

JING TIAN

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Education

Carnegie Mellon University

Pittsburgh, PA USA

PH.D. PSYCHOLOGY

2013-2018

- Committee: Robert S. Siegler (chair), John Anderson, and Sharon Carver
- Dissertation: *Understanding Percentages*

Peking University

Beijing, China

B.S. PSYCHOLOGY & CHEMISTRY

2009-2013

Positions

Assistant Professor, Dept of Psychology, Fordham University

Bronx, NY

Aug. 2023 -

Post-Doctoral Researcher, Dept of Psychology and Neuroscience, Temple University

Philadelphia, PA

ADVISOR: ELIZABETH A. GUNDERSON

Aug. 2019 - July 2023

Visiting Assistant Professor, Bryn Mawr College

Bryn Mawr, PA

Aug. 2022 - Dec. 2022

Post-Doctoral Researcher, Teachers College, Columbia University

New York, NY

ADVISOR: ROBERT S. SIEGLER

2018-2019

Grants

2023 - 2026. NSF ECR DRL - 2300947. Role: PI (Co-PI: Gunderson). *Pathways to Conceptual Knowledge of Decimals*. Total Cost: \$815,385

Publications

PUBLISHED MANUSCRIPTS

Mentee Roles: † Post-bac, * Undergraduate student ★ Junior graduate student

Tian, J., Bennet-Pierre, G., Tavassolie, N., Newcombe, N., Weinraub, M., Hindman, H. A., Newton, K. J., & Gunderson, E. A. (in press). A growth mindset message leads parents to choose more challenging informal learning activities. *Journal of Intelligence. Special Issue: Spatial Intelligence and Learning*.

Tian, J., Ren, K., & Gunderson, E. A. (2023). Verbal labels influence children's processing of decimal magnitudes. *Journal of Applied Developmental Psychology*.

Tian, J., Ren, K., Newcombe, N., Weinraub, M., Vandell, D., & Gunderson, E. A. (2022). Tracing the origins of the STEM gender gap: Childhood spatial skills contribute to women's under-representation in STEM majors. *Developmental Science*, e13302.

Siegler, R. S. & **Tian, J.** (2022). Why do we need three rational number notations? The importance of percentages. *Advances in Child Development and Behavior*.

- Tian, J., †Leib, E. R., †Griger, C., ★Oppenzato, C. O., & Siegler R. S. (2022).** Biased problem distributions in assignments parallel those in textbooks: Evidence from fraction and decimal arithmetic. *Journal of Numerical Cognition*, 8(1), 73-88.
- Tian, J., ✳Dam, S., & Gunderson, E. A. (2022).** Spatial skills, but not spatial anxiety, mediate gender differences in number line estimation. *Developmental Psychology*, 58(1), 138-151.
- Tian, J., Bartek, V., ✳Rahman, M. Z., & Gunderson, E. A. (2021).** Learning improper fractions with the number lines and the area models. *Journal of Cognition and Development*, 22(2), 305-327.
- Tian, J., Braithwaite, D. W., & Siegler R. S. (2021).** Distributions of textbook problems predict student learning: Data from decimal arithmetic. *Journal of Educational Psychology*, 113(3), 516-529.
- Siegler, R. S. , Im, S., Schiller, L., **Tian, J.**, & Braithwaite, D. W. (2020). The sleep of reason produces monsters: How and when biased input shapes mathematics learning. *Annual Review of Developmental Psychology*, 2, 413-435.
- Tian, J., Gunderson, E. A. (2020).** Teaching fractions to young children. *Young Children*, 75(4), 62 - 67.
- Tian, J., Braithwaite, D. W., & Siegler R. S. (2020).** How do people choose among rational number notations? *Cognitive Psychology*, 123, 101333.
- Wang, C. & **Tian, J.** (2018). Reminders of mortality alter pain-evoked potentials in a Chinese sample. *Frontiers in Psychology*, 9, 1667.
- Tian, J., & Siegler, R. S. (2017).** Which type of rational numbers should students learn first? *Educational Psychology Review*, 30, 351-372.
- Braithwaite, D. W., **Tian, J.**, & Siegler, R. S. (2017). Do children understand fraction addition? *Developmental Science*, 21(4), e12601.
- Tian, J., & Siegler, R. S. (2017).** Fractions learning in children with mathematics difficulties. *Journal of Learning Disabilities*, 50(6), 614-620.
- Tian, J. (2017).** Difficulty in understanding rational numbers and potential solutions. In P. Lemaire (Eds.), *Cognitive Development from a Strategy Perspective: A Festschrift for Robert Siegler* (pp. 233 - 262). London, UK: Routledge.
- Zhou, Y., Qin, S., & **Tian, J.** (2016). Risk perception of air pollution: An exploration of self-relevancy. *Human and Ecological Risk Assessment: An International Journal*, 22(7), 1506-1518.
- Lortie-Forgues, H., **Tian, J.**, & Siegler, R. S. (2015). Why is learning fraction and decimal arithmetic so difficult? *Developmental Review*, 38, 201-221.

Conference Presentations

- Tian, J., Bennett-Pierre, G., Tavassolie, N., Zhang, X., D'Antonio, E., Sylverne, L., Newcombe, N.S., Weinraub, M., Hindman, A., Newton, K., & Gunderson. E. A. (2023, June).** *A month-long parent-led spatial intervention.* Poster presented at the Mathematical Cognition and Learning Society Conference 2023, UK.
- Tian, J., Tavassolie, N., Bennett-Pierre, G., Newcombe, N.S., Weinraub, M., Hindman, A., Newton, K., & Gunderson. E. A. (2022, June).** *Growth mindset message influences parents' choices of games.* Poster presented at the Mathematical Cognition and Learning Society Conference 2022, Belgium.
- Tavassolie, N., **Tian, J.**, Bennett-Pierre, G., Newcombe, N.S., Weinraub, M., Hindman, A., Newton, K., & Gunderson. E. A. (2022, June). *Measuring the spatial home learning environment: Initial test of the Spatial Toys and Activities Checklist (STAC)* Poster presented at the Mathematical Cognition and Learning Society Conference 2022, Belgium.
- Tian, J., Ren, K., Newcombe, N.S., Weinraub, M., Vandell, D. L., & Gunderson. E. A. (2022, April).** *Tracing the origins of the STEM gender gap: Childhood spatial skills contribute to women's underrepresentation in STEM college majors* Poster to be presented at the 2022 Biennial Meeting of the Cognitive Development Society, Madison, WI.
- Tian, J., Rahman, M. Z., & Gunderson, E. A. (2021, April).** *Children's inconsistent use of fraction magnitude knowledge.* Talk presented at the 2021 Biennial Meeting of the Society for Research in Child Development.

- Tian, J.**, Ren, K., Newcombe, N., Weinraub, M., Vandell, D., & Gunderson, E. A. (2021, February). *Early predictors of STEM major choice*. Invited talk in the STEM Teaching and Learning Lab at University of California, Riverside.
- Tian, J.**, Rahman, M., Bartek, V., & Gunderson, E. A. (2020, June). *Intervention on improper fractions with number lines versus area models*. Talk presented at the Third Conference of the Mathematical Cognition and Learning Society, Dublin, Ireland.
- Tian, J.** (2019, March). *Linguistic facilitation of understanding of percentages*. Talk presented at the 2019 Biennial Meeting of the Society for Research in Child Development, Baltimore, Maryland.
- Tian, J.**, & Siegler, R. S. (2019, March). *An analysis of textbook problems on percentages*. Poster presented at the 2019 Biennial Meeting of the Society for Research in Child Development, Baltimore, Maryland.
- Tian, J.**, & Siegler, R. S. (2019, January). *Predicting students' knowledge by textbook input: The case of percentages*. Poster presented at the 2019 IES-PI Meeting, Washington, DC.
- Tian, J.**, Braithwaite, D. W., & Siegler, R. S. (2018, April). *Do children understand fraction addition?* Talk presented at the First Conference of the Mathematical Cognition and Learning Society, Oxford, UK.
- Tian, J.**, & Siegler, R. S. (2017, October). *Better conceptual understanding of rational number multiplication with "of" expression*. Poster presented at the 2017 Biennial Meeting of the Cognitive Development Society, Portland, Oregon.
- Tian, J.**, & Siegler, R. S. (2017, April). *Influence of number of digits on rational number magnitude understanding*. Poster presented at the 2017 Biennial Meeting of the Society for Research in Child Development, Austin, Texas.
- Tian, J.** (2016, June). *Understanding of rational numbers: Difficulties and prospective solutions*. Talk presented at Cognitive Development: Hommage to Robert S. Siegler, Aix-en-Provence, France.
- Tian, J.**, & Siegler, R. S. (2015, October). *Use of magnitude in addition estimation*. Poster presented at the 2015 Biennial Meeting of the Cognitive Development Society, Columbus, Ohio.
- Tian, J.**, & Siegler, R. S. (2015, March). *Spontaneous Focusing on Numerosity (SFON) in early math development*. Poster presented at the 2015 Biennial Meeting of the Society for Research in Child Development, Philadelphia, Pennsylvania.

Teaching Experience

- FA 2022 **Research Methods and Statistics**, Bryn Mawr College | **Instructor**
- SP 2016 **Research Methods in Dev. Psych.**, Carnegie Mellon University | **Teaching Assistant**
- FA 2015 **Introduction to Psychology**, Carnegie Mellon University | **Section Instructor**
- SP 2015 **Principles of Child Development**, Carnegie Mellon University | **Teaching Assistant**

Mentoring Experience

- 2021-2023 **Joel Camarote**, Temple University | currently graduate student at the University of Pittsburgh
- 2021-2023 **Ashley Bontempo**, Temple University
- 2022-2023 **Katie Probst**, Temple University
- 2021-2022 **Khushi Sibal**, Temple University | currently graduate student at Pepperdine University and Stanford University
- 2020-2021 **Paula Daniela Ueki**, Temple University | currently project coordinator at DePaul University
- 2020-2021 **Kimberly Bohl**, Temple University
- 2019-2020 **Maya Rahman**, Temple University | currently research associate at Spark Therapeutics
- 2019-2020 **Su (Quang Ngoc) Dam**, Temple University | currently master student at the University of Technology Sydney
- 2018-2019 **Colleen Oppenzato**, Teachers College, Columbia University | currently lecturer at the City College of New York
- 2018-2019 **Reem Alattas**, Teachers College, Columbia University | currently education specialist at the Ministry of Culture, Saudi Arabia
- 2016-2018 **Elena Leib**, Carnegie Mellon University | currently PhD student at the University of California, Berkeley
- 2014-2018 **Cassandra Griger**, Carnegie Mellon University | currently PhD student at the University of Iowa

Service

UNIVERSITY SERVICE

- 2016-2018 **Teaching Assistant Representative**, Carnegie Mellon University
- 2015-2016 **Developmental Discussion Group Coordinator**, Carnegie Mellon University
- 2014-2016 **Graduation Celebration Coordinator**, Carnegie Mellon University

AD-HOC REVIEWER

British Journal of Educational Psychology
Child Development
Child Development Perspectives
Cognitive Development
Cognitive Science
Developmental Psychology
Developmental Science
Early Education and Development
Frontiers in Psychology

Infant and Child Development
Journal of Educational Psychology
Journal of Experimental Child Psychology
Journal of Experimental Psychology: LMC
Journal of Learning Disabilities
Mind, Brain, and Education
Quarterly Journal of Experimental Psychology

Reference

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Nora S. Newcombe, Ph.D.
Laura H. Carnell Professor of Psychology
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