MICHELLE A. HURST, Ph.D.

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Current Position

University of Chicago, Postdoctoral Scholar — September 2017 – Present
Development and Research in Early Math Education (DREME) Network Affiliate
Mentors: Susan Levine and Amy Claessens

Education

Boston College, Ph.D. in Developmental Psychology — 2012 – 2017
Advisor: Sara Cordes
PhD Thesis: Exploring Attention to Numerical Features in Proportional Reasoning: The role of representations, contexts, and individual differences

Boston College, M.A. in Developmental Psychology — 2012 – 2014
Advisor: Sara Cordes
Master's Thesis: Investigating multiples modes of rational number representation

McMaster University, Honors B.Sc. Mathematics and Statistics, Minor in Psychology — 2008 – 2012
Advisor: Miroslav Lovric
Honors Thesis: The Effect of Student Attitudes and Beliefs on Mathematics Education

Awards

Engelhard Pingree Fellow, Graduate School of Arts and Science, Boston College	2017
NIH Sponsored Travel Award: Math Cognition and Learning Conference	2017
Boston College Dissertation Fellowship	Spring 2017
Natural Science and Engineering Research Council of Canada (NSERC) Postgraduate Scholarship	2014 – 2016
Qualtrics Behavioral Research Grant ($2000, Role: PI)	2015
NIH Sponsored Travel Award: Math Cognition and Learning Conference	2015
NSF Sponsored Poster Award: International Mind, Brain, and Education Society Conference	2014
NSERC Undergraduate Student Research Award, Advisor: Daniel Ansari	2011

Journal Articles

Hurst, M. A., & Cordes, S. (2018). Children's understanding of fraction and decimal symbolic magnitudes and its relationship to pre-algebra ability, *Journal of Experimental Child Psychology,* 168, 32-48. doi: 10.1016/j.jecp.2017.12.003.

Hurst, M. A., & Cordes, S. (2018). Attending to Relations: Proportional reasoning in 3- to 6-year-old children, *Developmental Psychology. doi:* 10.1037/dev0000440

Hurst, M. & Cordes, S. (2017). A systematic investigation of the relationship between rational number processing and algebra ability. *British Journal of Psychology.* doi: 10.1111/bjop.12244

Hurst, M., & Cordes, S. (2017). Working Memory Strategies During Rational Number Magnitude Processing. *Journal of Educational Psychology.* doi: 10.1037/edu0000169

Hurst, M., Anderson, U., & Cordes, S. (2017). The Acquisition of Mappings Among Number Words, Written Numerals, and Quantities in Preschoolers, *Journal of Cognition and Development,* 18(1), 41-62. doi: 10.1080/15248372.2016.1228653

Hurst, M., & Cordes, S. (2016). Rational Number Comparison Across Notation: Fractions, Decimals, and Whole Numbers. *Journal of Experimental Psychology: Human Perception and Performance, 42*(2), 281-293. doi: 10.1037/xhp0000140

This paper was also featured in the May 2016 issue of APA PeePs (Particularly exciting experiments in Psychology), entitled *Magnitude Comparison with Fractions.*

Hurst, M., Monahan, K.L., Heller, E., & Cordes, S. (2014). 123s & ABCs: Developmental Shifts in Logarithmic to Linear Responding Reflect Fluency with Sequence Values, *Developmental Science, 17*(6), 892-904. doi: 10.1111/desc.12165

Chapters

Hurst, M. & Cordes, S. (2017). When being good at math isn't enough: How students' beliefs about the nature of mathematics impact decisions to pursue optional math education. In U. Xolocotzin (Ed.), *Understanding Emotions in Mathematical Thinking and Learning.*

Conference Proceedings

Hamamouche, K., **Hurst, M.,** & Cordes, S. (2016). The Effect of Emotion and Induced Arousal on Numerical Processing. In Papafragou, A., Grodner, D., Mirman, D., & Trueswell, J.C. (Eds.), *Proceedings of the 38th Annual Conference of the Cognitive Science Society* (pp. 1733-1738). Philadelphia, PA: Cognitive Science Society.

Hurst, M., Relander, C., & Cordes, S. (2016). Biases and Benefits of Number Lines and Pie Charts in Proportion Representation. In Papafragou, A., Grodner, D., Mirman, D., & Trueswell, J.C. (Eds.), *Proceedings of the 38th Annual Conference of the Cognitive Science Society* (pp. 586-591). Philadelphia, PA: Cognitive Science Society.

Manuscripts

Hurst, M. A., & Cordes, S. (under review). Talking about proportion: Fraction labels impact numerical interference in non-symbolic proportional reasoning

Hurst, M. A., Boyer, T., & Cordes, S. (in preparation). Spontaneous and Directed Attention to Number and Proportion

Hurst, M. A., Santry, M., Relander, C., & Cordes, S. (in preparation). Alignment between Distinct Spatial and Symbolic Representations of Proportion

Academic Talks

Hurst, M.*, & Cordes, S. (2017, May). The role of verbal fraction labels in children's whole number bias. Presented within the symposium titled *Language and Math: Guiding Attention in Numerical Contexts* at the *Association for Psychological Science Annual Meeting,* Boston, MA.

*Symposium organizer and Chair

Hurst, M. (2016, October). Children's and Adults' Reasoning about Informal Proportions and Formal Fractions. Presented to Susan Levine's *Cognitive Development Lab* at University of Chicago, Chicago, IL.

Hurst, M. (2016, August). Representing Proportion: How people process proportional information in symbolic and non-symbolic forms. Presented at *Temple University*, Philadelphia, PA.

Hurst, M. (2016, May). Proportion Representation: Biases and Benefits of Number Lines and Pie Charts. Presented at the *Annual Boston College Graduate Research Day*, Chestnut Hill, MA.

Hurst, M. (2015, May). Young Children's Proportional Reasoning: The Case of Counting Interference. Presented at the *Annual Boston College Graduate Research Day*, Chestnut Hill, MA.

Hurst, M. (2014, May). Working Memory Strategies in a Rational Number Magnitude Task. Presented at the *Annual Boston College Graduate Research Day*, Chestnut Hill, MA.

Hurst, M. (2013, May). Adults Understanding of Fractions and Decimals. Presented at the *Annual Boston College Graduate Research Day*, Chestnut Hill, MA.

Hurst, M. (2011, June). A Fundamental Number Sense: an introduction to numerical comprehension in children. Presented at the *Canadian Undergraduate Mathematics Conference*, Université Laval, Quebec City, Quebec.

Conference Posters

Hurst, M., DeWolf, M. & Cordes, S. (2017, October). Aligning Fractions and Decimals with Discrete and Continuous Contexts in 3rd to 5th grade children. Poster presented at the *Biennial Meeting of the Cognitive Development Society,* Portland, OR.

Hurst, M., & Cordes, S. (2017, May). The Role of Verbal Fraction Labels in Children's Whole Number Bias. Poster presented at the *Math Cognition Conference,* Nashville, TN.

Hurst, M., Relander, C., & Cordes, S. (2016, August). Biases and Benefits of Number Lines and Pie Charts in Proportion Representation. Poster presented at the *Cognitive Science Society,* Philadelphia, PA.

Hurst, M., & Cordes, S. (2015, October). Reasoning with Continuous and Discrete Proportions in 4 to 8 year old Children. Poster presented at the *Biennial Meeting of the Cognitive Development Society,* Columbus, OH.

Hurst, M., & Cordes, S. (2015, May). Working Memory Strategies During Rational Number Magnitude Processing Predict Algebraic Ability. Poster presented at the *Math Cognition Conference,* St. Louis, MO.

Hurst, M., & Cordes, S. (2014, November). The Impact of Working Memory Interference on Fraction and Decimal Magnitude Processing. Poster presented at the *International Mind, Brain, and Education Society Conference*, Fort Worth, TX.

Hurst, M. & Cordes, S. (2013, October). An integrated rational number system and its relationship to algebra ability. Poster presented at the *Biennial Meeting of the Cognitive Development Society*, Memphis, TN.

Teaching Experience

*Full Teaching Portfolio available upon request

Apprenticeship in College Teaching (ACT) Program — 2013 - 2017
Boston College, Center for Teaching Excellence

Instructor, Boston College
PS120: Introduction to Behavioral Research and Statistics I — Summer 2016

Teaching Assistant, Boston College, for the following courses:

PS274: Sensation and Perception — Fall 2016

PS121: Introduction to Behavioral Research and Statistics II — Spring 2014
Lectures: two sections taught weekly

PS341: Psychology of Morality — Fall 2013
Lecture: "Development of Morality: Infants and Toddlers"

PS121: Introduction to Behavioral Research and Statistics II — Spring 2013
Lectures: one section taught weekly

PS110: Introduction to Psychology as a Natural Science — Fall 2012

Guest Lecture, Boston College

PS341: Psychology of Morality — Spring 2016
Lecture: "Moral Development: Infants and Toddlers"

Mentorship

Undergraduate Thesis Advisor, Boston College — 2013 – Present

Alam, A. (in progress: 2017/2018). How children attend to relations during proportional reasoning: Exploring the effects of gesture.

Kuron, A. (2016/2017). The Impact of Verbal Labels on Fraction Understanding.

Santry, M. (2016/2017). Spontaneous Alignment Between Symbolic and Spatial Representations of Fractions.

Brosnan, N. (2015/2016). The Relationship Between Abstract Thinking and Parent Instructional Choices for Teaching About Fractions.

Slotter, C. (2015/2016). The Subjectivity of Math Attitudes: An investigation into student attitudes toward math oriented subjects.

Greisser, C. (2014/2015). Fraction Distraction: The Effect of Rational Numbers in Word Problems.

Miller, K. (2014/2015). Examining the Perceived Association between Antisocial Personalities and Math Professions.

Massaro, M. (2013/2014). Mental Representations of Rational Numbers and How External Visual References Impact Them.

Szczerepa, A. (2013/2014). "Who Got More?" The Effects of Ownership and Perceived Deservingness on Children's Number Estimates.

Activities

Ad Hoc Reviewer

Cognition - Cognitive Science - Contemporary Educational Psychology - Experimental Psychology - Journal of Cognition and Development - Journal of Educational Psychology - Journal of Experimental Psychology: Learning, Memory, and Cognition - Journal of Numerical Cognition - Mind, Brain, and Education

Reviewer: Collaborative Replications and Education Project (CREP: https://osf.io/wfc6u/)
Occasionally review student proposals for participation in the CREP program, which encourages undergraduate education through experiment replication using the OSF as a platform

Graduate Research Day Organizing Committee 2012 – 2017

Organizer and facilitator for Boston College's Graduate Research Day, a one-day conference for graduate students to present their research to department faculty, students, and staff

Graduate Student Mentor and Volunteer *2012 – 2017*

Occasional volunteering for science outreach and mentorship events, including Brain Awareness Week for elementary school children, Resume workshops and Q&A panels for undergraduates