Tianjun Sun

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EDUCATION

University of Illinois at Urbana-Champaign

Ph.D. in Industrial and Organizational Psychology   Expected: August 2021
Minor in Quantitative Psychology
> **Dissertation:** Artificial intelligence powered personality assessment: A multidimensional psychometric natural language processing perspective (Chair: Prof. Fritz Drasgow)

M.S. in Applied Statistics   May 2019
M.S. in Industrial and Organizational Psychology   December 2017

B.S. in Psychology and Statistics *(Cum Laude, with Highest Distinctions)*   May 2015

ACADEMIC APPOINTMENTS

Kansas State University

Assistant Professor of Psychological Sciences   Starting August 2021

RESEARCH INTERESTS

- Personnel selection (e.g., faking, bias, big data/machine learning applications)
- Individual differences (e.g., bright and dark personalities, vocational interests, social behaviors)
- Research methods (e.g., SEM, multilevel modeling, longitudinal data analysis)
- Applied psychometrics (e.g., IRT, forced-choice measurement, adaptive testing)
- Cross-cultural psychology (e.g., multi-group variability and invariance, international assessments)

REFEREED PUBLICATIONS

Sun, T., Zhang, B., Cao, M. & Drasgow, F. (2021). Faking Detection Improved: Adopting a Likert Item Response Process Tree Model. *Organizational Research Methods*.

Sun, T., Fraley, R. C., & Drasgow, F. (2020). Matches made with information: Fitting measurement models to adult attachment data. *Assessment.*

Zhang, B., **Sun, T.**, Cao, M., & Drasgow, F. (2020). Using bifactor models to examine the predictive validity of hierarchical constructs: Pros, cons, and solutions. *Organizational Research Methods*.

Zhang, B., **Sun, T.**, Drasgow, F., Chernyshenko, O. S., Nye, C. D., Stark, S., & White, L. A. (2020). Though forced, still valid: Psychometric similarities between forced choice format and single statement format. *Organizational Research Methods.*

Sun, T., Zhang. B., Phan, J. W. M., Drasgow, F., & Roberts, B. W. (2019). "Meh!": Examining Midpoint Endorsement Habitude (MEH) in survey research. *Academy of Management Proceedings*.
> --Paper won the *2019 Sage Publications/Research Methods Division Best Student Paper Award*

CHAPTERS AND TECHNICAL REPORTS

Sun, T., & Zhang, B. (in press). Reliability Evidence for the Interest Profiler. In J. Rounds, K. Hoff, & P. Lewis (Eds.). *O*NET Interest Profiler Manual.* National Center for O*NET Development, Raleigh, NC.

Zhang, B., & **Sun, T.** (in press). Interest Profiler Linkage to O*NET Occupations. In J. Rounds, K. Hoff, & P. Lewis (Eds.). *O*NET Interest Profiler Manual.* National Center for O*NET Development, Raleigh, NC.

Sun, T., Anguiano-Carrasco, C., & Way, J. (2020). Impacts of Social Emotional Learning on School Climate Changes: A Longitudinal Examination with the ACT ENGAGE. In *ACT Research*. ACT. Inc., Iowa City, IA.

Sun, T. & Drasgow, F. (2018). Feasibility of Converting the Paper-and-Pencil ACT Tests to an Adaptive Multi-Stage Format. In *ACT Research*. ACT, Inc., Iowa City, IA.

MANUSCRIPTS UNDER REVISION AND REVIEW

Sun, T., & Drasgow, F. (2nd revise & resubmit). TITLE REMOVED FOR BLIND REVIEW [Topic: forced-choice measurement to overcome cross-cultural response biases]. *Journal of Cross-Cultural Psychology*.

Sun, T., Schilpzand, P., & Liu, Y. (2nd revise & resubmit). TITLE REMOVED FOR BLIND REVIEW [Topic: Integrative framework for workplace gossip]. *Journal of Organizational Behavior*.

Guo, F., **Sun, T.**, Gallagher, C. M., Tavoosi, S., & Min, H. (2nd revise & resubmit). TITLE REMOVED FOR BLIND REVIEW [Topic: NLP applications to solve HR problems]. *Human Resource Management Journal*.

Zhang, B., Luo, J., **Sun, T.**, Cao, M., & Drasgow, F. (1st revise & resubmit). TITLE REMOVED FOR BLIND REVIEW [Topic: strategies for handling cross-loadings in bifactor predictive models]. *Multivariate Behavioral Research*.

SELECTED WORKS IN PROGRESS

Sun, T., Zhang. B., Phan, J. W. M., Roberts, B., & Drasgow, F. (in progress). Examining midpoint endorsement in survey research. [Editing Stage] Target: *Journal of Personality and Social Psychology*.

Sun, T., Zhang, B., Cao, M., & Drasgow, F. (in progress). Reducing response distortions in interest measures with forced choice. [Editing Stage] Target: *Personnel Psychology*.

Sun, T. & Drasgow, F. (in progress). Converting passage-based paper-and-pencil tests to adaptive multi-stage tests. [Editing Stage] Target: *International Journal of Testing*.

Liu, M*., **Sun, T.***, & Oswald, F. (in progress). Interpretable machine learning: Methods for building explainable machine learning models in organizational science. [Editing Stage] Target: *Journal of Applied Psychology*. *equal contribution authorship

Guan, L., **Sun, T.**, Carter, N. T., Conway, J. S., Boyce, A. S., & Mead, A. D. (in progress) Muppscore: An R program for Expected A Posteriori scoring of multidimensional pairwise preference items. [Editing Stage] Target: *Applied Psychological Measurement*.

Min, H., Guo, F.*, **Sun, T.***, Liu, M., & Oswald, F. (in progress). Recommendations on reporting machine learning applications for organizational research. [Editing Stage] Target: *Journal of Applied Psychology*. *equal contribution authorship

Kern, J., Zhang, S., **Sun, T.**, Zhang, B., Hanna, A., Amrhein, R., & Lee, A. (in progress). Innovating personality assessment: New approaches to computerized adaptive tests. [Editing Stage] Target: *Educational and Psychological Measurement*.

Sun, T., Song, Q. C., Wee, J. M. C., Amrhein, R., Lee, A., & Rounds, J. (in progress). Contextualizing interest items. [Writing Stage] Target: *Journal of Applied Psychology*.

Chen, Y., **Sun, T.**, Zhang, B., & Drasgow, F. (in progress). A comprehensive examination of anchoring vignette effectiveness. [Writing Stage] Target: *Journal of Applied Psychology*.

Chen, Y., **Sun, T.**, Zhang, B., Roberts, B. W., & Drasgow, F. (in progress). Using anchoring vignette to assess social emotional skills in teenagers cross-culturally. [Writing Stage] Target: *Journal of Cross-Cultural Psychology*.

Zhang, B., **Sun, T.**, Anderson, C. J., Angrave, L., & Drasgow, F. (in progress). Modeling applicant faking: A Bayesian approach to the Retrieve-Edit-Select Model. [Writing Stage] Target: *Personnel Psychology*.

Sun, T., Eckland, N. S., & Berenbaum, H. (in progress). Improved measurement for pleasurable emotions: A bifactor perspective. [Data Analyzed] Target: *Emotion*.

Sun, T., Zhang, B., Roberts, B., & Drasgow, F. (in progress). A measurement focused approach on examining the general factor of personality. [Data Analyzed] Target: *Journal of Personality*.

GRANTS

Graduate College Dissertation Grant, University of Illinois, 2020.
  Amount: $2880. *Topic: Psychometric properties of artificial intelligence aided personality assessment.*

Robert P. Larson Grant for Research in Career Development, University of Illinois, 2016.
  Amount: $1440. *Topic: Development of a Vocational Interest Forced Choice Measure.*
James Scholar Preble Research Support, University of Illinois, 2014.
  Amount: $350. *Topic: Forced Choice for Cross-cultural Response Style Bias.*

AWARDS AND HONORS

Graduate College Conference Presentation Award, University of Illinois, 2021
Psychology Graduate Student Professional Development Award, University of Illinois, 2021
Graduate College Dissertation Travel Award, University of Illinois, 2019
Psychology Alumni Board Travel Award, University of Illinois, 2018, 2019
Graduate College Conference Travel Award, University of Illinois, 2017
Charles L. Hulin Fellowship, University of Illinois, 2015-2016
Class of 2015 Senior 100 Honorary, University of Illinois, 2015
Edmund J. James Scholar, University of Illinois, 2011-2015
James E. Spoor Award, University of Illinois, 2014
Preble Research Award, University of Illinois, 2014
College of LAS Conference Travel Award, University of Illinois, 2014

INVITED TALKS

"Item Response Tree Models for the Faking Problem". **Hogan Assessment Systems, Inc.** Tulsa, OK. April 10, 2020. (Materials delivered. Travel postponed due to COVID-19.)
"Applications of Ideal Point Item Response Models and Forced Choice Measurement in Psychological Science". School of Psychology, **Nanjing Normal University**. Nanjing, China. January 14, 2020.
"Applications of Item Response Trees in Management Science". School of Business, **Nanjing Normal University**. Nanjing, China. January 2, 2020.

CONFERENCE PRESENTATIONS

Sun, T. & Liu, M. (April 2021). Interpretable machine learning. In S. McAbee, F. Guo, & A. Samo (Co-chairs), Teaching Big Data Methods in I-O Graduate Curriculum 3.0. Alternate session *presented the 36th Annual Conference of the Society for Industrial and Organizational Psychology*, New Orleans, LA.

Sun, T. (April 2021). A psychometric natural language processing approach to AI-powered personality assessment. In T. Bartkoski (Chair), Modern problems require modern solutions: New approaches to personality assessment. IGNITE/*Panel hybrid session presented the 36th Annual Conference of the Society for Industrial and Organizational Psychology*, New Orleans, LA.

Sun, T., Zhang, B., Cao, M., & Drasgow, F. (April 2021). Likert response tree models to detect faking in selection tests. In G. P. Yankov (Chair), Understanding and detecting applicant faking on personality tests. *Symposium presented at the 36th Annual Conference of the Society for Industrial and Organizational Psychology*, New Orleans, LA.

Li, L., **Sun, T.**, Zhang, B., & Drasgow, F. (April 2021). Examining the fakability of a new forced-choice measure of the Dark Triad. *Poster presented at the 36th Annual Conference of the Society for Industrial and Organizational Psychology*, New Orleans, LA.
    --Paper rated as one of the *SIOP Top Ten Posters* for 2021

Zhang, B., **Sun, T.**, Anderson, C. J., Angrave, L. C., & Drasgow, F. (April 2021). Disentangling substantive responses from faking: Statistical and practical performance of the Bayesian Retrieve-Edit-Select model. In **T. Sun** & F. Drasgow (Co-chairs), Item Response Theory III: New Updates in Research and Applications. *Symposium presented at the 36th Annual Conference of the Society for Industrial and Organizational Psychology*, New Orleans, LA.

Sun, T. (April 2020). Machine learning models to score personality items and predict health and job outcomes. In T. Bartkoski (Chair), Modern problems require modern solutions: New approaches to personality assessment. IGNITE/*Panel hybrid session accepted to the 35th Annual Conference of the Society for Industrial and Organizational Psychology*, Austin, TX.

Sun, T., Zhang, B., Cao, M., & Drasgow, F. (April 2020). Detecting faking in personality tests with the tree process model. In G. P. Yankov (Chair), Novel approaches for detecting and preventing applicant faking. *Symposium accepted to the 35th Annual Conference of the Society for Industrial and Organizational Psychology*, Austin, TX.

Zhang, B., Luo, J., **Sun, T.**, & Drasgow, F. (April 2020). Using bifactor models to examine the predictive validity of hierarchical constructs. *Poster accepted to the 35th Annual Conference of the Society for Industrial and Organizational Psychology*, Austin, TX.

Sun, T., Zhang, B., Phan, W. M. J., Roberts, B. W., & Drasgow, F. (August 2019). "Meh!": Examining Midpoint Endorsement Habitude (MEH) in survey research. In **T. Sun** (Chair), Challenges and Applications of Survey-Based Research. *Paper presented at the 79th Annual Meeting of the Academy of Management*, Boston, MA.

Sun, T., Zhang, B., & Drasgow, F. (April 2019). Much ado about everything: Consequences of measurement model misspecification. In **T. Sun** & F. Drasgow (Co-chairs), Item Response Theory II: New Developments in Research and Applications. *Symposium presented at the 34th Annual Conference of the Society for Industrial and Organizational Psychology*, Washington, DC.

Sun, T., Zhang, B., Liu, Y., Sun, Y., & Oh, K-J. (April 2019). Spilling the tea: Motives and consequences of workplace gossip. In **T. Sun** & Y. Liu (Co-chairs), Letting You in on a Secret: New Perspectives of Workplace Gossip. *Symposium presented at the 34th Annual Conference of the Society for Industrial and Organizational Psychology*, Washington, DC.

Sun, T., Zhang, B., Hanna, A., Kern, J., Zhang, S., Amrhein, R., & Lee, A. (April 2019). Innovating personality assessment: New approaches to computerized adaptive tests. In S. Morris (Chair), Advances in Computer Adaptive Testing. *Symposium presented at the 34th Annual Conference of the Society for Industrial and Organizational Psychology*, Washington, DC.

Chen, Y., **Sun, T.**, Zhang, B., Roberts, B. W., & Drasgow, F. (April 2019). Anchoring vignette application on cross-cultural personality assessment. In D. S. Ones & B. K. Mercado (Co-chairs), Cross-Cultural and Criterion-Related Validity of New Generation Personality Measures. *Symposium presented at the 34th Annual Conference of the Society for Industrial and Organizational Psychology*, Washington, DC.

Zhang, B., **Sun, T.**, Drasgow, F., Chernyshenko, O. S., Nye, C., Stark, S., & White, L. A. (April 2019). Though forced, still valid: Equivalence between FC format and single statement scale. In P. Lee (Chair), Examining the Effectiveness of MFC Personality Assessments from Diverse Perspectives. *Symposium presented at the 34th Annual Conference of the Society for Industrial and Organizational Psychology*, Washington, DC.

Zhang, B., **Sun, T.**, & Drasgow, F. (April 2019). Improving the performance of bifactor predictive model: One more item suffices. *Poster presented at the 34th Annual Conference of the Society for Industrial and Organizational Psychology*, Washington, DC.

Chen, Y., Zhang, B., **Sun, T.**, & Drasgow, F. (April 2019). Negative wording effect through the lens of local structural equation modeling. *Poster presented at the 34th Annual Conference of the Society for Industrial and Organizational Psychology*, Washington, DC.

Sun, T., Zhang, B., Cao, M., & Drasgow, F. (April 2018). Faking classification accuracy improved: adopting the tree-process model. *Poster presented at the 33rd Annual Conference of the Society for Industrial and Organizational Psychology*, Chicago, IL.

Zhang, B., **Sun, T.**, Cao, M., & Drasgow, F. (April 2018). Enhancing predictive validity of multidimensional measures: a bifactor perspective. *Poster presented at the 33rd Annual Conference of the Society for Industrial and Organizational Psychology*, Chicago, IL.

Zhang, B., **Sun, T.**, Drasgow, F., Chernyshenko, O. S., Nye, C., Stark, S., & White, L. A. (April 2018). Reliability of unfolding rating scales and multidimensional forced choice measures. In J. A. DeSimone (Chair), What Should We Do About Alpha II: Alternatives to Alpha? *Symposium presented at the 33rd Annual Conference of the Society for Industrial and Organizational Psychology*, Chicago, IL.

Sun, T., Zhang, B., Stark, S., & Drasgow, F. (April 2017). Do questionnaire formats and scoring models change the construct measured? In H. Min & M. Zickar (Co-chairs), Item Response Theory: New Directions for Research and Practice. *Symposium presented at the 32nd Annual Conference of the Society for Industrial and Organizational Psychology*, Orlando, FL.

Sun, T., & Drasgow, F. (April 2017). Cross-cultural response style bias is real: Adapting the Tree-Process Model. *Poster presented at the 32nd Annual Conference of the Society for Industrial and Organizational Psychology*, Orlando, FL.

Sun, T., Cao, M., & Drasgow, F. (April 2016). Overcoming cross-cultural response style bias: forcing improved measurement. *Poster presented at the 31st Annual Conference of the Society for Industrial and Organizational Psychology*, Anaheim, CA.

TEACHING EXPERIENCE

Interim Lecturer (part-of-term), Personnel Psychology, *(75 students)* — Fall 2019

Online Course Developer and Instructor, Intro to I/O Psychology — Fall 2018 - Summer 2019

Instructor, Intro to I/O Psychology, *Excellence rating: 4.8/5.0 (25 students)* — Summer 2018
    --Recognized among *Teachers Ranked as Excellent*

Teaching Assistant, Intro to I/O Psychology *(155 students)* — Spring 2018

Teaching Assistant, Social Cognition *(150 students)* — Fall 2016

Instructor, Freshman Seminar, *Excellence rating: 4.4/5.0 (24 students)* — Fall 2013

Discussion Facilitator, Social Issues Group Dialogues, *Excellence rating: 4.3/5.0 (20 students)* — Fall 2012

APPLIED EXPERIENCE

ACT, Inc. — Iowa City, IA
Research Intern | Center for Social, Emotional, and Academic Learning — June 2020 - August 2020
- Examined the construct structure and assessment validities of social emotional learning
- Leveraged assessment data and item response theory to evaluate and improve test performance
- Contributed to the research team and developed technical reports and manuscripts for publications

Amazon.com Services, Inc. — Seattle, WA
Research Scientist Intern | Talent Assessment — May 2019 - August 2019
- Leveraged assessment data and machine learning to optimally score multiple criteria
- Identified key assessment components and improved test efficiency for various functions
- Facilitated content development and validation for several personnel and selection assessments

JD.com, Inc. — Champaign-Urbana, IL
Personnel Assessment Consultant — December 2018 - May 2019
- Designed tailored scales for assessing various skills and traits to for hiring and promotion
- Analyzed selection and performance data to identify problems in current evaluation system
- Assisted on development for company-wide 360-degree feedback and performance review

Human Resources Research Organization (HumRRO) — Champaign-Urbana, IL
Research Associate (Contractor) — October 2018 - March 2019
- Analyzed data on various forms of interest profiler to examine their psychometric properties
- Linked existing forms of interest profilers to O*NET occupations
- Participated in writing technical reports and book chapters for the O*NET Interest Profiler

The Organization for Economic Co-operation and Development (OECD) — Champaign-Urbana, IL
Research Assistant — February 2018 - August 2018
- Designed scales for socioemotional skills to be administered on teenagers around the globe
- Analyzed item trials data to evaluate scale performance and global applicability
- Assisted on the initial phase of the large project effort

ACT, Inc. — Champaign-Urbana, IL
Research Assistant — January 2017 - February 2018
- Investigated latent structure of mixed format tests
- Analyzed dimensionality of passage- and item-based tests
- Designed and applied methods of multistage adaptive testing

Anheuser Busch InBev — Champaign, IL
People Analytics Intern — October 2014 - August 2016
- Researched and designed personnel excellence assessment instruments as performance indicators
- Analyzed internal metrics, trends and causes to create solutions balancing risks and management

- Conducted analyses to support business decisions, make predictions, and assess practicality

SERVICES

Ad Hoc Reviewer, *Journal of Personality Assessment*   2021 - present
Ad Hoc Reviewer, *Journal of Cross-Cultural Psychology*   2020 - present
Ad Hoc Reviewer, *Society for Industrial and Organizational Psychology* Annual Meeting   2019 - present
Ad Hoc Reviewer, *Academy of Management* Annual Meeting   2019 - present

SELECTED COURSEWORK

- Organizational Psychology
- Personnel Psychology
- Foundations of Organizational Behavior
- Measurement and Test Development
- Item Response Theory
- Computerized Adaptive Testing
- Multivariate Statistics
- Categorical Data Analysis
- Covariance Structure and Factor Modeling (SEM)
- Advanced Structural Equation Modeling
- Hierarchical Linear Modeling
- Multilevel Modeling and Network Analysis
- Social Research Methods
- Bayesian Research Methods
- Bayesian Statistical Inference and Modeling
- Data Science Foundations
- Advanced Data Science
- Statistical Learning
- Mathematical Statistics
- Applied Regression and Design
- Methods of Applied Statistics
- Statistical Data Management
- Advanced Data Analysis
- Survival Analysis
- Real Analysis

SKILLS

Language: English (fluent), Mandarin Chinese (fluent)
IRT Software: GGUM2004, GGUM MCMC, ScoreMUPP, flexMIRT, BILOG, MULTILOG, PARSCALE, TESTFACT, IRTPRO, MCMC GGUM, MCMC ZG
Statistical and Programming Tools: R, Python, Mplus, SPSS, SAS, Mathematica, SQL, LaTex
Certification: SAS Base Programmer, NREMT-B, PADI AOW, USPA A

PROFESSIONAL AFFILIATION

Society for Industrial and Organizational Psychology, *Student Affiliate*
Academy of Management, *Student Member*
Association for Psychological Science, *Graduate Student Affiliate*
American Psychological Association, *Graduate Affiliate*