

Pooja Gupta Sidney

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Kent State University
Department of Psychological Sciences
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EDUCATION

PhD, Psychology, University of Wisconsin – Madison 2016
*Dissertation: Does new learning provide new perspectives on familiar concepts?
 Exploring the role of analogical instruction in conceptual change in arithmetic*
 Major Advisor: Dr. Martha W. Alibali

MS, Psychology, University of Wisconsin – Madison 2009

BS, Psychology, University of North Carolina – Chapel Hill 2008

CURRENT POSITION

Postdoctoral Research Associate, Kent State University
*Funded by a US Department of Education Institute of Education Sciences Grant:
 Cognitive Support for Fraction Magnitudes; PI: John Opfer, (The Ohio State University),
 Co-PI: Clarissa A. Thompson (Kent State University)*
 Advisor: Dr. Clarissa A. Thompson

EXTRAMURAL PROPOSALS PENDING REVIEW

U.S. Department of Education, Institute of Education Sciences (IES) 2017
*Assessing the Impact of Area and Number Line Models for Learning and Transfer of Fraction
 Multiplication and Division in Fifth Grade. [\$1,400,000]*
 Role: Co-PI; PI: Dr. Clarissa A. Thompson; Co-PI: Dr. Ferdinand Rivera

National Science Foundation (NSF) 2017
*Collaborative Research: Comparing Area Models and Number Lines for Processing Fifth Grade
 Fraction Arithmetic Tasks of Different Depths of Knowledge [\$1,500,000]*
 Role: Co-PI; PI: Dr. Clarissa A. Thompson; Co-PI: Dr. Ferdinand Rivera

AWARDS, HONORS, AND FELLOWSHIPS

Marian Schwartz Fellowship 2014
*A competitive \$4,000 research fellowship to support graduate student research in
 cognitive and experimental psychology, UW-Madison Psychology Department*

University Fellowship 2008 & 2014
*A competitive, two-year fellowship award, including a 9-month stipend and tuition
 remission, UW-Madison Graduate School*

IES Interdisciplinary Training Program in the Education Sciences Entry Fellowship 2008 – 2013
A competitive fellowship; this program aimed to train social scientists (i.e., in psychology, sociology, social work, political science, and economics) to conduct field-based experimental research on topics in education; fellows receive a yearly stipend, tuition remission, and research and travel support, UW-Madison

University Housing Honored Instructor Award 2012
An award for “outstanding classroom instructors” nominated by an undergraduate student living in university housing, UW-Madison University Housing

NSF Graduate Research Fellowship Program, Honorable Mention 2009 & 2010
The NSF awards an Honorable Mention for graduate students whose research proposals had great merit, but did not receive the fellowship, NSF

Dashiell-Thurstone Prize 2008
An award for best senior honors thesis in Psychology, University of North Carolina at Chapel Hill Psychology Department

JOURNAL ARTICLES

Cooper, J. L., **Sidney, P. G.**, & Alibali, M. W. (in press). Who benefits from diagrams and illustrations in math problems? Ability and attitudes matter. *Applied Cognitive Psychology*.

Thompson, C. A., Morris, B., & **Sidney, P. G.** (2017). Are books like number lines? Children spontaneously encode spatial-numeric relationships in a novel spatial estimation task. *Frontiers in Psychology*, 8. DOI: 10.3389/fpsyg.2017.02242

Sidney, P. G., & Alibali, M. W. (2017). Creating a context for learning: Activating children’s whole number knowledge prepares them to understand fraction division. *Journal of Numerical Cognition*, 3(1), 31-57. DOI: 10.5964/jnc.v3i1.71

Grammer, J. K., Coffman, J. L., **Sidney, P. G.**, & Ornstein, P. A. (2016). Linking teacher instruction and student achievement in mathematics: The role of teacher language. *Journal of Cognition and Development*, 17(3), 468-485. DOI: 10.1080/15248372.2015.1068777 (2 citations)

Hattikudur, S., **Sidney, P. G.**, & Alibali, M. W. (2016). Does comparing informal and formal procedures promote mathematics learning? The benefits of bridging depend on attitudes towards mathematics. *Journal of Problem Solving*, 9(1), Article 2. DOI: 10.7771/1932-6246.1180 (1 citation)

Sidney, P. G., Hattikudur, S., & Alibali, M. W. (2015). How do contrasting cases and self-explanation promote learning? Evidence from fraction division. *Learning and Instruction*, 40, 29-38. DOI: 10.1016/j.learninstruc.2015.07.006 (9 citations)

Sidney, P. G., & Alibali, M. W. (2015). Making connections in math: Activating a prior knowledge analogue matters for learning. *Journal of Cognition and Development, 16*(1) 160-185. DOI:10.1080/15248372.2013.792091 (14 citations)

INVITED COMMENTARY

Sidney, P. G., Thompson, C. A., Matthews, P. G., & Hubbard, E. M. (2017). From continuous magnitudes to symbolic numbers: The centrality of ratio. *Behavioral and Brain Sciences*. DOI: 10.1017/S0140525X16002284

Alibali, M. W., & **Sidney, P. G.** (2015). Variability in the natural number bias: Who, when, how, and why?. *Learning and Instruction, 37*, 56-61. DOI: 10.1016/j.learninstruc.2015.01.003 (14 citations)

BOOK CHAPTERS

Sidney, P. G., Thompson, C. A., & Opfer, J. E. (accepted). Development of fraction understanding. Chapter to appear in Dunlosky, J. & Rawson, K. (Eds.) *Cambridge Handbook of Cognition and Education*.

Alibali, M. W., & **Sidney, P. G.** (2015). The role of intraindividual variability in learning in childhood and adolescence. In M. Diehl, K. Hooker, & M. Sliwinski (Eds.) *Handbook of intraindividual variability across the lifespan* (pp. 84-102). New York, NY: Taylor and Francis.

PUBLISHED CONFERENCE PROCEEDINGS

Sidney, P. G., & Alibali, M. W. (2013). Children's and adults' models of whole number division: Consistency or variability?. In M. V. Martinez, & A. C. Superfine (Eds.) *Proceedings of the 35th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Chicago, IL: University of Illinois at Chicago.

Sidney, P. G., & Alibali, M. W. (2012). Supporting conceptual representations of fraction division by activating prior knowledge domains. In L.R. Van Zoest, J.-J. Lo, & J. L. Kratky (Eds.) *Proceedings of the 34th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (1012). Kalamazoo, MI: Western Michigan University.

Hattikudur, S., **Sidney, P. G., & Alibali, M. W.** (2010, August). Unique and additive effects of self-explaining and contrasting cases on learning fraction division [Abstract]. *Proceedings of the 32nd Annual Conference of the Cognitive Science Society* (p584). Portland, OR: Cognitive Science Society.

MANUSCRIPTS UNDER REVIEW/REVISION***Undergraduate Student Authors**

Sidney, P. G., & Alibali, M. W. (under review). Learning about fraction division with implicit and explicit analogies to whole numbers.

Sidney, P. G., Thalluri, R. *, Buerke, M. *, & Thompson, C. A. (under review). Who uses more strategies? Linking mathematics anxiety to adults' strategy variability and performance on fraction magnitude tasks.

INVITED TALKS

Interdisciplinary Training Program in Education Sciences Seminar February 2016
University of Wisconsin –Madison

Cognitive Brown Bag, Department of Psychological Sciences January 2016
Kent State University

Psychology Department January 2016
Carnegie Mellon University

Interdisciplinary Training Program in Education Sciences Seminar March 2012
University of Wisconsin –Madison

CONFERENCE PRESENTATIONS***Undergraduate Student Authors**

Opfer, J. E., **Sidney, P. G.,** Yu, S., & Thompson, C. A. (2017, October). *Effects of cognitive supports for learning fractional magnitudes by analogy*. Poster to be presented at the biennial meeting of the Cognitive Development Society, Portland, OR.

Thalluri, R. *, Buerke, M. *, **Sidney, P. G.,** & Thompson, C. A. (2017, April). *The role of mathematics anxiety in students' fraction magnitude comparison*. Poster presented at the annual meeting of the Midwestern Psychological Association, Chicago, IL.

Sidney, P. G., & Alibali, M. W. (2017, April). *Learning about fraction division via implicit and explicit analogies to whole numbers*. Poster presented at the biennial meeting of the Society for Research in Child Development, Austin, TX.

Sidney, P. G., & Alibali, M. W. (2015, October). *Conceptual change in children's number categories: The integration of fraction and whole number knowledge*. Poster presented at the biennial meeting of the Cognitive Development Society in Columbus, OH.

Sidney, P. G., & Alibali, M. W. (2015, April). *Creating contexts for fraction learning by activating relevant prior knowledge*. Paper presented at the annual meeting of the American Educational Research Association in Chicago, IL.

- Sidney, P. G. & Alibali, M. W.** (2015, March). *Measuring conceptual change in mathematics: Could learning about fractions provoke changes in arithmetic categories?*. Poster presented at the biennial meeting of the Society for Research in Child Development, Philadelphia, PA.
- Sidney, P. G., Brown, S. A., Crooks, N. M., & Alibali, M.W.** (2013, October). *Beyond instruction: Sources of conceptual knowledge and new strategies in mathematics*. Poster presented at the biennial meeting of the Cognitive Development Society in Memphis, TN.
- Alibali, M. W. & **Sidney, P. G.** (2013, August). Paths of continuity and change in mathematics learning: Evidence from perceptual and analogical learning. In T. Nunes & S. Vosniadou (Chairs), *Continuity and change in the growth of children's mathematical understanding*. Invited symposium conducted at the 15th Biennial EARLI Conference for Research on Learning and Instruction, Munich, Germany.
- Sidney, P. G. & Alibali, M. W.** (2013, July). *Conceptual change in mathematics: Learning about fractions may provoke changes in children's prior whole number knowledge*. Poster presented at the Midwestern Meeting for Mathematical Thinking, Minneapolis, MN.
- Sidney, P. G., Chan, Y.-C.*, & Alibali, M. W.** (2013, April). *Developing operation sense: Children's and adults' arithmetic with countable and uncountable amounts*. Poster presented at the biennial meeting of the Society for Research in Child Development, Seattle, WA.
- Cooper, J. L., Nathan, M. J., Clinton, V., **Sidney, P. G.**, & Alibali, M. W. (2012, April). Design principles for the integration of visual and verbal information in a math curriculum. In M.J. Nathan (Chair), *Bridging research and practice: From cognitive principles to design principles of curriculum, instruction, and assessment*. Symposium conducted at the meeting of the American Educational Research Association, Vancouver, Canada.
- Cooper, J., Clinton, V., **Sidney, P.**, Alibali, M., Nathan, M. (2011, October). *Visuals in mathematics problem solving: When are the benefits?* Poster presented at the 7th biennial meeting of the Cognitive Development Society in Philadelphia, PA.
- Crooks, N. M., **Sidney, P. G.**, Hattikudur, S., Alibali, M. W. (2011, October) *Sources of conceptual knowledge in the development of mathematical reasoning*. Poster presented at the 7th biennial meeting of the Cognitive Development Society in Philadelphia, PA.
- Sidney, P. G. & Alibali, M. W.** (2011, April). *Making connections in math: Effects of analogue choice, linking, and prior knowledge on learning*. Poster presented at the meeting of the Society for Research in Child Development, Montreal, CA.
- Sidney, P. G., Hattikudur, S., & Alibali, M. W.** (2011, April). *Unique and additive effects of self-explaining and contrasting cases on learning fraction division*. Poster presented at the meeting of the Society for Research in Child Development, Montreal, CA.

Hattikudur, S., **Sidney, P. G.**, & Alibali, M. W. (2010, August). *Unique and additive effects of self-explaining and contrasting cases on learning fraction division*. Poster presented at the 32nd Annual Conference of the Cognitive Science Society in Portland, OR.

Sidney, P. G. & Alibali, M. W. (2010, June) *Building mathematical understanding through analogical transfer*. Poster presented at the 5th Annual IES Research Conference in Washington, DC.

Hattikudur, S., **Sidney, P. G.**, & Alibali, M. W. (2009, October) *Making connections: Activating students' prior knowledge during a new lesson*. Poster presented at the 6th biennial meeting of the Cognitive Development Society in San Antonio, TX.

Nathan, M. J., Church, R. B. **Sidney, P. G.**, Wolfgram, M., Johnson, C. V., Bieda, K., Hostetter, A.B., Jacobs, S., Knuth, E., & Alibali, M. (2009, June). *How teachers link mathematical ideas during instructional communication*. Poster presented at the 5th Annual IES Research Conference in Washington, DC.

Grammer, J. K., **Sidney, P. G.**, Mugno, A. P., Lee, S., Langley, H. A., Coffman, J. L., & Ornstein, P. A. (2009, April). *A longitudinal exploration of children's multiple strategy use in the context of the elementary school classroom*. Poster presented at the meeting of the Society for Research in Child Development, Denver, CO.

Coffman, J. L., **Gupta, P.**, Grammer, J. K., & Ornstein, P. A. (2008, March). *Classroom contexts and children's cognitive growth: A longitudinal picture of memory strategies and academic achievement*. Poster presented at the meeting of the American Educational Research Association, New York, NY.

PROFESSIONAL DEVELOPMENT

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| Writing Club Workshop by Prof. John Dunlosky
<i>A weekly summer workshop in which we discussed strategies for improving manuscript writing, KSU Dept. of Psychological Sciences</i> | Summer 2017 |
| Roundtable on "Flipping the Classroom: Benefits and Challenges"
<i>A round table discussion of the philosophy and implementation of "flipped" instruction, UW-Madison Delta Program</i> | Fall 2012 |
| Symposium on Grading: From Philosophy to Practice
<i>A day-long seminar discussing the purpose of testing and grading, the role of grades in the university and beyond, and assessments that meet university goals, UW- Madison Teaching Academy</i> | Fall 2012 |
| Doing Bayesian Data Analysis by Prof John K. Kruschke
<i>A two-day seminar on doing Bayesian data analyses for psychological Experiments in R, UW-Madison Psychology Department</i> | Summer 2012 |

Graduate Assistants' Equity Workshops for Teaching Assistants Spring 2012
A workshop addressing the role of diversity in classroom learning and the rights of protected classes of students, UW- Madison Office for Equity and Diversity

TEACHING EXPERIENCE

Psychological Foundations of Education (Instructor, Kent State University) 2017
Designed and led an online-only summer course in Blackboard learn for students in the KSU Masters of Arts in Teaching program

Graduate Course in General Linear Modeling I, II (Lab Instructor, UW-Madison) 2013, 2014
Designed and delivered lab instruction and activities in R; designed and evaluated assignments, and exams

Experimental Psychology (Teaching Assistant, UW-Madison) 2012
Delivered instruction as directed; supervised independent research projects; graded writing assignments

Cognitive Development Depth Course (Teaching Assistant, UW-Madison) 2011, 2012
Assisted in creating assignments and exams; led 2-3 weekly small group discussion sections; lectured occasionally; graded papers and exams

MENTORSHIP

Undergraduate Research Assistants, Kent State University

<u>Name</u>	<u>Current Position</u>	<u>Years Mentored</u>
Rajaa Thalluri	Research Technician, Cleveland Clinic	2016 – 2017
Morgan Buerke	Undergraduate, KSU	2016 – 2017

Undergraduate Research Assistants, University of Wisconsin – Madison

<u>Name</u>	<u>Current Position</u>	<u>Years Mentored</u>
Jenny Chan	PhD student in Developmental Psych., U of Minnesota	2010 – 2012
Joana Bielefeld	PhD student in Kinesiology, UW-Milwaukee	2013
Samantha Azuma	Masters student, Social Work, UW-Madison	2014 – 2015
Laura Newman	Private sector	2014 – 2015
Beatrice Lee	PhD student, Rehab Psych. and Special Ed., UW-Madison	2014 – 2015
Kayla Diffie	Masters student, Mental Health Counseling, Valparaiso	2014 – 2015
Jessica Foley	EdS student, School Psychology, Illinois State	2015 – 2016
Haley Beers	Undergraduate, UW-Madison	2015 – 2016

UW Pre-College Enrichment Opportunity Program for Learning Excellence – Program Interns
The UW PEOPLE program serves middle- and high-school students of color and/or those from low-income families with the mission to support students' successful transition to college. The

internship occurs during the summer before students apply to college, in a field of their choice at the UW-Madison.

2 students in 2009

3 students in 2010

SERVICE

Graduate student representative to the Climate and Diversity Committee, 2011 - 2014
UW-Madison Psychology

Presided sessions at a meeting of Psychology of Mathematics Education – 2012
North American Chapter

AD HOC JOURNAL REVIEWS

Child Development, Developmental Psychology, Developmental Science, Learning and Individual Differences, Learning and Instruction, Journal of Experimental Psychology: Applied