

## Han Hao, Ph.D.

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### ACADEMIC POSITIONS

**Assistant Professor (Tenure-Track) of Psychology**, 2024 - present

Department of Psychological Sciences, Tarleton State University

**Postdoctoral Scholar**, 2023 - 2024

Department of Psychology, New Mexico State University

**Graduate Student**, 2015 - 2022

Division of Behavioral & Organizational Sciences, Claremont Graduate University

### EDUCATIONAL BACKGROUND

**Ph. D. in Applied Cognitive Psychology**, 2022

Department of Psychology, Claremont Graduate University, Claremont, CA

**M. A. in Positive Organizational Psychology and Evaluation**, 2017

Department of Psychology, Claremont Graduate University, Claremont, CA

**B. Sc. in Psychology**, 2013

Department of Psychology & Behavioral Science, Zhejiang University, Hangzhou, China

### JOURNAL PUBLICATIONS & CONFERENCE PAPERS

**Hao, H.**, Williams, J. C., Tubiolo, P. N., Silver-Frankel, E., Bauer, K., Luceno, S. R., ... & Van Snellenberg, J. (2025) The latent structure of working memory: A large sample factor model of working memory capacity. *Cognitive, Affective, & Behavioral Neuroscience*.

Ni, L., Tian, Y., **Hao, H.**, McKlin, T., Bohrer, J., & Baskin, J. (2025). Examining Computer Science Educators' Professional Identity: Computer Science Teacher Identity Survey and Profiles. *ACM Transactions on Computing Education*.

**Hao, H.**, Conway, A. R., Kovács, K., & Snijder, J. P. (2025). Simulating the process overlap theory of intelligence: A unified framework bridging psychometric and cognitive perspectives. *Personality and Individual Differences*. 233, 112865.

Navarro, E., **Hao, H.**, Rosales, K. P., & Conway, A. R. (2024). An item response theory approach to the measurement of working memory capacity. *Behavior Research Methods*, 56(3), 1697-1714.

**Hao, H.**, & Conway, A. R. (2022). The impact of auditory distraction on reading comprehension: An individual differences investigation. *Memory & Cognition*, 50(4), 852-863.

- Conway, A. R., Kovacs, K., **Hao, H.**, Rosales, K. P., & Snijder, J. P. (2021). Individual differences in attention and intelligence: A united cognitive/psychometric approach. *Journal of Intelligence*, 9(3), 34.
- Ni, L., McKlin, T., **Hao, H.**, Baskin, J., Bohrer, J., & Tian, Y. (2021, August). Understanding Professional Identity of Computer Science Teachers: Design of the Computer Science Teacher Identity Survey. In *Proceedings of the 17th ACM Conference on International Computing Education Research* (pp. 281-293).
- Conway, A. R., Kovacs, K., **Hao, H.**, Goring, S. A., & Schmank, C. (2020). The Struggle Is Real: Challenges and Solutions in Theory Building. *Psychological Inquiry*, 31(4), 302-309.
- Conway, A. R., & **Hao, H.** (2020). The Role of Non-Cognitive Factors in the SAT Remains Unclear: A Commentary on Hannon (2019). *Journal of Intelligence*, 8(2), 15.

## PREPRINTS/MANUSCRIPTS

- Hao, H.** (2024, February 18). Are We Getting Closer to Artificial Consciousness?: A Commentary of Butlin et al. (2023) from A Psychological Research Perspective. *Preprint Available at* <https://doi.org/10.31234/osf.io/5hyph>
- Burnell, R., **Hao, H.**, Conway, A. R., & Orallo, J. H. (2023). Revealing the structure of language model capabilities. *arXiv preprint arXiv:2306.10062*.
- Hao, H.** (2023). The Conceptual Representation of Latent Variables from Variational Autoencoders: A Psychometric Investigation of Cognitive Data Using Interpretable Variational Autoencoder. *Preprint Available at* <https://doi.org/10.31219/osf.io/c38hn>
- Protzko, J., Kovács, K., Conway, A. R., **Hao, H.**, Murphy, C., Garvey, W., Moreau, D., Pietschnig, J., Thurn, C., von Bastian, C. (2024). Strict Theory Testing with Big Team Science: Acute Cardiovascular Exercise, Executive Functioning, and the Cause of the Positive Manifold. *Under Review*.

## PROJECTS IN PROGRESS

- Villalobos, A. A., Hao, H., Moore, D. M., & Conway, A. R. (Manuscript in submission) The Relationship Between Socioeconomic Status, Cognitive Abilities, and Academic Achievement in Early Adolescence.
- Garvey, W. F., **Hao, H.**, Conway, A. R., Forsberg, A., & von Bastian, C. C. (Manuscript in submission) Individual Differences in the Three-Embedded Components of Working Memory and Their Relation to Fluid Intelligence.
- Wanzer, D. L., **Hao, H.**, McKlin, T. (Manuscript under revision). *Response or recall bias? Choosing between the traditional and retrospective pretest using measurement invariance*

*techniques.*

**Hao, H.,** Rosales, K., Conway, A.R., Kovacs, K., & Kane, M. J. (Manuscript in preparation). *The Domain-Generality of Working Memory and Fluid Intelligence: A Novel Psychometric Network Re-Analysis of Kane et al. (2004).*

**Hao, H.** (Manuscript in preparation). *The longitudinal network structure of adolescent cognitive abilities: A developmental psychometric investigation on neurocognition data from the Adolescent Brain Cognitive Development Study.*

## CONFERENCE PRESENTATIONS

**Hao, H.,** Rider, T. A., & Conway, A. R. A. (2025, July) Adolescent Cognitive Development and Connectivity: A Preliminary Network Analysis on Neurocognitive Measures of the ABCD Study. Poster session of International Society of Intelligence Research Annual Meeting 2025, Evanston, IL.

**Hao, H.,** Conway, A. R. A., Kovacs, K., & Snijder, J. (2024, November). The Domain-Generality of Working Memory and Fluid Intelligence: A Novel Psychometric Network Re-Analysis of Kane et al. (2004). Poster session of Psychonomic Society Annual Meeting 2024, New York, NY.

**Hao, H.,** Conway, A. R. A., Kovacs, K., & Snijder, J. (2023, November) Simulating the Process Overlap Theory of Intelligence: A Unified Framework Bridging Psychometric and Cognitive Perspectives. Poster session of Psychonomic Society Annual Meeting 2023, San Francisco, CA.

**Hao, H.,** Conway, A. R. A., Kovacs, K., & Snijder, J. (2023, July) Simulating the Process Overlap Theory of Intelligence: A Unified Framework Bridging Psychometric and Cognitive Perspectives. Poster session of International Society of Intelligence Research Annual Meeting 2023, Berkeley, CA.

**Hao, H.,** Rosales, K. P., Snijder, J., Kovacs, K., Kane, M. J., & Conway, A. R. A. (2021 November). *The Generality of Working Memory and Reasoning: Rethinking the Relationship.* Poster session of Psychonomic Society Annual Meeting 2021, Virtual Conference.

**Hao, H.,** Rosales, K. P., Snijder, J., Kovacs, K., Kane, M. J., & Conway, A. R. A. (2021 September). *Rethinking the Relationship of Working Memory and Intelligence: A Perspective Based on Process Overlap Theory.* Poster session of International Society for Intelligence Research Annual Conference 2021, Virtual Conference.

**Hao, H.,** Navarro, E., Rosales, K. P., & Conway, A. R. A. (2020 November). *Measurement of Working Memory Capacity: An Item Response Theory Examination of Complex Span Tasks.* Poster session of Psychonomic Society Annual Meeting 2020, Austin, TX.

- Hao, H.** & Conway, A. R. A. (2019, November). *The Impact of Auditory Distraction on Reading Comprehension: An Individual Differences Investigation*. Poster session presented at the Psychonomic Society Annual Meeting 2019, Montreal, Canada.
- Kovacs, K., Conway, A. R. A., Snijder, J., & **Hao, H.** (2018, November). *General Intelligence Explained (Away)*. Poster session presented at Psychonomic Society Annual Meeting 2018, New Orleans, LA.

## TEACHING EXPERIENCE

### **Assistant Professor (Tenure-Track), Tarleton State University**

PSYC4301 Psychological Tests & Measurements, 2025 Spring

PSYC5090 Cognitive Individual Differences, 2025 Spring

PSYC2317 Statistical Methods in Psychology, 2024 Fall, 2025 Fall

PSYC5316 Advanced Quantitative Methods and Experimental Design, 2024 Fall, 2025 Fall

### **Assistant Professor (Lecturer), New Mexico State University**

CEPY 6440 Multivariate Statistics, 2024 Spring

### **Teaching Assistant, Claremont Graduate University**

PSYCH 315 E Multilevel Modeling, 2020

PSYCH 315 F Factor Analysis, 2017 & 2019

PSYCH 315 H Structural Equation Modeling, 2017 & 2019

PSYCH 308A Intermediate Statistics, 2016

PSYCH 308B ANOVA, 2016

PSYCH 308C Applied Regression, 2016

PSYCH 308D Categorical Data Analysis, 2016

## FUNDINGS, AWARDS & SCHOLARSHIPS

### **The President's Excellence in Research Scholars (2025), \$15,993.50**

Division of Research at Tarleton State University

### **Brayfield Outstanding Dissertation Award (2023) \$250**

Division of Behavioral & Organizational Sciences at Claremont Graduate University

### **CGU Fellowships (2016, 2017, & 2018)**

Division of Behavioral & Organizational Sciences at Claremont Graduate University

### **Outstanding Research Awards of the 15<sup>th</sup> (2012) & 14<sup>th</sup> (2011) Student Research Training Program**

Department of Psychology & Behavioral Sciences, Zhejiang University

## ACADEMIC & PROFESSIONAL SERVICES

**Inaugural member** of the Graduate Student and Postdoc Committee (GSPC) at Psychonomic Society, 2024

**Academic Journal Reviewer** for:

Behavior Research Methods, Applied Cognitive Psychology, Journal of Cognitive Psychology, PLOS ONE

**Statistical Consultant** for:

Department of Psychology, Claremont Graduate University, 2017  
The Findings Group, LLC., 2019 - 2021

## PROFESSIONAL SKILLS

**Statistical Skills:**

General/Generalized regression Modeling, Multilevel Modeling, Exploratory and Confirmatory Factor Analysis, Structural Equation Modeling, Item Response Theory, Psychometric Network Analysis, Data Simulation, Artificial Neural Network.

**Software Skills:**

R, SPSS, AMOS, Mplus, C, Python, Markdown, HTML