

Justin Halberda

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Developmental Psychology Lab:
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Vision and Cognition Lab:
<http://www.psy.jhu.edu/~visionandcognition/>

Academic Appointments

- 2010 - *Associate Professor* (Primary Appointment). Department of Psychological and Brain Sciences, Johns Hopkins University, Baltimore, MD
- 2010 - *Associate Professor* (Secondary Appointment). Department of Cognitive Science, Johns Hopkins University, Baltimore, MD
- 2004 - 2010 *Assistant Professor* (Primary Appointment). Department of Psychological and Brain Sciences, Johns Hopkins University, Baltimore, MD
- 2004 - 2010 *Assistant Professor* (Secondary Appointment). Department of Cognitive Science, Johns Hopkins University, Baltimore, MD
- 2003 – 2004 *Postdoctoral Fellow*. Laboratoire de Sciences Cognitives et Psycholinguistique, Ecole Normale Supérieure, CNRS. Paris, France
Sponsor: Emmanuel Dupoux
- 2001 – 2003 *Visiting Fellow*. Department of Psychology, Harvard University, Cambridge, MA

Education

- 1997-2003 New York University M.A. & Ph.D. in Cognitive Psychology
Advisor Susan Carey
Degree conferred May, 2003
- 1992-1997 College of Charleston Magna cum laude
B.S. *Psychology*
B.A. *Philosophy*
B.S. *Biochemistry*
B.A. *Chemistry*

Academic Awards and Honors

Johns Hopkins University Alumni Association Excellence in Teaching Award 2012, (1 of 2 awards given in Arts and Sciences) The Johns Hopkins University, 2012
Certificate of Distinction in Teaching, Harvard University, 2003
Graduate Fellowship, National Science Foundation, 1998-2001
Henry Mitchell MacCracken Graduate Fellowship, New York University, 1997-2001
Presidential Scholarship, College of Charleston, 1995
Lee Harwood Scholarship, College of Charleston, 1993
Sigma Alpha Phi, College of Charleston Honors Society
Phi Kappa Phi, National Honors Society

Grant Support

External Funding: *(Primary grants which fund my labs)*

NSF, DIP1227168, "Hard Fun Learning Mathematics: An Action Game To Stimulate Number Sense"
\$200,006 Total costs
Years: 2012-2016
Role: PI

NSF REESE, DRL1109513, "A Bayesian Approach To Number Reasoning"
\$159,164 Total costs
Years: 2011-2014
Role: PI

NIH R01, HD057258, "Development and function of nonverbal number approximation"
\$1,607,363 Total costs
Years: 2009-2014
Role: PI (Co-PI Lisa Feigenson)

NSF EAGER, DRL0937675, "The Psychophysical Assessment of Number Sense Acuity"
\$293,400 Total costs
Years: 2009-2011
Role: PI

NIH 3R01 HD057258-01A2S2, "Summer Research Experience for Students and Science Educators"
\$6700 Total costs
Years: 2010
Role: PI (Co-PI Lisa Feigenson)

NIH 3R01 HD057258-01A2S1, "Summer Research Experience for Students and Science Educators"
\$6700 Total costs
Years: 2009
Role: PI (Co-PI Lisa Feigenson)

Consortium Funding: *(Research and Training grants I have made significant contributions to)*

NSF DRL-1113648, "Broad Implementation: Creating Communities Of Learners For Informal Cognitive Science Education"

\$1,736,685 Total costs

JHU Subaward: \$154,885

Years: Sep 2011 - Aug 2014

Role: Associated Faculty

NSF IGERT, DGE 0549379, "Unifying the Science of Language"

\$3,182,734 Total costs

Years: 2007-2012

Role: Associated Faculty

Templeton Foundation, "Evolution, Cognition & Culture"

\$420,000, Research funds and speaker series

Years: 2007-2010

Funding breakdown: \$270,000 Metanexus Institute, \$60,000 John T.

Templeton Foundation, \$60,000 in matching funds from JHU KSAS.

Role: Associated Faculty & Member of the Advisory Board

Internal Funding: *(Internal grants awarded to me and those awarded to my students where I have functioned as the PI or sponsor for the research)*

PURA, "The Relationship between the Korean Board Game Baduk, and Processing Speed, Executive Function, and Short-Term Memory in Older Adults"

\$3,000 Total costs

Provost, The Johns Hopkins University

Years: 2008

Role: PI (Jill Lasak & Yonah Chi, *Provost Undergraduate Research Award*)

PURA, "Inference versus instruction"

\$3,000 Total costs

Provost, The Johns Hopkins University

Years: 2006

Role: PI (Meredith Brinster, *Provost Undergraduate Research Award*)

Sponsored Grants: *(External grants awarded to my students where I have functioned as the PI or sponsor for the research)*

NSERC, "Individual differences in visual working memory capacity assessed by the flicker task"

\$63,000, stipend and benefits costs

Natural Sciences and Engineering Research Council of Canada

Years: 2012 - 2015

Role: Sponsor (NSERC PhD Award to Hrag Pailian)

NSERC, "Visual working memory limits assessed by the Flicker paradigm"

\$34,600, stipend and benefits costs

Natural Sciences and Engineering Research Council of Canada

Years: 2011 - 2012

Role: Sponsor (NSERC Masters Award to Hrag Pailian)

NSERC, "Development and interaction of the Approximate Number System and Quantifiers"

\$63,000, stipend and benefits costs

Natural Sciences and Engineering Research Council of Canada

Years: 2010 - 2013

Role: Sponsor (NSERC PhD Award to Darko Odic)

NSERC, "Development of Number and the SNARC effect"

\$34,600, stipend and benefits costs

Natural Sciences and Engineering Research Council of Canada

Years: 2009 - 2010

Role: Sponsor (NSERC Masters Award to Darko Odic)

NSF, "Logical Reasoning In Human Infants"

\$135,000, tuition and stipend costs

NSF 06-592, Graduate Research Fellowship Program

Years: 2006-2009

Role: Sponsor (Co-Sponsor Lisa Feigenson, NSF predoc to Mariko Yamaguchi)

Professional Activities

Organizations and Societies

Association for Psychological Science

Cognitive Development Society

International Society on Infant Studies

Society for Research on Child Development

Vision Sciences Society

Grant Review Panels

National Science Foundation, April 2005

National Science Foundation (*ad hoc*), June 2009

National Science Foundation (*ad hoc*), April 2010

Several European Grant Reviews (*ad hoc*), 2009-2010

Reviewing: Books, Pre-Doc & Post-Doc Grants, Others

National Science Foundation: Linguistics, *Pre-Doctoral Fellowships*, 2010

Cambridge University Press, *book proposals in Cognitive Science*, 2008

MIT Press, *book proposals in Cognitive Science*, 2010

Oxford University Press, *book proposals in Psychology*, 2008

Reviewing Journals: Ad Hoc

British Journal of Developmental Psychology
BUCLD Language Conference
Child Development
Cognition
Cognitive Neuropsychology
Cognitive Neuroscience
Cognitive Science
Current Biology
Developmental Science
Developmental Psychology
Infancy
Journal of Child Language
Journal of Experimental Child Psychology

Journal of Experimental Psychology: Learning, Memory & Cognition
Journal of Vision
Language and Cognitive Processes
Learning & Individual Differences
Memory & Cognition
Neuropsychologia
Neuroscience
Perception & Psychophysics
PLoS ONE
Psychological Review
Psychological Science
Psychonomic Bulletin & Review
Trends in Cognitive Sciences

Refereed Journal Publications (* indicates student or post-doc)

Feigenson, L., *Libertus, M.E., & Halberda, J. (in press).

Links between the intuitive sense of number and formal mathematics ability. *Child Development Perspectives*.

*Odic, D., Hock, H., & Halberda, J. (in press). Hysteresis affects approximate number discrimination in young children. *Journal of Experimental Psychology: General*. [10.1037/a0030825](https://doi.org/10.1037/a0030825)

*Odic, D., Pietroski, P., Lidz, J., *Hunter, T. and Halberda, J. (in press).

Young Children's Understanding of 'More' and Discrimination of Area. *Journal of Experimental Psychology: Learning, Memory & Cognition (JEP:LMC)*. [10.1037/a0028874](https://doi.org/10.1037/a0028874)

*Odic, D., *Libertus, M., Feigenson, L. & Halberda, J. (in press).

Developmental change in the acuity of approximate number and area representations. *Developmental Psychology*.

*Im, H. Y. & Halberda, J. (2013).

The effects of sampling and internal noise on the representation of ensemble average size. *Attention, Perception, & Psychophysics* 75(2), 278-286.

*Zosh, J.M., *Brinster, M. & Halberda, J. (2013).

Optimal contrast: Competition between two referents improves word learning. *Applied Developmental Science*, 17(1), 20-28.

*Libertus, M. E., *Odic, D., & Halberda, J. (2012).

Intuitive Sense of Number Correlates With Math Scores on College-Entrance Examination. *Acta Psychologica*, 141(3), 373-379.

Halberda, J., *Ly, R., Wilmer, J., Naiman, D., & *Germine, L. (2012)

Number Sense across the lifespan as revealed by a massive internet-based sample. *Proceedings of the National Academy of Sciences (PNAS)* 109(28), 11116-11120. [doi/10.1073/pnas.1200196109](https://doi.org/10.1073/pnas.1200196109).

Mazzocco, M.M.M., Feigenson, L. & Halberda, J. (2011).

Preschoolers' precision of the Approximate Number System predicts later school mathematics performance. *PLoS ONE* 6(9): e23749. [doi:10.1371/journal.pone.0023749](https://doi.org/10.1371/journal.pone.0023749).

- *Libertus, M., Feigenson, L., & Halberda, J. (2011).
Preschool acuity of the approximate number system correlates with school math ability. *Developmental Science*, 14(6), 1292-1300. doi: 10.1111/j.1467-7687.2011.01080.x
- Pietroski, P., Lidz, J., *Hunter, T., *Odic, D. and Halberda, J. (2011).
Seeing what you mean, mostly. *Syntax and Semantics*, 37, Special Issue: Experiments at the Interfaces; (Ed) Jeffrey T. Runner, 187-224.
- Mazzocco, M.M.M., Feigenson, L. & Halberda, J. (2011).
Impaired acuity of the approximate number system underlies mathematical learning disability. *Child Development*, 82: 1224–1237. doi: 10.1111/j.1467-8624.2011.01608.x
- Lidz, J., Pietroski, P., *Hunter, T. & Halberda, J. (2011).
Interface transparency and the psychosemantics of ‘most’. *Natural Language Semantics*, 19, 227-256.
- *Zosh, J.M., Halberda, J. & Feigenson, L. (2011).
Memory for multiple visual ensembles in infancy. *Journal of Experimental Psychology: General*, 140(2), 141-158. doi: [10.1037/a0022925](https://doi.org/10.1037/a0022925).
- *Spiegel, C., & Halberda, J. (2011).
Rapid fast-mapping abilities in 2-year-olds. *Journal of Experimental Child Psychology*, 109(1), 132-140. doi:10.1016/j.jecp.2010.10.013.
- *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.
- *Hunter, T., Halberda, J., Lidz, J. and Pietroski, P. (2009).
Beyond Truth Conditions: the semantics of ‘most’. *SALT 18, Proceedings of the Semantics and Linguistic Theory Conference*.
- Pietroski, P., Lidz, J., *Hunter, T. & Halberda, J. (2009).
The meaning of ‘Most’: semantics, numerosity, and psychology. *Mind and Language*, 24(5), 554-585.
- Feigenson, L. & Halberda, J. (2008).
Conceptual knowledge increases infants' memory capacity. *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, 105(29), 9926-9930.
- Halberda, J., Mazzocco, M. & Feigenson, L. (2008).
Individual differences in nonverbal number acuity predict maths achievement. *Nature*, 455, 665-668 (doi:10.1038/nature07246).
- Halberda, J. & Feigenson, L. (2008).
Developmental change in the acuity of the “Number Sense”: The approximate number system in 3-, 4-, 5-, 6-year-olds and adults. *Developmental Psychology*, 44(5), 1457-1465.
- Halberda, J., *Taing, L. & Lidz, J. (2008).
The development of “most” comprehension and its potential dependence on counting-ability in preschoolers. *Language Learning and Development*, 4(2), 99-121.
- Halberda, J. (2006).
Is this a dax which I see before me? Use of the logical argument disjunctive syllogism supports word-learning in children and adults. *Cognitive Psychology*, 53(4), 310-344.
- Halberda, J., *Sires, S. & Feigenson, L. (2006).
Multiple spatially-overlapping sets can be enumerated in parallel. *Psychological Science*, 17(7), 572-576.
- Kouider, S., Halberda, J., Wood, J. & Carey, S. (2006).

- Acquisition of English number marking: The singular-plural distinction. *Language Learning and Development*, 2(1), 1-25.
- Feigenson, L. & Halberda, J. (2004).
Infants chunk object arrays into sets of individuals. *Cognition*, 91, 173-190.
- Halberda, J. (2003).
The development of a word-learning strategy. *Cognition*, 87, B23-B34.
- Halberda, J.P., Muddaugh, L.D., Gard, B.E., Jackson, B.P. (1997).
DAD1- and DAD2 like agonist effects on motor activity of C57 mice: Differences compared to rats. *Synapse*, 26 (1), 81-92.
- Bowers, R.L., Halberda, J.P., Mullen, L., May, K. (1997).
Captopril alters schedule induced polydipsia, urination and defecation in rats. *Pharmacology, Biochemistry, and Behavior*, 57, 353-359.

Publications In Review (* indicates student or post-doc)

- Delgado, C., Jones, M.G., You, H.S., Robertson, L., Halberda J. (in preparation). Understanding of size and measurement and its relation to the evolutionarily-based approximate number system.
- *Libertus, M.E., Landau B., Feigenson, L., Halberda, J. (in preparation). Numerical approximation and its mapping to number words in typically developing children and people with Williams syndrome.
- Hellgren, K., Halberda, J., Forsman, L., *Libertus, M. (in revision). Compromised approximate number system acuity in extremely preterm school-aged children.
- *Odic, D., Pietroski, P., Lidz, J., & Halberda, J. (under review) The language-number interface: evidence from the acquisition of most. *Language and Cognitive Processing*.
- *Libertus, M., *Odic, D., Feigenson, L., & Halberda, J. (under review). A brief vocabulary assessment questionnaire (BVAQ): Validating parental report of vocabulary size in 2-7-year-olds.
- *Odic, D., LeCorre, M. & Halberda, J. (under review). An asymmetry in the mapping between number words and the approximate number system.
- *Libertus, M.E., Feigenson, L., & Halberda, J. (submitted). Is approximate number precision a stable predictor of preschool math ability?
- *Odic, D., Pietroski, P., Lidz, J., *Hunter, T. and Halberda, J. (in revision).
Individuals and Non-Individuals in Cognition and Semantics: the Mass/Count Distinction and Quantity Representation.
- Halberda, J. (in revision).
Developmental change in the strategy that supports the mapping of novel labels to novel objects in children from 17 months to 4 years of age.

Commentaries and Book Chapters

- Halberda, J. & Feigenson, L. (2008). Set representations required. [Commentary] *Behavioral and Brain Sciences*, 31, 655-656.

Invited Meetings & Presentations

- Invited speaker, Halberda, J. (2012). Basic cognition for numbers: Potential impacts in the science classroom. *NIH Science Education Conversations Series*. October 2012.
- Keynote Address, Halberda, J. (2012). "La relación entre el proceso visual, los conceptos numéricos básicos y el significado de las palabras". *Encuentro sobre Adquisición y Desarrollo Habilidades Lingüísticas*, (UNAM) Universidad Nacional Autónoma de México en Ciudad de México, México, September 2012.
- Invited speaker, Halberda, J. (2012). Our gut sense for numbers. *AAAS Stage, USA Science & Engineering Festival*. April, 28-29. Washington, DC.
- Invited speaker, *The Cognitive Development Society*, Future Faces of Cognitive Development Research. Philadelphia PA, October 2011.
- Invited speaker, *The Society for Philosophy and Psychology*. Montreal, Canada, July 2011.
- Invited speaker, *Vague Quantities and Vague Quantifiers (VQ2)*, *Zentrum für Allgemeine Sprachwissenschaft (ZAS)*. Berlin, Germany, December 2010.
- Invited speaker, *Boston University Conference on Language Development 35, BUCLD*. Boston, MA, November 2010.
- Invited participant, "Space, Time and Number", *The 24th International Symposium on Attention and Performance*, Abbey de Vaux de Cernay, France, July 2010.
- Invited speaker, "NICHD Math Consortium Meeting", Bethesda MD, USA, May 2010.
- Invited participant, *National Academy of Sciences "German-American Frontiers of Science"*, Irvine, CA, June 2005.
- Invited participant, AHRB Hang Seng Centre "Reflections on Innateness" Conference, Sheffield, UK, April 2004.

Colloquia

Number: Vision, Language and Cognition

University of Chicago	<i>Dept. of Psychology</i>	Spring, 2012
Rutgers University	<i>RuCCS, IGERT series</i>	Fall, 2011
University of California, UCSD	<i>Dept. of Psychology</i>	Spring 2011
Johns Hopkins University	<i>Neuro-Education Initiative</i>	Fall, 2010
University of Virginia	<i>Dept. of Psychology, Developmental</i>	Fall 2010
University of Rochester	<i>Brain & Cognitive Sciences</i>	Spring, 2010
Harvard University	<i>Cognition, Brain & Behavior</i>	Fall, 2009
University of Maryland, Balt. County	<i>Dept. of Psychology</i>	Winter, 2008
Scuola Internazionale Superiore di Studi Avanzati, Trieste, Italy	<i>Cognitive Science Group</i>	Fall, 2003

Word Learning and Logical Inference

Duke University	<i>Dept. of Psychology and Neuroscience</i>	Spring, 2007
Johns Hopkins University	<i>Center for Language and Speech Processing</i>	Spring, 2007
University of Delaware	<i>Dept. of Psychology, Cognitive Group</i>	Fall, 2006
University of Maryland, Col. Park	<i>Dept. of Linguistics</i>	Spring, 2006
Universite d'Aix-Marseille	<i>Psychology and Cognitive Sciences</i>	Spring, 2004
University of Wisconsin-Madison	<i>Dept. of Psychology</i>	Spring, 2003
Scuola Internazionale Superiore di Studi Avanzati, Trieste, Italy.	<i>Cognitive Science Group</i>	Fall, 2003
Yale University	<i>Dept. of Psychology, Cognitive Group</i>	Spring, 2002

Conference Talks (* indicates student or post-doc)

- *Pailian, H. & Halberda, J. (2013). Moving Beyond Storage Limitations: Exploring the Dynamic Manipulation of Representations in VWM. *Talk presented at VSS, the Vision Sciences Society*, May 10-15 Naples, FL.
- *Odic, D. & Halberda, J. (2013) The independence of visual number and area processing: evidence from psychophysics, development, and eye-tracking. *Talk to be presented at VSS 2013*, May 10-15, Naples, Florida.
- Halberda, J., *Libertus, M. E. & Feigenson, L. (2013). The Approximate Number System (ANS): What is it and how might it be affecting classroom performance? *Talk presented at AERA, Annual meeting of The American Educational Research Association*. April 27– May 1, San Francisco, CA.
- Halberda, J., Bavelier, D., Landau, B., Hellgren, K., Forsman, L., Jacques, T., *Libertus, M. (2013). Training of Number Sense transfers broadly. *Talk presented at VSS 2013, The Vision Sciences Society*. May 10-15, Naples Florida.
- Halberda, J. (2013). Reasoning by exclusion: faces & voices, novel words and searching for objects. *Talk presented at SRCD*, April 18-20, Seattle, WA.
- Halberda, J. (2013). An interface between vision, numerical cognition, and word meanings. *Talk presented at AIC, Annual Interdisciplinary Conference*. January 27--February 1, Jackson Hole, WY.
- *Wellwood, A., *Odic, D., Halberda, J. & Lidz, J. (2012). Choosing quantity over quality: Syntax guides interpretive preferences for novel superlatives. *Talk and proceeding from CogSci Meeting of the Cognitive Science Society*. Aug 1- 4, Japan.
- Wilmer, J. B., *Germine, L., *Ly, R., *Hartshorne, J.K., *Kwok, H., *Pailian, H., Williams, M.A., & Halberda, J. (2012). The heritability and specificity of change detection ability. *Talk presented at VSS, the Vision Sciences Society*, May 11-16, Naples Florida.
- *Wellwood, A., Halberda, J., *Hunter, T., *Odic, D., Pietroski, P., & Lidz, J. (2012). Meaning more or most: evidence from 3-and-a-half year-olds. *Talk presented at CLS 48, The 48th Annual Meeting of the Chicago Linguistic Society*, April 19-21, Chicago, IL.
- Halberda, J. (2012). An ensemble group is selected and processed as a single item. *Talk presented at AIC 37, the Annual Interdisciplinary Conference*, January 30 – February 3, Breckenridge, CO.
- Halberda, J. (2011). The development of discrete and continuous quantification from infancy to childhood. *Talk presented at SRCD, the Society for Research in Child Development*, March 31- April 2, Montreal, Quebec.
- Halberda, J. & *Zosh, J. M. (2011). Competition among referents in word learning. *Talk presented at SRCD, the Society for Research in Child Development*, March 31- April 2, Montreal, Quebec.
- *Libertus, M.E., Halberda, J. & Feigenson, L. (2011). Approximate Number Discrimination Correlates With Math Abilities in Preschoolers. *Talk presented at SRCD, the Society for Research in Child Development*, March 31- April 2, Montreal, Quebec.
- Halberda, J. (2010). An interface between vision, numerical cognition and word meanings. *Talk presented at CogSci 2010, the Annual Meeting of the Cognitive Science Society*, August 11-14, Portland Oregon.
- Halberda, J. (2010). The Approximate Number System supports the learning and use of quantifier terms in children and adults. *Talk presented at ICIS, the International Conference on Infant Studies*, March 11-14, Baltimore, MD.
- Halberda, J., Lidz, J., Merickel, J., *Hunter, T. & Pietroski, P. (2009). Approximate number representations in the acquisition of 'most'. *Talk presented at BUCLD, the Boston University Conference on Language Development*, November 6-8 Boston, MA.
- Halberda, J. (2009). An interface between vision and numerical cognition. *Talk presented at VSS, the Vision Sciences Society*, May 8-13, Naples Florida.
- Lidz, J., Halberda, J., *Hunter, T., & Pietroski, P. (2009). Approximate and exact cardinality in the acquisition of most. *Talk presented at SRCD, the Society for Research in Child Development*, April 2-4 Denver, CO.
- Halberda, J. (2009). Mutual exclusivity as logical inference: Evidence for domain general disjunctive syllogism in 2-3 year olds. *Talk presented at SRCD, the Society for Research in Child Development*, April 2-4 Denver, CO.
- Halberda, J., Lidz, J., Pietroski, P., & *Hunter, T. (2009). Set based visual processing in the acquisition of 'most'. *Talk presented at LSA, the Linguistic Society of America*, January 8-11 San Francisco, CA.
- Pietroski, P., Halberda, J., *Hunter, T., & Lidz, J. (2009). Beyond truth conditions: The semantics of 'most'. *Talk presented at LSA, the Linguistic Society of America*, January 8-11 San Francisco, CA.
- Halberda, J. (2008). Developmental change in the computations that support the mapping of novel labels to novel objects. *Talk presented at ICIS, the International Conference on Infant Studies*, Vancouver BC, Canada.
- *Hunter, T., Halberda, J., Lidz, J. & Pietroski, P. (2008). Beyond truth conditions: The semantics of 'most'. *Talk presented at SALT 18, the 18th conference of Semantics and Linguistic Theory*, March 21-23, Amherst Massachusetts.

- Halberda, J., *Hunter, T., Pietroski, P. & Lidz, J. (2008). An interface between language and vision: quantifier words and set-based processing. *Talk presented at VSS, The Vision Sciences Society, May 9-14, Naples Florida.*
- Halberda, J., Lidz, J., Pietroski, P. & *Hunter, T. (2007). Language and number: Towards a psychosemantics for natural language quantifiers. *Talk presented at HOWL 4, the 4th Hopkins Workshop on Language: Grammar in Cognition, October 12-14, Baltimore Maryland.*
- Halberda, J. (2006). Logical inference, domain generality, and word-learning. *Invited talk presented at the annual meeting of the Eastern Psychological Association, Baltimore, MD.*
- *Taing, L., Halberda, J. & Feigenson, L. (2006). Counting in deaf and hearing individuals: An interaction of language and thought. *Talk presented at EPA, the annual meeting of the Eastern Psychological Association, Baltimore, MD.*
- Halberda, J. & Feigenson, L. (2005). Counting without individuals: Rapid parallel enumeration implicates preattentive object-files. *Talk presented at VSS, the Vision Sciences Society, Sarasota, FL.*
- Halberda, J. (2005). Logical inference motivates word-learning in two-year-olds. *Talk presented at SRCD, the Society for Research in Child Development, Atlanta, GA.*
- Kouider, S., Feigenson, L., Wood, J., Halberda, J. & Carey, S. (2004). Infant's understanding of the singular-plural distinction. *Talk presented at SPP-ESPP, The First Joint Conference of the Society for Philosophy & Psychology and The European Society for Philosophy & Psychology, Barcelona, SPAIN.*
- Halberda, J.P. (2002). Word-learning as logical inference: The case of mutual exclusivity. *Talk presented at BUCLD, the Boston University Conference on Language Development, Boston MA, USA.*

Conference Posters (* indicates student or post-doc)

- Zosh, J.M., *Verdine, B.N., Halberda, J. Hirsh-Pasek, K., & Golinkoff, R. (2013). Which is more? Approximate number sense varies by SES in preschoolers. *Poster to be presented at the 2013 Meeting of The Society for Research in Child Development Conference, April 18-20, Seattle, WA.*
- *Pailian, H., *Libertus, M., Feigenson, L., & Halberda, J. (2013). Developmental Changes in Visual Short-Term Memory (VSTM) Capacity Between Ages 3 and 8 Years. *Poster presented at SRCD, April 18-20 Seattle, WA.*
- *Pailian, H., *Libertus, M., Feigenson, L., & Halberda, J. (2013). Measuring Individual Differences in Children's Visual Short-Term Memory Capacity using the Flicker Paradigm. *Poster presented at SRCD, April 18-20 Seattle, WA.*
- *Odic, D., *Wellwood, A., Lidz, J., & Halberda, J. (2013) How word meanings interface with cognition: a case-study of children's acquisition of 'most'. *Poster to be presented at SRCD 2013, Seattle, Washington.*
- *Odic, D., *Libertus, M., Feigenson, L., & Halberda, J. (2013) The quantity of quantity: are visual area and number represented by one system, or two? *Poster to be presented at SRCD 2013, Seattle, Washington.*
- *Eisinger, R., *Im, H., *Pailian, H. & Halberda, J. (2013). Ensemble-based Change Detection. *Poster presented at VSS, the Vision Sciences Society. May 10-15, Naples, FL.*
- *Im, H., *Zhong, S., & Halberda, J. (2013). Biases in human number estimation are well-described by clustering algorithms from computer vision. *the Vision Sciences Society, 2013.*
- *Odic, D., *Libertus, M., Feigenson, L. & Halberda, J. (2012). The development of number and area acuity in young children. *Poster presented at The International Conference on Infant Studies (ICIS), June, Minneapolis, MN.*
- *Pailian, H. & Halberda, J. (2012). The Cost of Manipulating Representations in Visual Working Memory. *Poster presented at VSS, the Vision Sciences Society, May 6-11, Naples, FL.*
- Halberda, J., Pietroski, P., *Hunter, T., *Odic, D., *Wellwood, A., & Lidz, J. (2012). More and Most: Spatial vision affects word understandings on an ipad. *Poster presented at VSS, the Vision Sciences Society, May 11-16, Naples, FL.*
- *Odic, D. & Halberda, J. (2012). Representations of difficulty and confidence in numerical discrimination. *Poster presented at VSS, the Vision Sciences Society, May 11-16, Naples, FL.*
- *Pailian, H., & Halberda, J. (2012). The cost of manipulating representations in working memory. *Poster presented at VSS, the Vision Sciences Society, May 11-16, Naples, FL.*
- *Im, H. & Halberda, J. (2012). Accurately modeling visual working memory performance at the individual trial level. *Poster presented at VSS, the Vision Sciences Society, May 11-16, Naples, FL.*

- *Ly, R., *Im, H., *Eisinger, R. & Halberda, J. (2012). Measuring the coefficient of variation with continuously varying arrays. *Poster presented at VSS, the Vision Sciences Society*, May 11-16, Naples, FL.
- *Eisinger, R., *Ly, R., *Im, H. & Halberda, J. (2012). Ensemble-based subitizing. *Poster presented at VSS, the Vision Sciences Society*, May 11-16, Naples, FL.
- *Libertus, M., Feigenson, L., & Halberda, J. (2011). Approximate number discrimination predicts later math ability in preschoolers. *Seventh Biennial Meeting of the Cognitive Development Society, Philadelphia, USA*.
- *Odic, D., Hock, H. and Halberda, J. (2011). The effect of confidence hysteresis on number perception and decision-making. *Poster presented at CogSci, the 33rd Annual Conference of the Cognitive Science Society*, July 20-23, Boston, MA.
- Halberda, J. (2011). An ensemble group functions as a single item for attention and memory. *Poster presented at VSS, the Vision Sciences Society*, May 6-11, Naples, FL.
- *Im, H. Y., Zhang, W., & Halberda, J. (2011). Capacity and resolution for approximate number in perception and memory. *Poster presented at VSS, the Vision Sciences Society*, May 6-11, Naples, FL.
- *Odic, D., Hock, H., & Halberda, J. (2011). The effect of confidence hysteresis on numerical discrimination. *Poster presented at VSS, the Vision Sciences Society*, May 6-11, Naples, FL.
- *Pailian, H. & Halberda, J. (2011). Individual Differences in VWM Capacity Assessed by the Flicker Task. *Poster presented at VSS, the Vision Sciences Society*, May 6-11, Naples, FL.
- Vogel, S., Price, G., Halberda, J., *Ly, R. & Ansari, D. (2011). Cerebral correlates of non-symbolic numerical magnitude processing: the role of surface area. *Poster presented at HBM, Human Brain Mapping*, June 26-30, Quebec City, Canada.
- Slusser, E.B., Shusterman, A., Halberda, J. & *Odic, D. (2011). The role of non-verbal numerical representations in the acquisition of early number word meanings. *Poster presented at JPS, 41st Annual Meeting of the Jean Piaget Society*, June 2-4, Berkeley, California.
- Mazzocco, M., Feigenson, L. & Halberda, J. (2011). Impaired Acuity of the Approximate Number System Underlies Mathematical Learning Disability (Dyscalculia). *Poster presented at SRCD, the Society for Research in Child Development*, March 31- April 2, Montreal, Quebec.
- *Odic, D., *Hunter, T., Lidz, J.L., Pietroski, P., Steven-White, A. & Halberda, J. (2011). Children's understanding of mass-noun "more". *Poster presented at SRCD, the Society for Research in Child Development*, March 31- April 2, Montreal, Quebec.
- *Libertus, M., *Stevenson, A., *Odic, D., Feigenson, L. & Halberda, J. (2011). The Developmental Vocabulary Assessment for Parents (DVAP): A Novel Tool to Measure Vocabulary Size in 3- to 5-year-old Children. *Poster presented at SRCD, the Society for Research in Child Development*, March 31- April 2, Montreal, Quebec.
- Mazzocco, M., Halberda, J. & Feigenson, L. (2011). Precision of the Approximate Number System (ANS) Predicts Later Mathematics Performance. *Poster presented at SRCD, the Society for Research in Child Development*, March 31- April 2, Montreal, Quebec.
- Shusterman, A., Slusser, E.B., Halberda, J. & *Odic, D. (2011). Connecting Early Number Word Knowledge and Approximate Number System Acuity. *Poster presented at SRCD, the Society for Research in Child Development*, March 31- April 2, Montreal, Quebec.
- *Im, H. Y. & Halberda, J. (2010). The time course of consolidation of ensemble feature in visual working memory. *Poster presented at VSS, the Vision Sciences Society*, Naples, FL.
- *Odic, D., *Ly, R., *Hunter, T., Pietroski, P., Lidz, J. & Halberda, J. (2010). Number and area perception engage similar representations: evidence from a discrimination task. *Poster presented at VSS, the Vision Sciences Society*, Naples, FL.
- Halberda, J., Le Corre, M., *Odic, D. & *Stevenson, A. (2010). Young children's mapping between exact and approximate meanings for number words. *Poster presented at ICIS, the International Conference on Infant Studies*, March 11-14, Baltimore, MD.
- Halberda, J. & Nichols, S. (2010). Young children's understanding of possible and impossible events in a physical probability device. *Poster presented at ICIS, the International Conference on Infant Studies*, March 11-14, Baltimore, MD.
- *Ly, R., *Im, H. Y. & Halberda, J. (2009). Spatial overlap of collections affects the resolution of ensemble features. *Poster presented at VSS, the Vision Sciences Society*, May 8-13, Naples Florida.

- *Spiegel, C., *Yamaguchi, M., Heverly-Fitt, S. & Halberda, J. (2009). Children's use of Disjunctive Syllogism in mapping novel voices to novel characters. *Poster presented at SRCD, the Society for Research in Child Development*, April 2-4 Denver, CO.
- *Yamaguchi, M., Austin, R., Halberda, J., & Feigenson, L. (2009). Preschoolers' use of mutual exclusivity in a social context. *Poster presented at SRCD, the Society for Research in Child Development*, April 2-4 Denver, CO.
- *Spiegel, C., Nishimura, M., Hritz, A., & Halberda, J. (2009). Toddlers learn multiple new words in 3 seconds flat. *Poster presented at SRCD, the Society for Research in Child Development*, April 2-4 Denver, CO.
- Halberda, J., Lidz, J., *Hunter, T., Pietroski, P., & Ekman, K. (2009). Development of "most" comprehension in 42-60 month olds. *Poster presented at SRCD, the Society for Research in Child Development*, April 2-4 Denver, CO.
- *López-González, M., Legendre, G. & Halberda, J. (2008). Acquisition of Spanish's ser and estar: Experimental evidence for insensitivity to copular semantics. *Poster presented at IASCL08, the International Congress for the Study of Child Language*, July 28 – August 1, Edinburgh, SCOTLAND.
- *Zosh, J., Feigenson, L. & Halberda, J. (2008). Parallel enumeration of multiple spatially-overlapping sets in infancy. *Poster presented at ICIS, the International Conference on Infant Studies*, Vancouver BC, CANADA.
- *Spiegel, C., *Zosh, J. & Halberda, J. (2008). Children use Disjunctive Syllogism and fast-mapping to learn multiple novel labels in a single session. *Poster presented at ICIS, the International Conference on Infant Studies*, Vancouver BC, CANADA.
- Halberda, J. (2007). Subitizing sets and set-based selection: Early visual features determine what counts as an individual for visual processing. *Poster presented at VSS, the Vision Sciences Society*, Sarasota, FL.
- *Zosh, J. M., Feigenson, L., & Halberda, J. (2007). Infants' ability to enumerate multiple spatially-overlapping sets in parallel. *Poster presented at VSS, the Vision Sciences Society*, Sarasota, FL.
- *Yamaguchi, M., Halberda, J., & Feigenson, L. (2007). Preschoolers' use of mutual exclusivity for mapping individual faces & voices. *Poster presented at SRCD, the Society for Research in Child Development*, Boston, MA.
- *Zosh, J., Brinster, M. & Halberda, J. (2007). Inference Is Better Than Instruction. *Poster presented at SRCD, the Society for Research in Child Development*, Boston MA, USA.
- Franconeri, S., Halberda, J., Alvarez, G., & Feigenson, L., (2004). Common fate can define objects in multiple-object tracking. *Poster presented at VSS, the Vision Sciences Society*, Sarasota, FL.
- Halberda, J.P. (2003). Two-year-olds' fast-mapping of novel labels: How fast is fast? *Poster presented at SRCD, the Society for Research in Child Development*, Tampa Bay, FL.
- Feigenson, L. & Halberda, J.P. (2002). Looking at the limits on numerical ability: Infants chunks large sets into smaller sets. *Poster presented at ICIS, the International Conference on Infant Studies*, Toronto, CANADA.
- Sorrentino, C. M. & Halberda, J.P. (2001). Do multiple proper names indicate multiple individuals? Evidence from children and adults. *Poster presented at SRCD, the Society for Research on Child Development*, Minneapolis, MN.
- Halberda, J.P. (2000). The novel label/novel object strategy: A case of developmental discontinuity? *Poster presented at ICIS, the International Conference on Infant Studies*, Brighton, ENGLAND.
- Halberda, J.P. (1999). Do novel labels go with novel objects? Evidence from a new word learning paradigm. *Poster presented at SRCD, the Society for Research on Child Development*, Albuquerque, NM.
- Rayls, K., Waid L. R., & Halberda, J. P. (1998). Correlates of attention deficit disorder in adults: Differential diagnosis. *Poster presented at APA, the Meeting of the American Psychological Association*, San Francisco, CA.
- Middaugh, L.D., Halberda, J.P., Gard, B.E. (1996). The DAD2-like agonist quinpirole produces monotonic reductions in motor activity of C57 mice. *Poster presented at Neuroscience, Society for Neuroscience Abstracts*, 22.

Graduate Advising (Primary)

Hrag Pailian Director of Ph.D. dissertation committee. Department of Psychological and Brain Sciences, Johns Hopkins University (Ph.D. expected 2015)

Darko Odic Director of Ph.D. dissertation committee. Department of Psychological and Brain Sciences, Johns Hopkins University (Ph.D. expected 2014)

Hee Yeon Im Director of Ph.D. dissertation committee. Department of Psychological and Brain Sciences, Johns Hopkins University (Ph.D. expected 2013)

Chad Spiegel Director of M.A. thesis committee. "Fast-mapping in two-year-olds: referent selection and referent retention of multiple novel labels" Department of Psychological and Brain Sciences, Johns Hopkins University (2009)

current position, Senior Clinical Research Coordinator, The Henry M. Jackson Foundation for the Advancement of Military Medicine, Bethesda, MD.

Len Taing Director of M.A. thesis committee. "Counting in deaf and hearing individuals: An interaction of language and thought" Department of Psychological and Brain Sciences, Johns Hopkins University (2006)

current position, Bioinformatics Engineer, Dana-Farber Cancer Institute, Harvard School of Public Health, Harvard University, Cambridge, MA.

Graduate Advising (Secondary)

Mariko Moher (Yamaguchi) Secondary Advisor of Ph.D. dissertation (Lisa Feigenson – Primary).

"Selection and representation of multiple items in working memory by infants" Department of Psychological and Brain Sciences, Johns Hopkins University (2011)

current position, Assistant Professor of Psychology, Williams College, Williamstown, MA.

Jennifer Zosh Secondary Advisor of Ph.D. dissertation (Lisa Feigenson – Primary). "Beyond 'what' and 'how many': An investigation of working memory for objects in infancy" Department of Psychological and Brain Sciences, Johns Hopkins University (2008)

current position, Assistant Professor of Human Development and Family Studies, Penn State University, Brandywine, PA.

Graduate and Select Undergraduate Advising (Other)

External examiner. Lilia Rissman. "Event participant representations and the instrumental role: A cross-linguistic study." Department of Cognitive Science, Johns Hopkins University (2013)

External examiner for Graduate Board Oral examination. Erin Zaroukian. "Quantification and (un)certainly" Department of Cognitive Science, Johns Hopkins University (2012)

External examiner for Ph.D. dissertation. Julie Krause. "What non-conceptual content should be" Department of Philosophy, Johns Hopkins University (2012)

External examiner for Ph.D. dissertation. Mónica López-González. "Ser and Estar: their syntax, semantics, pragmatics, and acquisition in Mexican Spanish" Department of Cognitive Science, Johns Hopkins University (2010)

External examiner for Ph.D. dissertation. Lisa Levers. "Mind, nature and normativity in Hume" Department of Philosophy, Johns Hopkins University (2010)

External examiner for Ph.D. dissertation. Eric Morton. "Naturalism, normativity, and the space of reason" Department of Philosophy, Johns Hopkins University (2009)

External examiner for Ph.D. dissertation. Viplov Saini. "Endogenous asymmetries in dynamic procurement auctions" Department of Economics, Johns Hopkins University (2009)

External examiner for Ph.D. dissertation. Christopher J. Metcalf. "Essays on the economics of innovation and technology" Department of Economics, Johns Hopkins University (2007)

External examiner for Ph.D. dissertation. Adam Buchwald. "Sound structure representation, repair and well-formedness: Grammar in spoken language production" Department of Cognitive Science, Johns Hopkins University (2006)

Member of B.A. Honors thesis committee. Rachel Austin. Johns Hopkins University (2010)
Member of B.A. Honors thesis committee. Arin Tuerk. Johns Hopkins University (2008)
Director of B.A. Honors thesis committee. Meredith Brinster. Johns Hopkins University (2007)
Director of B.A. Honors thesis committee. Turner Cobden. Johns Hopkins University (2007)
Member of B.A. Honors thesis committee. Jared Saletin. Johns Hopkins University (2007)
Member of B.A. Honors thesis committee. Dylan Selterman. Johns Hopkins University (2006)

Courses Taught

Foundations of Mind, (w/ Lisa Feigenson)

Undergraduate Intro-level Lecture & Lab, ≈ 60 students per semester
Johns Hopkins University, 2005, 2006, 2007, 2008, 2009, 2011, 2012

Careers in Psychology, (w/ related faculty)

Undergraduate Intro-level Survey & Talk Series, ≈ 100 students per semester
Johns Hopkins University, 2008, 2009, 2010, 2011, 2012

Advanced Seminar in Vision, (w/ related faculty)

Graduate Seminar, ≈ 15 students per semester
Johns Hopkins University, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012

Graduate Seminar in Semantics and Language Acquisition, (w/ Jeff Lidz, Paul Pietroski)

Graduate Seminar, ≈12 students per semester
University of Maryland, Linguistics, 2006, 2013

Advanced Seminar in Cognitive Psychology, (w/ related faculty)

Graduate Survey Seminar, ≈ 12 students per semester
Johns Hopkins University, 2004, 2006, 2008, 2010

Advanced Practicum in Teaching,

Graduate Seminar, ≈ 3 students per semester
Johns Hopkins University, 2008, 2009, 2010, 2011, 2012

Older Courses

Mental Models, Mental Logic,

Undergraduate Upper-level Seminar, ≈ 15 students per semester
Johns Hopkins University, 2004, 2005

Advanced Seminar in Cognitive Development, (w/ Lisa Feigenson)

Graduate Seminar, ≈12 students per semester
Department d'Etudes Cognitives, ENS, Paris, 2004

Advanced Seminar in Cognitive Development, (w/ Barbara Landau)

Graduate Seminar, ≈ 10 students per semester
Johns Hopkins University, 2008

Origins of Knowledge,

Undergraduate Intro-level Lecture & Lab, ≈ 20 students per semester
Teaching Fellow, Harvard University, 2003

Cognitive Psychology,

Undergraduate Intro-level Lecture & Section, ≈ 20 students per semester
Teaching Fellow, Harvard University, 2001

Evolutionary Psychology,

Undergraduate Intro-level Lecture & Section, ≈ 25 students per semester

Teaching assistant, New York University, 2000
Introductory Logic I & II,
Undergraduate One-on-One Tutoring, ≈ 10 students per semester
Teaching assistant, College of Charleston, 1997
Physiological Psychology Lab,
Undergraduate Rodent Lab Course, ≈ 20 students per semester
Teaching assistant, College of Charleston, 1996

Examples of University and Departmental Service

Director of Undergraduate Studies, Psychological and Brain Sciences. 2006-07, 2007-08, 2008-09, 2009-10, 2010-11, 2011-12, 2012-2013
Director of Undergraduate Steering Committee in Psychology. 2006-07, 2007-08, 2008-09, 2009-10, 2010-11, 2011-12, 2012-2013
Faculty Advisor to Psi Chi, National Honors Society in Psychology. 2006-07, 2007-08, 2008-09, 2009-10, 2010-11, 2011-12, 2012-2013
Departmental Liaison for Research Library Services. 2005-06, 2006-07, 2007-08, 2008-09, 2009-10, 2010-11, 2011-12, 2012-2013
Search Committee for University Social Sciences Research Librarian. 2005-06, 2006-07
Chair of search committee for Teaching Professor in Clinical Psychology. 2011-12, 2012-13
Review of Academic Assessment for Psychology, regional and federal accreditation. 2008-09, 2009-10
Advisory Board, JHU Teaching Certification. 2009-10
Rhodes Scholar Finalist Interviews (Panel member). 2009
Fullbright Grantee Interviews (Panel member). 2010