., & Wang, L. (2017). Growth curve modeling to studying change: A comparison of approaches using longitudinal dyadic data with distinguishable dyads. *Structural Equation Modeling, 24*(1), 129-147.

Du, H., & Wang, L. (2016). A Bayesian power analysis procedure considering uncertainty in effect size estimates from a meta-analysis. *Multivariate Behavioral Research, 51*(1), 589-605.

Du, H., & Wang, L. (2016). The impact of the number of dyads on estimation of dyadic data analysis using multilevel modeling. *Methodology, 12*(1), 21-31.

Jiang, T., Zhang, W., Wen, W., Zhu, H., **Du, H**., Zhu, X., Gao, X., Zhang, H., Dong, Q., & Chen, C. (2016). Reevaluating the two-representation model of numerical magnitude processing. *Memory & Cognition, 44*(1), 162-170.

Li, J., Zhang, B., **Du, H.,** Zhu, Z., & Li, Y. (2015). Metacognitive planning: Development and validation of an online measure. *Psychological Assessment, 27*(1), 260-271.

Du, H., Pang. B., Cheng, J., & Wang, A. (2013). Comparing online advertising with newspaper advertising in different presentation conditions: The evidence of memory and eye tracking experiments. *Psychological Exploration, 33*(4), 380-384.

Du, H. (2012). The difference in susceptibility to negative emotion between different adult attachment styles. *Journal of Occupational Health and Damage, 26*(6), 339-342.

Li, J., Pang, B., Zhang, B., & **Du, H.** (2011). Self-regulation: From basic theories to applications. *Journal of Beijing Normal University, 6*, 5-13.

BOOK CHAPTERS

Du, H. (2018). Statistical power analysis for t-tests. In Z. Zhang, & K.-H. Yuan, (Eds.), *Practical Statistical Power Analysis using WebPower and R* (pp.49-68)*.* Grander, IN: ISDSA Press.

Du, H., Zhang, Z., & Yuan, K.-H. (2018). Power analysis for t-test with non-normal data and unequal variances. In Z. Zhang, & K.-H. Yuan, (Eds.), *Practical Statistical Power Analysis using WebPower and R* (pp.273-298)*.* Grander, IN: ISDSA Press.

MANUSCRIPT UNDER REVIEW AND IN PREPARATION

* indicates student authors

Du, H. (under review). Extended unbiased distribution free estimator with mean structures.

Du, H., Ke, Z., Jiang, G., & Huang, S. (under review). The performances of Gelman-Rubin and Geweke's convergence diagnostics.

*Alacam, E., **Du, H.**, & Enders, C. K. (under review). A novel fully Bayesian model based imputation method for composite scores.

Du, H., *Alacam, E., Keller, B. T., & Enders, C. K. (in preparation). Comparing DIC and WAIC for multilevel mediation models with missing data.

Du, H. (in preparation). Multivariate meta-analysis for multigroup analysis.

*Mena, S., & **Du, H**. (in preparation). A novel bootstrap algorithm for testing overall changes in growth curve modeling.

CONFERENCE PRESENTATIONS

* indicates student authors

Du, H. (2022, July). *Unbiased Distribution Free Estimator in SEM.* Talk to be presented at the 87th annual Meeting of the Psychometric Society.

*Alacam, E., **Du, H**., & Enders, C. K. (2022, July). *Novel Bayesian model-based imputation method for missing items in questionnaires.* Talk to be presented at the 87th annual Meeting of the Psychometric Society.

*Mena, S., & **Du, H**. (2022, July). *Using Bootstrap to Test Changes in Growth Curve Models with Non-normal Data.* Talk to be presented at the 87th annual Meeting of the Psychometric Society.

Du, H., & Bentler, P.M. (2022, June). *Unbiased Distribution Free Estimator in SEM.* Invited talk to be presented at the 2022 Meeting of the International Society for Data Science and Analytics, Notre Dame, IN.

Du, H., & Bentler, P.M. (2022, April). *40-Year-Old Asymptotic Distribution Free Estimator Reliably Improves Structural Equation Modeling Statistics for Non-Normal Data.* Talk presented at the 2022 American Educational Research Association (AERA) Annual Meeting, San Diego, CA.

*Alacam, E., **Du, H**., & Enders, C. K. (2021, July). *A model-based imputation approach for scale scores.* Talk presented at the 86th annual Meeting of the Psychometric Society (virtual).

*Mena, S., & **Du, H**. (2021, July). *A Bootstrap Method for Growth Curve Models with Non-normal Data.* Talk presented at the 86th annual Meeting of the Psychometric Society (virtual).

Du, H., & Bentler, P.M. (2021, April). *Distributionally-weighted least squares.* Talk presented at the 2021 American Educational Research Association (AERA) Annual Meeting (virtual).

Copur-Gencturk, Y., **Du, H.,** & Thacker, I. (2020, October). *Differences in mathematical ability beliefs between teachers and mathematicians in higher education.* Paper presented at the Forty-Second Annual Meeting of the

North-American Chapter of the International Group for the Psychology of Mathematics Education, Mazatlán, Sinaloa, Mexico.

*Mena, S., & **Du, H**. (2020, July). *Testing changes in multilevel models with non-normal data using permutation.* Poster presented at the 85th annual Meeting of the Psychometric Society (virtual).

*Alacam, E., **Du, H**., & Enders, C. K. (2020, July). *Novel Bayesian model-based imputation method for missing items in questionnaires.* Talk presented at the 85th annual Meeting of the Psychometric Society (virtual).

*Xiong, X.Y, Xin, T., **Du, H**., & Shen, Y. N. (2020, July). *What are central factors relating to middle school students' science achievements: Evidence from psychological network analysis.* Poster presented at the 85th annual Meeting of the Psychometric Society (virtual).

Du, H., & Bentler, P.M. (2020, June). *Distributionally-weighted least squares in structural equation modeling.* Talk presented at the 2020 Meeting of the International Society for Data Science and Analytics, Notre Dame, IN.

Du, H., & Enders, C.K. (2019, July). *A latent variable approach for handing non-ignorable missingness.* Talk presented at the 2019 Meeting of the International Society for Data Science and Analytics, Nanjing, China.

Du, H., Bradbury, T.N., Lavner, J.A., Meltzer, A.L., McNulty, J.K., Neff, L.A., & Karney, B.R. (2018, September). *A comparison of Bayesian synthesis approaches for comparing two group means.* Talk presented at the fourth Biennial Developmental Methods Conference, Whitefish, Montana.

Du, H., & Wang, L. (2018, July). *Testing variance components in linear mixed modeling using permutation.* Talk presented at the 83th annual Meeting of the Psychometric Society, New York City, New York.

Enders, C., **Du, H.,** & Keller, B. (2017, October). *A fully Bayesian imputation procedure for random coefficient models (and other pesky product terms).* Paper presented at the annual meeting of the Society for Multivariate Experimental Psychology, Minneapolis, MN.

Du, H., & Wang, L. (2017, July). *Investigating reliabilities of intraindividual variability indicators with autocorrelated longitudinal data.* Talk presented at the 82th annual Meeting of the Psychometric Society, Zürich, Switzerland.

Du, H., & Wang, L. (2016, October). *Investigating reliabilities of intraindividual variability indicators with autocorrelated longitudinal data.* Poster presented at the 2016 SMEP Graduate Student Conference, Richmond, Virginia.

Nuttall, A. K., Zhang, Q., **Du, H.,** Wang, L., & Maxwell, S. E. (2016, September). *Bias in cross-sectional examinations of longitudinal mediation with a time-invariant Predictor.* Poster presented at the third Biennial Developmental Methods Conference, Whitefish, Montana.

Du, H. (2016, July). *Power analysis for t-tests with non-normal data and unequal variances*. Talk presented at the 81th annual Meeting of the Psychometric Society, Asheville, North Carolina.

Du, H., Liu, F., & Wang, L. (2015, July). *A Bayesian "fill in" method for correcting for publication bias in meta-analysis.* Talk presented at the 80th Annual Meeting of the Psychometric Society, Beijing, China.

Du, H., & Wang, L. (2014, July). *Power analysis with uncertainty in effect sizes.* Talk presented at the 79th Annual Meeting of the Psychometric Society, Madison, Wisconsin.

Du, H., & Wang, L. (2013, May). *Number of dyads needed in dyadic data analysis.* Poster presented at the 25th Annual conference of the Association of Psychological Science, Washington DC.

SOFTWARE DEVELOPMENT

Jiang, G., **Du, H.,** & Ke, Z. (2020). An R package "boot.heterogeneity: A Bootstrap based heterogeneity test for meta-analysis". Can be downloaded from CRAN (The Comprehensive R Archive Network)

Enders, C.K., Keller, B.T., & **Du, H.** (2020). Blimp (Version 2.2): Bayesian analysis and multiple imputation application for MacOS, Windows, and Linux. Available at www.appliedmissingdata.com/multilevel-imputation.html

Enders, C.K., **Du, H.** (2020). Blimp technical appendix: Bayesian estimation for multilevel path models. Los Angeles, CA. Available at www.appliedmissingdata.com/multilevel-imputation.html.

Enders, C.K., **Du, H.,** & Keller, B.T. (2019). Blimp technical appendix: Fully Bayesian model-based estimation and multiple imputation for multilevel models. Los Angeles, CA. Available at www.appliedmissingdata.com/multilevel-imputation.html.

Du, H., & Wang, L. (2016). An R function for determining minimum numbers of assessments for obtaining reliable intraindividual variability indicators. Retrievable from https://ucla.box.com/s/j41idz4awhcn2n5k82p4vkb1027mq21q

Du, H., & Zhang, Z. (2016). An R function for implementing a Monte Carlo based t-test power analysis. Retrievable from https://ucla.box.com/s/c5wfloeb60a9vfhjggx7d9tb5bp2bg1f

Du, H., Liu, F., & Wang, L. (2016). An R function for implementing a Bayesian "fill in" method for correcting for publication bias. Retrievable from https://ucla.box.com/s/8507h6a1utake2fohh0bb51chgg4uqqo

Du, H., & Wang, L. (2015). An R function for implementing a Bayesian power analysis procedure considering uncertainty in the effect size estimates from a meta-analysis. Retrievable from https://ucla.box.com/s/glmci2mpybnqmvaiqjb4e1q55g878g71

EDITORIAL ACTIVITIES

Ad Hoc Reviewer for *Applied Psychological Measurement*, *Behaviour Research and Therapy*, *Behavior Research Methods*, *BMC Medical Research Methodology*, *British Journal of Mathematical and Statistical Psychology*, *Evaluation & the Health Professions*, *Family Relations*, *Journal of Educational and Behavioral Statistics*, *Journal of Family Issues*, *Journal of Modern Applied Statistical Methods*, *Multivariate Behavioral Research*, *Psychological Methods*, *Psychometrika*, *Sociological Methods and Research*, *Frontiers*, *Research Synthesis Methods*, *Structural Equation Modeling*

GRANT REVIEW

Reviewer for the *Methodology, Measurement, and Statistics Program of the National Science Foundation*

CONFERENCE COMMITTEES

Committee member for the 2019 Meeting of the International Society for Data Science and Analytics (ISDSA)

Committee member for the 2020 Meeting of the International Society for Data Science and Analytics (ISDSA)

Reviewer for 2020 Society for Research on Adolescence (SRA) Biennial Meeting

Reviewer for 2021 American Educational Research Association (AERA) Annual Meeting

UCLA STUDENT ADVISING

2018-present   Egamaria Alacam, Ph.D. student

2019-present   Stefany Mena, Ph.D. student

2019-2020   Yimeng Zhang, Psychology Departmental Honors Thesis

2019-2020   Tristan Tibbe, 251 project (secondary sponsor)

2019-2020   Suzanna Donato, 251 project (secondary sponsor)

2019-2020   Ben Haggerty, 251 project (secondary sponsor)

2019-2021   Ayuni Camille Kelton, UCLA McNair Research Scholars Program