

Alliance to Advance Liberal Arts Colleges Faculty Workshop Proposal 2015

Title: Mentoring research in developmental psychology in the liberal arts college environment

Location & Date: Williams College, Summer 2015 (2 days)

Workshop leaders:

Mariko Moher, Assistant Professor of Psychology, Williams College

Anna Shusterman, Associate Professor of Psychology, Wesleyan University

Other faculty members assisting in planning:

Hilary Barth, Associate Professor of Psychology, Neuroscience, and Behavior, Wesleyan University

Jill de Villiers, Sophia & Austin Smith Professor of Psychology & Philosophy, Smith College

Peter de Villiers, Sophia & Austin Smith Professor of Psychology, Smith College

Koleen McCrink, Assistant Professor of Psychology, Barnard College

Jennie Pyers, Associate Professor of Psychology, Wellesley College

Ann Senghas, Professor of Psychology, Barnard College

Workshop liaison:

Mariko Moher

Assistant Professor of Psychology, Williams College

mariko.moher@williams.edu

(413) 597-4476

Description of proposed workshop (496 words):

Over the last four years, developmental psychologists from several small liberal arts colleges in the northeast (Barnard, Smith, Wellesley, Wesleyan, Williams) have been bringing our laboratory groups together for informal workshops to discuss our research. For 2015, we propose to expand this event to include faculty from additional AALAC institutions. The focus of the meeting will be how to effectively carry out research in the liberal arts environment, with meaningful undergraduate participation.

Small liberal arts institutions are in a unique position to train undergraduate students to think and work as scientists. Without graduate students and post-docs in research labs, undergraduates work directly with faculty, carrying out research. Students can be more involved at every phase of research and can take greater ownership of specific projects. If faculty manage their lab groups effectively, this arrangement can contribute substantially to their research program, while providing mentorship to students through research assistantships, independent research projects, and senior theses. Developmental psychology research provides many roles for student researchers, as the work typically requires large cooperative teams to coordinate and run experiments. However, eliciting useful data from children, maintaining good relations with participating families and schools, and designing good experiments takes skill and training. For developmental psychology faculty running a small research laboratory, being able to mentor undergraduates well doesn't just make you a good educator; it is essential for producing good research.

The purpose of our workshop is to provide an opportunity for faculty to mentor each other about how to provide effective undergraduate mentorship. It is about mentoring how to mentor. The organizers come from a variety of backgrounds; some have been successfully running a lab in a liberal arts college or have had undergraduate experience in such labs, while others were undergraduates at research universities or are junior faculty setting up laboratories for the first time.

Specific discussion sessions will include topics such as balancing short-term mentoring with long-term projects, productive summer programs, and involving students from groups underrepresented in the sciences. Participants will indicate interests before the meeting; organizers will then create smaller groups to maximize diversity of experience and cross-pollination.

Prepared talks will focus on the types of work we have done with undergraduates within an apprenticeship model of learning. As in previous years, local summer students will participate in a one-day session to discuss ongoing research in a roundtable format.

The ultimate goal of the workshop is to engender lasting relationships with faculty at peer institutions so that we can mentor each other to become more productive researchers and teachers. After the workshop, we will carry out a self-assessment to ascertain the impact of the various sessions and set up online forums to facilitate ongoing collaborations and peer faculty mentorship beyond the period of the meeting.

Day 1:

12pm: meet and greet, lunch

1pm: research talks

3pm: breakout session 1

4:30pm: breakout session 2

6:30pm: dinner

Day 2:

9:30am: research talks

10:30am: breakout session 3

12pm: lunch

1:30 pm: breakout session 4

3pm: wrap-up and final group discussion

Budget:

Stipend for workshop organizers (to be shared)	\$500
Travel & accommodation for organizing committee and other AALAC participants	
Mileage	\$150 @ 8 cars = \$1200
Airfare & travel from Albany to Williamstown	\$600 @ 6 participants = \$3600
Lodging (1 night)	\$100 @ 20 participants = \$2000
Food (2 lunches, 1 dinner, and refreshments)	\$1500
Translators for American Sign Language	\$1000
Administrative expenses	\$100
Total	\$9,900

HILARY BARTH, PH.D.

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<http://hbarth.faculty.wesleyan.edu/>

ACADEMIC APPOINTMENTS

<i>Associate Professor</i> , Department of Psychology, Wesleyan University	2012-
<i>Assistant Professor</i> , Department of Psychology, Wesleyan University	2005-2012
<i>Research Associate</i> , Department of Psychology, Harvard University	2004-2005
<i>Visiting Assistant Professor</i> , Department of Psychology, Wellesley College	2004-2005
<i>Postdoctoral Fellow</i> , Department of Psychology, Harvard University	2002-2004

EDUCATION

Postdoctoral training, Laboratory for Developmental Studies Department of Psychology, Harvard University	2002-2005
Ph.D. in Cognitive Neuroscience Department of Brain & Cognitive Sciences, MIT	2002
A.B. <i>magna cum laude</i> in Psychology, Neural/Behavioral Sciences concentration Department of Psychology, Bryn Mawr College	1996

SELECTED GRANTS & FELLOWSHIPS

Mattel Philanthropic Programs: Play Research Grant (\$18,500 direct) <i>Understanding the power of play</i> (co-PI with Drs. Anna Shusterman & Emily Slusser)	2011-2012
NSF CAREER Award DRL-0950252 (\$756,857 total) <i>Magnitude biases in mathematical cognition, learning, & development</i>	2010-2015
Mellon Faculty Career Enhancement Summer Stipend Grant (\$7,500 direct)	2006
Postdoctoral Fellowship, NAE/Spencer Foundation (\$50,000 direct)	2003-2004
Graduate Fellowship, Claire Booth Luce Program (\$25,000 direct)	1998-1999

PUBLICATIONS – Peer-reviewed empirical articles

(*Students in italics*; postdoctoral fellows underlined)

Barth, H., *Bhandari, K.*, Garcia, J., *MacDonald, K.*, & Chase, E. (2014). Preschoolers trust novel members of accurate speakers' groups and judge them favorably. *Quarterly Journal of Experimental Psychology* 67, 872-883.

MacDonald, K., Schug, M.G., Chase, E., & **Barth, H.** (2013). My people, right or wrong? Minimal group membership disrupts preschoolers' selective trust. *Cognitive Development* 28, 247-259.

Slusser, E.B., *Santiago, R.T.*, & **Barth, H.** (2013). Developmental change in numerical estimation. *Journal of Experimental Psychology: General* 142, 193-208.

- Schug, M.G., Shusterman, A., **Barth, H.**, & Patalano, A.L. (2013). Minimal group membership influences children's responses to novel experiences with group members. *Developmental Science* 16, 47-55.
- Sullivan, J., & **Barth, H.** (2012). Active (not passive) spatial imagery primes temporal judgments. *Quarterly Journal of Experimental Psychology*, 65, 1101-1109.
- Sullivan, J., Juhasz, B., Slattery, T., & **Barth, H.** (2011). Adults' number-line estimation strategies: evidence from eye movements. *Psychonomic Bulletin and Review*, 18, 557-563.
- Anderson, B.L., O'Vari, J., & **Barth, H.** (2011). Non-Bayesian contour synthesis. *Current Biology*, 21, 492-496.
- Barth, H.** & Paladino, A.M. (2011). The development of numerical estimation: Evidence against a representational shift. *Developmental Science*, 14, 125-135.
- Bhandari, K., & **Barth, H.** (2010). Show or tell: Testimony is sufficient to induce the curse of knowledge in three- and four-year-olds. *Quarterly Journal of Experimental Psychology*, 63, 209-215.
- Barth, H.**, Starr, A.B., & Sullivan, J. (2009). Children's mappings of large number words to numerical magnitudes. *Cognitive Development*, 24, 248-264.
- Barth, H.**, Baron, A., Spelke, E.S., & Carey, S. (2009). Children's multiplicative transformations of discrete and continuous quantities. *Journal of Experimental Child Psychology*, 103, 441-454 (special issue on the typical development of numerical cognition).
- Barth, H.** (2008). Judgments of discrete and continuous quantity: An illusory Stroop effect. *Cognition*, 109, 251-266.
- Barth, H.**, Beckmann, L., & Spelke, E.S. (2008). Nonsymbolic, approximate arithmetic in children: Evidence for abstract addition prior to instruction. *Developmental Psychology*, 44, 1466-1477.
- Cappelletti, M., **Barth, H.**, Fregni, F., Spelke, E.S., & Pascual-Leone, A. (2007). rTMS over the intraparietal sulcus disrupts numerosity processing. *Experimental Brain Research*, 179, 631-642.
- Barth, H.**, La Mont, K., Lipton, J., Dehaene, S., Kanwisher, N., & Spelke, E.S. (2006). Non-symbolic arithmetic in adults and young children. *Cognition*, 98, 199-222.
- Barth, H.**, La Mont, K., Lipton, J., & Spelke, E.S. (2005). Abstract number and arithmetic in preschool children. *Proceedings of the National Academy of Sciences*, 102, 14116-14121.
- Barth, H.**, Kanwisher, N., & Spelke, E.S. (2003). The construction of large number representations in adults. *Cognition*, 86, 201-221.
- Anderson, B.L., & **Barth, H.C.** (1999). Motion-based mechanisms of illusory contour formation. *Neuron*, 24, 433-441.

PUBLICATIONS – Book chapters and commentaries

- Barth, H.**, Slusser, E.B., Cohen, D., & Paladino, A.M. (2011). A sense of proportion: Commentary on Opfer, Siegler, & Young. *Developmental Science*, 14, 1205-1206.
- Barth, H.** (2008). Do mental magnitudes form part of the foundation for natural number concepts? Don't count them out yet. Commentary on Rips, Asmuth, & Bloomfield. *Behavioral & Brain Sciences*, 31, 644-645.
- Mordkoff, J. T., & **Barth, H.** (2001). Using pre-pulse inhibition to study attentional capture: a warning about pre-pulse correlations. In C. Folk and B. Gibson (Eds.), *Attraction, Distraction, and Action: Multiple Perspectives on Attentional Capture* (pp.177-190). Amsterdam: Elsevier.

Jill G. de Villiers

Curriculum Vitae

Degrees

B.Sc. in Psychology, Reading University, England, 1969.

Ph.D. in Experimental Psychology, Harvard University, 1974

Positions Held

Assistant Professor of Psychology, Harvard University, 1974–1979.

Associate Professor of Psychology and Philosophy, Smith College, 1979–1986.

Professor of Psychology and Philosophy, Smith College, 1986–1995.

Sophia and Austin Smith Professor of Psychology and Philosophy, 1995–present.

HONORS, AWARDS, AND SPECIAL RECOGNITION

NIH Human Development Study Section member, 1991–1995

Honored Professor award, Smith College, 2003.

Faculty Teaching award, Smith College, 2007.

Courses taught:

Linguistics

Language Acquisition

Philosophy and History of Psychology

Introduction to Psychology

Methods in Psychology

Seminars:

Language and Thought

Theory of Mind

Pragmatics and assessment

Assessment of language in a multicultural context

Animal cognition

Recent Grant Funding

co-P.I. Patterns of growth in Language and Theory of Mind

R01 as part of Program project, University of Texas at Houston, headed by Dr. Susan Landry. With Peter de Villiers

NIH \$6m September 2005–August 2010

Co-PI USING DEVELOPMENTAL SCIENCE TO DESIGN A COMPUTERIZED PRESCHOOL LANGUAGE ASSESSMENT. Institute for Education Sciences, June 2011–May 2015. With Roberta Golinkoff (U. Delaware), Kathy Hirsch-Pasek, Aquiles Iglesias (Temple University) and Mary Wilson (Laureate Learning Systems).

Publications

Recent Books

de Villiers, J.G. & Roeper, T.W. (2011) Handbook of Generative Approaches to Language Acquisition. Springer.

Selected Recent papers

de Villiers, J.G. & Garfield, J. (2009) Evidentiality and Narrative. In D. Hutto (ed) *Narrative Practice and Folk Psychology*, Special issue. *Journal of Consciousness Studies*.

de Villiers, J.G. , Garfield, J., Gernet Girard, H., Roeper, T. & Speas, P. (2009) Evidentials in Tibetan: Acquisition, semantics and cognitive development. In Fitneva, S. & Matsui, T. (eds) *Evidentiality: a window into language and cognitive development*. Special Issue: New directions for adolescent and child development. 125, 29–48.

Van Hout, A., Harrigan, K. & de Villiers, J.G. (2010) Asymmetries in the Acquisition of Definite and Indefinite Noun Phrases. In Petra Hendriks and Charlotte Koster (eds) *Special Issue on Asymmetries in Child Language, *Lingua*, 120 (8) 1973-1990*.

de Villiers, P.A., de Villiers, J.G., Picone, C-L., Wilkins A., Dinkins, E. & Burns, F. and School Readiness Research Consortium: (2010) Dialect and Narrative Skills in African American Preschoolers. In *Proceedings of the BUCLD, 2009*. Somerville: Cascadilla press.

de Villiers, J.G., de Villiers, P.A. & Roeper, T. (2010). Wh-questions: Moving beyond the first Phase. *Lingua*. 352-366

Roeper, T & de Villiers, J.G. (2011) The acquisition path for wh-questions. In de Villiers, J.G. & Roeper, T. (eds) *Handbook of Generative Approaches to Language Acquisition*. Springer.

de Villiers, P. A. & de Villiers, J.G. (2011) Deception dissociates from false belief in deaf children. *British Journal of Developmental Psychology*. 30, 188–209.

de Villiers, J. G., E. Harrington, E. Gadilaukas, & T. Roeper (2012). Tense and Truth in Children's Question Answering. In A. Biller, E. Chung, and A. Kimball (Eds.) *Proceedings of the 36th Annual Boston University Conference on Language Development*, Somerville, MA: Cascadilla Press.

de Villiers, J.G. & de Villiers, P.A. (2012) The Acquisition of Syntax. In Zelazo, P. (ed) *Handbook of Child Development*, Oxford University press.

de Villiers, J.G. (2013) Language and Reasoning about Beliefs. Chapter 2.05 in Banaji, M. R. & Gelman, S. A. (2013). *Navigating the social world: What infants, children, and other species can teach us*. New York: Oxford University Press.

de Villiers, J.G. Hobbs, K., & Hollebrandse, B. (2014) Recursive complements and propositional attitudes. In T. Roeper & P. Speas & (eds) *Recursion*.

Peter A. de Villiers

Curriculum Vitae (abbreviated)

BA (Philosophy, Theology & Biblical Studies)	Rhodes University, South Africa
BA (Philosophy & Psychology)	Oxford University, England
PhD (Experimental Psychology)	Harvard University, USA

Teaching Positions

Smith College:

1995 to present	Sophia and Austin Smith Professor of Psychology
1985-95	Professor of Psychology
1979-85	Associate Professor of Psychology

Harvard University:

1974-79	Assistant Professor of Psychology
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Honors

Distinguished Professor Award from Smith College (shared with Jill de Villiers). (award for outstanding research and teaching and contributions to Smith College)	2001
Rhodes Scholarship to Oxford University from South Africa	1967-1970

Teaching (Courses Taught since 2004)

PSY111	Introduction to Psychology
EDC567	English Language Acquisition and Deafness
PSY/PHI209	Philosophy and History of Psychology
PSY214	Disorders of Language and Communication
PSY216	Understanding Minds
PSY233	Child Development
PSY313	Seminar in Psycholinguistics: Child Language Assessment
PSY315	Autism Spectrum Disorders

Current Research Interests

Language acquisition, narrative and literacy development in normally-hearing and deaf children.
The effects of language acquisition on theory of mind development in deaf and language-impaired children.
African American English (AAE) dialect and narrative skills in African American children.
Non-literal language understanding and communication in individuals with autism spectrum disorders.
The acquisition of Xhosa as a first language by South African children.

Recent Publications (Since 2010)

Pyers, J. & de Villiers, P.A. (2013). Theory of mind in deaf children: Illuminating the relative roles of language and executive functioning in the development of social cognition. In S.

- Baron-Cohen, H. Tager-Flusberg, & M. Lombardo (Eds.), *Understanding other minds. Third Edition*. Oxford, UK: Oxford University Press.
- de Villiers, P.A. & *Masek, L. (2013). Literate language: A predictive measure of narrative language in low-income Hispanic preschoolers. In S. Baiz, N. Goodman, & R. Hawkes (Eds.), *BUCLD 37: Proceedings of the 37th annual Boston University Conference on Language Development*. (pp. 100-109). Somerville, MA: Cascadilla Press.
- de Villiers, J.G. & de Villiers, P.A. (2013). The acquisition of syntax. In P. Zelazo (Ed.), *Handbook of child development*. (pp. 526-552). Oxford, UK: Oxford University Press.
- Smouse, M., Gxilishe, S., de Villiers, J.G., & de Villiers, P.A. (2012). Children's acquisition of subject markers in isiXhosa. In M.P. Larranaga & P. Guijarro-Fuentes (Eds.), *Pronouns and clitics in early acquisition*. (pp. 209-236). Berlin: De Gruyter.
- Burns, F., de Villiers, P.A., Pearson, B., & Champion, T. (2012). Dialect neutral indices of narrative cohesion and evaluation. *Language, Speech and Hearing Services in Schools*, 43, 132-152.
- de Villiers, P.A. & de Villiers, J.G. (2012). Deception dissociates from false belief reasoning in deaf children: Implications for the implicit versus explicit theory of mind distinction. *British Journal of Developmental Psychology. Special Issue on Implicit Theory of Mind*. 30(1), 188-209.
- de Villiers, J.G., de Villiers, P.A., & Roeper, T. (2011). Wh-questions: Moving beyond the first Phase. *Lingua*, 121(3), 352-366.
- de Villiers, P.A., de Villiers, J.G., *Picone, C-L., *Wilkins, A., Dinkins, E., & Burns, F. (2010). Dialect and narrative skills in African American preschoolers. In K. Franich, K.M. Iserman, & L.L. Keil (Eds.), *BUCLD 34: Proceedings of the 34th annual Boston University Conference on Language Development*. Somerville, MA: Cascadilla Press. Pp. 114-125.
- de Villiers, P.A. & de Villiers, J.G. (2010). Assessment of language acquisition. *Wiley Interdisciplinary Reviews (WIREs): Cognitive Science*, 1(2), 230-244.

Recent Grant Support (since 2005)

2005-2011. *Language and Theory of Mind: Models of Change*.

Co-Principal Investigator with Jill de Villiers (Smith College)

R0-1 grant attached to a Program Grant from the National Institutes of Health to the University of Texas in Houston titled: "Preschool Curricula: Outcomes and Developmental Processes." (PI: Susan Landry).

\$440,000 direct costs to Smith College, total program grant award \$6.5million.

Program grant developing an integrated social-emotional, language and pre-reading, and quantitative skill curriculum that can be taught to the teachers of center-based childcare programs with low income.

Three research grants attached to the program grant are studying the developmental processes underlying the effects of the curriculum intervention, at the same time investigating theoretical accounts of pre-school children's emotional and executive function development, their language acquisition and its relationship to their theory of mind understanding, and their quantitative skills.

Koleen McCrink
Assistant Professor of Psychology
Barnard College, Columbia University

Work address:

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Barnard College- Psychology
Milbank Hall
New York, NY 10027

(212) 854-8893 (office)
(347) 268-0102 (cell)
kmccrink@barnard.edu

Degrees in Higher Education

Ph.D. Yale University, Psychology, 2007

M.Ph. Yale University, Psychology, 2004

M.S. Yale University, Psychology, 2003

B.A. Douglass College, Rutgers University, 2000

Additional Professional Training

Postdoctoral Harvard University, 2007 - 2009
Researcher Psychology Department

Visiting Researcher INSERM (Institut National de la Santé et de la Recherche Médicale),
Cognitive Neuroscience Unit, 2005
Studied infant ERP and adult psychophysical techniques

Selected Academic and Professional Honors

James Grossman Prize for Best Dissertation in Psychology (2007)
Yale University

Graduate Research Fellowship Honorable Mention (2002 & 2003)
National Science Foundation

Selected Publications

Journal Articles

McCrink, K., Shaki, S. & Berkowitz*, T. (2014). Culturally-Driven Biases in Preschoolers' Spatial Search Strategies. *Cognitive Development*, 30, 1-14.

Knops, A., Zitzmann, S. & McCrink, K. (2013). Examining the presence and determinants of operational momentum in childhood. *Frontiers in Psychology*, 4(325), doi: 10.3389/ fpsyg.2013.00325.

McCrink, K., Pica, P., Spelke, E.S., & Dehaene, S. (2012). Non-Symbolic Halving in an Amazonian Indigene Group. *Developmental Science*, 16(3), 451-462.

McCrink, K. & Spelke, E. (2010) Core multiplication in childhood. *Cognition*, 116, 204-216.

McCrink, K., & Wynn, K. (2009) Operational momentum in large-number addition and subtraction by 9-month-old infants. *Journal of Experimental Child Psychology*, 104, 400-408.

McCrink, K., Bloom, P. & Santos, L. (2009) Children's and adults' judgments of equitable resource distributions. *Developmental Science*, 13(1), 37-45.

McCrink, K., Dehaene, S., & Dehaene-Lambertz, G. (2007) Moving along the number line: The case for operational momentum. *Perception and Psychophysics*, 69(8), 1324-1333.

McCrink, K. & Wynn, K. (2007) Ratio abstraction by 6-month-old infants. *Psychological Science*, 18, 740-746.

vanMarle, K., Aw, J., McCrink, K. & Santos, L. (2006) How capuchin monkeys (*Cebus apella*) quantify objects and substances. *Journal of Comparative Psychology*, 120(4), pp. 416-426.

McCrink, K. & Wynn, K. (2004) Large-number addition and subtraction by 9-month-old infants. *Psychological Science*, 15, 776-781.

Grant Activity

Prior Awards Now Terminated:

Graduate Research Fellowship (2004 - 2007)

National Science Foundation

~\$75,000

NIH/NICHD R15 HD065629-01 McCrink (PI) 6/1/10-6/1/13

Intuitive Mathematical Operations in Infancy and Childhood

\$426,690

Active Grants:

NIH/NICHD 1R15 HD077518-01A1McCrink (PI) 5/1/14 - 5/1/17

The Interface of Learning and Spatial-Numerical Skills

\$415,616

MARIKO MOHER

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ACADEMIC APPOINTMENTS

Assistant Professor, Department of Psychology, Williams College, Williamstown, MA 2013-
College Fellow, Department of Psychology, Harvard University, Cambridge, MA 2011-2013
Faculty of the Citizen Science Program, Bard College, Annandale-on-Hudson, NY 2013

EDUCATION

Johns Hopkins University, Baltimore, MD
Ph.D. Psychological & Brain Sciences 2011
M.A. Psychological & Brain Sciences 2007
Yale University, New Haven, CT
B.A. Psychology (with distinction) 2005
Molecular Biophysics & Biochemistry

AWARDS & HONORS

Cognitive Development Society Minority Travel Award 2011, 2009, 2007
Elsevier / Vision Research Travel Award, Vision Science Society 2009
Society for Child Development Student Travel Award 2009
Johns Hopkins University J. Brien Key Award 2008
Johns Hopkins University Graduate Representative Organization Travel Fellowship 2008
Johns Hopkins University Krieger School of Arts & Sciences Endowed Fellowship 2007
National Science Foundation Graduate Research Fellowship 2006-2009
National Science Foundation Graduate Research Fellowship, Honorable Mention 2005
Psi Chi Allyn & Bacon Award, 3rd place 2005
Yale University Department of Psychology Robert G. Crowder Award 2005
Yale University Richter Summer Fellowship 2004

PUBLICATIONS

*Publications prior to 2010 appeared as Mariko Yamaguchi.

†denotes mentored undergraduate authors.

Tuerk, A. S., **Moher, M.**, Carey, S. E., & Feigenson, L. (in prep). Adults capitalize on structure to form efficient ensemble representations in working memory.

Moher, M. & Feigenson, L. (2013). Factors influencing infants' ability to update object representations in memory. *Cognitive Development*, 28(3), 272-289.

Moher, M., Tuerk, A. S.† & Feigenson, L. (2012). Seven-month-old infants chunk items in memory. *Journal of Experimental Child Psychology*, 112(4), 361-377.

- Moher, M., Feigenson, L. & Halberda, J. (2010).** A one-to-one bias and fast mapping support preschoolers' learning about faces and voices. *Cognitive Science*, 34, 719-751.
- Feigenson, L. & Yamaguchi, M. (2009).** Limits on infants' ability to dynamically update object representations. *Infancy*, 14(2), 244-262.
- Phillips, W. C., Barnes, J. L., Mahajan, N., Yamaguchi, M. & Santos, L. (2009).** 'Unwilling' versus 'unable': Capuchin monkeys' (*Cebus apella*) understanding of human intentional action. *Developmental Science*, 12(6), 938-945.
- Yamaguchi, M., Kuhlmeier, V. A., Wynn, K. & vanMarle, K. (2009).** Continuity in social cognition from infancy to childhood. *Developmental Science*, 12(5), 746-752.

TEACHING EXPERIENCE

Williams College

Introductory Psychology; Developmental Psychology; Foundations of Cognition

Harvard University

Intuitive Math in the Everyday Mind; Language & Thought

Bard College

Citizen Science Program

Johns Hopkins University

Psychology of Love, Attraction, and Attachment; Lab Analysis of Psychological Data

MENTORING EXPERIENCE

Williams College

2013-

Thesis student: Alida Davis '14

2 additional undergraduate students

Harvard University

2011-2013

3 undergraduate students, including 2 full-time summer interns

Johns Hopkins University

2005-2011

Thesis students: Rachel Austin '10, recipient of Julian C. Stanley Department Award

Arin Tuerk '08, recipient of G. Stanley Hall Department Award

recipient of Provost Undergraduate Research Award

14 additional undergraduate students, including 9 full-time summer interns

PROFESSIONAL ACTIVITIES

Ad-Hoc Reviewer

Cognition

Journal of Experimental Psychology: Human Perception and Performance

Professional Affiliations

Cognitive Development Society

International Society on Infant Studies

Society for Research in Child Development

Vision Sciences Society

6 Norfolk Terrace
Wellesley, MA 02482
Mob: 617-584-4350
Home: 781-235-2802
Email: jpyers@wellesley.edu
Web: <http://www.wellesley.edu/Psychology/Pyers/index.html>

Psychology Department
Wellesley College
Wellesley, MA 02481
Tel: 781-283-3736

JENNIE E. PYERS

EDUCATION

- Ph.D. **University of California, Berkeley**, Developmental Psychology, 2004
Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands, Visiting Researcher,
Language & Cognition, 2001-2002
Columbia University, New York, Exchange Scholar, Psychology, Fall 2000
A.B. **Smith College**, Northampton, MA, Art History, Film Studies, 1995
University of Hamburg, Germany, 1993-1994

ACADEMIC EMPLOYMENT

- July 2012 – present **Associate Professor**. Department of Psychology, Wellesley College
July 2006 – 2012 **Assistant Professor**. Department of Psychology, Wellesley College
2004 – 2006 **Postdoctoral Fellow**. Center for Research in Language, University of California,
San Diego, and the Laboratory for Cognitive Neuroscience at the Salk Institute
for Biological Sciences (2004-2005), and the Laboratory for Language and
Cognitive Neuroscience at San Diego State University (2005-2006).

EXTERNAL AWARDS & FELLOWSHIPS

- Marion Cabot Putnam Memorial Fellowship, Radcliffe Institute for Advanced Study**, \$72,000,
2009-2010
American Psychological Foundation/Council for Undergraduate Research Award, \$6,000, 2008
Women in Cognitive Science Travel Award, \$3000, 2005
NIH Postdoctoral Fellowship, University of California, San Diego, 2004-2006
Individual National Research Service Award, NIH Predoctoral Fellowship, 2001-2004

PUBLICATIONS UNDER REVIEW

- Kocab, A., Pyers, J., & Senghas, A. (under revision). *Referential shift in Nicaraguan Sign Language: A transition from lexical to spatial devices.*
Magid, R., & Pyers, J. (under revision). *Iconicity lends a hand in language learning only after children know it's there.*
Pyers, J., Perniss, P., & Emmorey, K. (under revision). *Viewpoint in the visual-spatial modality: The coordination of spatial perspective.*

SELECTED RECENT PUBLICATIONS

- Schmidt, E., & Pyers, J. (accepted). Hearing and deaf children's understanding seeing and hearing as sources of knowledge. *British Journal of Developmental Psychology.*
Pyers, J. & deVilliers, P. (2013). Theory of mind in deaf children: Illuminating the relative roles of language and executive functioning in the development of social cognition, in S. Baron-Cohen, H. Tager-Flusberg, and M. Lombardo (Eds.) *Understanding other Minds*, 3rd Edition. Oxford University Press.
Pyers, J., (2012). Sign languages, in V. Ramachandran (Ed.) *Encyclopedia of human behavior*, (2nd ed.): Vol. 3 (425-434). Academic Press.

- Schmidt, E., & Pyers, J. (2011). Children's understanding of the link between sensory perception and knowledge. In L. Carlson, C. Hoelscher, & T. Shipley (Eds.) *The proceedings of the 33rd annual meeting of the Cognitive Science Society* (3016-3021). Austin, TX: Cognitive Science Society.
- Pyers, J., Shusterman, A., Senghas, A., Spelke, E., & Emmorey, K. (2010). Evidence from an emerging sign language reveals that language supports spatial cognition. *Proceedings of the National Academy of Science*, *107*, 12116–12120.
- Pyers, J., Gollan, T., & Emmorey, K. (2009). Bimodal bilinguals reveal the source of tip of the tongue states. *Cognition*, *112*, 323-329.
- Pyers, J., & Senghas, A. (2009). Language promotes false-belief understanding: Evidence from Nicaraguan Sign Language. *Psychological Science*, *20*, 805-812.
- Emmorey, K., Luk, G., Pyers, J., & Bialystok, E. (2008). The source of cognitive control in bilinguals: Evidence from bimodal bilinguals. *Psychological Science*, *19*, 1201-1206.
- Pyers, J., & Emmorey, K. (2008). The face of bimodal bilingualism: Bilinguals produce ASL grammar while speaking English. *Psychological Science*, *19*, 531-536.

SELECTED CONFERENCE PRESENTATIONS & POSTERS

- Kocab, A., Pyers, J.E., & Senghas, A. (2013, July). *From gesture to language: The emergence of nonmanual markers in Nicaraguan Sign Language*. Poster presented at the 11th meeting of Theoretical Issues in Sign Language Research, London, UK.
- Hobbs, K., Resendes, W., Pyers, J. & Carey, S. (2013, April). *Is there a role for language in early Theory of Mind reasoning?* Poster presented at the biennial meeting of the Society for Research in Child Development, Seattle, WA.
- Magid, R., & Pyers, J. (2013, April). *Sensitivity to iconicity is not uniform*. Presented at symposium, M. Novak & J. Pyers (chairs), Iconicity in Gesture and Sign, at the biennial meeting of the Society for Research in Child Development, Seattle, WA.
- Magid, R., & Pyers, J. (2012, November). *Deaf and hearing preschoolers' use of iconicity: A modality-independent facilitative effect*. Paper presented at the 37th Annual Boston University Conference on Language Development, Boston, MA.
- Martin, A., Senghas, A., & Pyers, J. (2012, November). *Effects of delayed first-language acquisition on spatial cognitive skills: Evidence from signers of Nicaraguan Sign Language*. Paper presented at the 37th Annual Boston University Conference on Language Development, Boston, MA.
- Kocab, A., Senghas, A., & Pyers, J. (2012, July). *Facial gestures as a source of sign language nonmanual markers: Evidence (and counter-evidence) from Nicaraguan Sign Language*. Paper presented at the 5th meeting of the International Society of Gesture Studies, Lund, Sweden.
- Pyers, J., Magid, R., Emmorey, K., & Gollan, T. (2011, November). *The effect of spontaneous production of translation equivalents on lexical retrieval in ASL-English Bilinguals*. Poster presented at the annual meeting of the Psychonomic Society, Seattle, WA.
- Pyers, J., Lu, J., Magid, R., Gentner, D., Emmorey, K., (2011, November). *Acquisition of spatial language in American Sign Language is linked to spatial cognition*. Paper presented at the Boston University Conference on Language Development, Boston, MA.
- Schmidt, E., & Pyers, J. (2011, October). *Understanding the link between sensory perception and knowledge: A comparison of hearing and deaf children*. Paper presented at the biennial meeting of the Cognitive Development Society, Philadelphia, PA.

PRESS COVERAGE

ABC News, Discover Magazine, Marie Claire, New Scientist, RadioLab, Scientific American Mind, Süddeutsche Zeitung, Today's Scientist, USA Today, The Week

RESEARCH INTERESTS

Cognitive development; language development; Interactions between language and cognition; gesture; sign languages; bimodal bilingualism.

ANN SENGHAS

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Education

- 1995 Ph.D. Massachusetts Institute of Technology, 1990-1995
Brain and Cognitive Sciences
Dissertation: *Children's contribution to the birth of Nicaraguan Sign Language*
- 1986 A.B. Smith College, 1982-1986, Major: French, *cum laude*

Professional Experience in Higher Education

- 2014-present Professor, Department of Psychology, Barnard College.
Teaching includes *Introduction to Psychology* (35 students), *Developmental Psychology* (80 students), *Developmental Psychology with Laboratory* (44 students), *Science and Scientists* (15 students) and a graduate seminar in *Language Development* (15 students). Directing research laboratory in language acquisition, emergence, and change.
- 2011-2013 Tow Associate Professor of Psychology, Barnard College.
2010-2013 Department Chair, Department of Psychology, Barnard College.
2007-2011 Associate Professor of Psychology, Barnard College
1999-2007 Assistant Professor, Department of Psychology, Barnard College.
1998-1999 Research Staff Member, Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands.
1995-1998 Postdoctoral Fellow, Brain and Cognitive Sciences, University of Rochester

Professional Honors

- 2014-2015 Mary I. Bunting Fellow, Radcliffe Institute for Advanced Study
2013 Fellow, Association for Psychological Science (APS)
2011-2013 Tow Professorship for Distinguished Scholars and Practitioners, Barnard College
2000 *Frontiers of Science* Fellow, National Academies of Science and Engineering (NAS)
1994-1995 Spencer Foundation Dissertation Fellowship
1994 American Association of University Women American Fellowship (declined)

Selected Publications

- Senghas, A., A. Özyürek, and S. Goldin-Meadow (2013). Homesign as a way-station between co-speech gesture and sign language: The evolution of segmentation and sequencing. In R. Botha & M. Everaert (Eds.), *The Evolutionary Origins of Language*, of the series *Studies on the Evolution of Language*. Oxford University Press (62-76).
- Martin, A., Senghas, A., and Pyers, J. (2013). Age of Acquisition Effects on Mental Rotation: Evidence from Nicaraguan Sign Language. In S. Baiz, N. Goldman, and R. Hawkes (Eds.), *BUCLD 37: Proceedings of the 37th Annual Boston University Conference on Language Development*. Boston: Cascadilla Press (241-250).
- Rabagliati, H., A. Senghas, S. Johnson, and G. F. Marcus (2012). Infant rule learning: Advantage language, or advantage speech? *Public Library of Science PLoS ONE* 7(7): e40517.
doi:10.1371/journal.pone.0040517

- Flaherty, M. and A. Senghas (2011). Numerosity and Number Signs in Deaf Nicaraguan Adults. *Cognition*, **121**, 427-436.
- Senghas, A. (2010). The emergence of two functions for spatial devices in Nicaraguan Sign Language. *Human Development*, **53**, 287-302.
- Pyers, J. E., A. Shusterman, A. Senghas, E. Spelke, and K. Emmorey (2010). Spatial language supports spatial cognition: Evidence from learners of an emerging sign language. *Proceedings of the National Academy of Sciences (PNAS)* **107:27** (12116-12120).
- Senghas, A., and M. Coppola (2010). Getting to the point: How a simple gesture became a linguistic element in Nicaraguan signing. In D.J. Napoli and G. Mathur (Eds.), *Deaf Around the World: The Impact of Language*. New York: Oxford University Press (127-143).
- Coppola, M., and A. Senghas (2010). Deixis in an emerging sign language. In D. Brentari (Ed.), *Sign Languages: A Cambridge Language Survey*. Cambridge: Cambridge University Press (543-569).
- Coppola, M., and A. Senghas (2010). The path from point A to Point B: How gestures became language in Nicaraguan signing. In A. Smith, M. Schouwstra, B. de Boer, and K. Smith (Eds.), *The Evolution of Language: Proceedings of the Eighth International Conference*. Singapore: World Scientific (385-386).
- Senghas, A. (2010). Reinventing the word. In B. Malt and P. Wolff (Eds.), *Words and the Mind: How Words Capture Human Experience*. Oxford University Press (16-28).
- Pyers, J. and A. Senghas (2009). Language promotes false-belief understanding: Evidence from a new sign language. *Psychological Science*, **20:7**, 805-812.
- Pyers, J. E., and A. Senghas (2007). Reported action in Nicaraguan and American Sign Languages: Emerging versus established systems. In P. Perniss, R. Pfau, and M. Steinbach, (Eds.), *Visible variation: Comparative studies on sign language structure*. Berlin: Mouton de Gruyter.
- Senghas, A. (2005). Language emergence: Clues from a new Bedouin sign language. *Current Biology*, **15:12**, 463-465.
- Senghas, A., S. Kita, and A. Özyürek (2004). Children creating core properties of language: evidence from an emerging sign language in Nicaragua. *Science*, **305: 5691**, 1779-1782.
- Senghas, A. (2003). Intergenerational influence and ontogenetic development in the emergence of spatial grammar in Nicaraguan Sign Language. *Cognitive Development*, **18**, 511-531.
- Senghas, A., and M. Coppola (2001). Children creating language: How Nicaraguan Sign Language acquired a spatial grammar. *Psychological Science*, **12, 4**: 323-328.
- Kegl, J., A. Senghas, and M. Coppola (1999). Creation through contact: Sign language emergence and sign language change in Nicaragua. In M. DeGraff, (Ed.), *Language Creation and Language Change: Creolization, Diachrony, and Development*. Cambridge: MIT Press, 179-237.

Grant Support

Role: PI *The creation and enhancement of language*, National Institutes of Health NIH/NIDCD
 2009-2014, Renewal 2R01 DC005407
 2009-2011, Diversity Supplement 2R01 DC005407-06A1
 2008-2009, Bridge grant 2R56 DC005407
 2002-2008, Grant R01 DC005407

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EDUCATION

- 2006** **Ph.D., Harvard University**, Developmental Psychology
Dissertation: Interactions between language and thought in spatial
cognitive development (Advisor: Elizabeth Spelke)
- 1998** **Sc.B., Brown University**, Neuroscience with Honors, *magna cum laude*

POSITIONS HELD

- 2007- **Assistant Professor**, Psychology Department, Wesleyan University
- 2006-2007 **Post-Doctoral Researcher**, Psychology Department, Harvard University
- 2001-2006 **Doctoral Student**, Psychology Department, Harvard University
- 1998-2001 **Science Teacher (3rd-12th grade)**, Saint Ann's School, Brooklyn, NY

FELLOWSHIPS AND AWARDS

- 2003-2006 National Science Foundation Graduate Student Research Fellowship
- 2001-2003 Harvard University Graduate School of Arts and Sciences Fellowship
- 2002 Distinction in Teaching, Harvard University
- 1998 Phi Beta Kappa, Brown University

EXTERNAL GRANT FUNDING

- 2015-2017 **PENDING National Science Foundation**, \$724,528 (total costs)
Collaborative Project: Language structure and number word learning
- 2013-2016 **Early Literacy Grant, Liberty Bank Foundation**, \$30,000 (direct)
Kindergarten Kickstart in Middletown Public Schools
- 2009-2014 **National Science Foundation CAREER Award**, \$715,000 (total costs)
DRL-0845966 *The role of language in children's acquisition of number concepts*
- 2013 **Exploratory Grant, W. C. Graustein Memorial Fund**, \$2,500 (direct)
Envisioning university-community partnerships for early childhood
- 2011-2012 **Co-PI, MATTEL Corporation Play Research Grant**, \$25,000 (direct)
Understanding the power of play
- 2012 **NSF-REU Research Experience for Undergraduates Supplement**, \$10,500

PROFESSIONAL SERVICE - SELECTED

Reviewer for Child Development, Cognition, NSF grants, IES grants, and others
Wesleyan Ad hoc committee on education programs; Psychology stats and methods

PUBLICATIONS – PEER REVIEWED JOURNALS

*Student co-authors. ** Post-doc co-authors.

Leonard, J.*, Berkowitz, T., & **Shusterman, A.** (in press). The effect of friendly touch on delay-of-gratification in preschool children. *Quarterly Journal of Experimental Psychology*.

Schug, M.**, **Shusterman, A.**, Barth, H., & Patalano, A. (2013). Minimal group membership influences children's responses to novel group experience with group members. *Developmental Science*, 16(1), 47-55.

Shusterman, A., Lee, S.A., & Spelke, E.S. (2011). Cognitive effects of language on human navigation. *Cognition*, 120(2), 186-201.

Pyers, J., **Shusterman, A.**, Senghas, A., Emmorey, K., & Spelke, E. (2010). Evidence from users of an emerging sign language reveals that language supports spatial cognition. *Proceedings of the National Academy of Science*, 107 (27), 12116-12120.

Shusterman, A., Feld, L.*, Baer, L., & Keuthen, N. (2009). Affective regulation in trichotillomania: Evidence from a large-scale internet survey. *Behavior research and therapy*, 47(8), 637-44.

Shusterman, A., Lee, S.A., & Spelke, E. (2008). Young children's spontaneous use of geometry in maps. *Developmental Science Fast Track* 10 (1), 89-96.

Lee, S.A., **Shusterman, A.**, & Spelke, E. (2006). Reorientation and landmark-guided search by young children: Evidence for two systems. *Psychological Science* 17 (7), 577-582.

PUBLICATIONS – OTHER

Shusterman, A., Gibson, D.*, & Finder, B.* (2010). Acquiring first number words: The developmental trajectory of children's meanings for "two." *Proceedings of the 2009 Boston University Conference on Language Development*, Cascadilla Press.

Shusterman, A. & Spelke, E. (2005). Language and the development of spatial reasoning. In P. Carruthers, S. Laurence and S. Stich (eds.), *The Structure of the Innate Mind*. Oxford University Press.

Shusterman, A. (2013, April 26). Summer pre-K program shows great promise. *The Hartford Courant*.

Slusser, E.**, **Shusterman, A.**, & Barth, H. (2012). Understanding the Power of Play. Final research report to Mattel Corporation.