Han Hao

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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

PUBLICATIONS

Hao, H., Conway, A. R., Kovács, K., & Snijder, J. P. (in press). Simulating the Process Overlap Theory of Intelligence: A Unified Framework Bridging Psychometric and Cognitive Perspectives. *Personality and Individual Differences. Preprint Available at* http://dx.doi.org/10.2139/ssrn.4512895

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., & Martin, A. (2021, March). Assessing Professional Identity of Computer Science Teachers: Design and Validation of the CS Teacher Identity Survey. In *Proceedings of the 52nd ACM Technical Symposium on Computer Science Education* (pp. 1332-1332).

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., Williams, J. C., Tubiolo, P. N., Silver-Frankel, E., Bauer, K., Luceno, S. R., … Van Snellenberg, J. (2024, August 7). The Latent Structure of Working Memory: A Large Sample Factor Model of Working Memory Capacity. *Under Review. Preprint Available at* https://doi.org/10.31234/osf.io/43akq

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/5hypb

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. *Under Revision. 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 Revision.*

PROJECTS IN PROGRESS

Ni, L., **Hao, H.**, Tian, Y., McKlin, T., (Manuscript under review). *Examining Computer Science Educators' Professional Identity: Computer Science Teacher Identity Survey and Profiles.*.

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. (Project 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., 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, 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, 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, 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, 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, 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, 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, New Orleans, LA.

RESEARCH/WORK EXPERIENCE

Assistant Professor, Tarleton State University, 2024 - present

Postdoctoral Researcher, New Mexico State University, 2023-2024

Graduate Researcher, CALIBER Research Lab, Claremont Graduate University, 2017 – 2022

Research Intern, REACH lab, University of Southern California, Summer 2016

M. A. Researcher Claremont Graduate University, 2015 – 2017

Student Research Training Program, Zhejiang University, China, 2011 - 2013

TEACHING EXPERIENCE

Assistant Professor (Tenure-Track), Tarleton State University

PSYC2317 Statistical Methods in Psychology, 2024 Fall

PSYC5316 Advanced Quantitative Methods and Experimental Design, 2024 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 308 A Intermediate Statistics, 2016

PSYCH 308 B ANOVA, 2016

PSYCH 308 C Applied Regression, 2016

PSYCH 308 D Categorical Data Analysis, 2016

AWARDS & SCHOLARSHIPS

Brayfield Outstanding Dissertation Award (2023)

　　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 15th (2012) & 14th (2011) Student Research Training Program

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